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Quality of the Doctoral Study Programme in Education

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Olomouc, Czech Republic
2014

Declaration of Originality

I declare that the dissertation is my original work entitled by "Quality of the Doctoral Study Programme in Education". The literature resources used in this work are clearly quoted in both the text and references.

Student ID Number: _____

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Signature Date

ACKNOWLEDGEMENTS

I would like to thank Doc. Mgr. Jana Poláchová Vašťatková, Ph.D. for her tangible guidance throughout this thesis. I am also grateful to the respondents for their generous trust and contribution in the survey. I am indebted to the colleagues and friends for their supportive efforts in practical implementation of the research project. The greatest thanks are given to my families for their unreserved encouragement all the time.

ABSTRACT

The doctoral thesis is aimed to analyze the concept of quality from different perspectives to evaluate the doctoral study programme in education. To meet with the objective, the transformative view of quality is identified as the theoretical basis and the framework of evaluation is figured out with three steps including the perceived ideal of doctoral study programme in education, the perceived reality of doctoral study programme in education, and the impact of doctoral study programme in education. Meanwhile, the model of quality is formulated as the empirical pursuit. Not only the evaluation criteria are created by the current Ph.D. students' perspective on the ideal and reality of doctoral study programme in education, but also the effect of doctoral study is evaluated by Ph.D. graduates' preparation for their academic path. Furthermore, mixed methods have been applied in the investigation. On the one hand, the current Ph.D. students' expectation on the ideal of doctoral study programme in education is examined by the questionnaires in which the indicators have covered each segment of the procedure from the enrollment to graduation. The reality is explored simultaneously to discover the distance from the ideal of doctoral study programme in education on the perspective of current Ph.D. students. As the sample, the doctoral study programme in the Czech Republic and China has been referred to the quantitative research. On the other hand, the life stories of Ph.D. graduates are generalized from the experience before, during, and after the doctoral study through the qualitative inquiry. The respondents are selected from the doctoral study programme in the Czech Republic. And the life stories are analyzed to interpret the effect of doctoral study on their professional path by undertaking the grounded theory. Additionally, the practical implication is proposed to the quality art of doctoral study programme in education.

Keywords: doctoral education, doctoral study programme in education, quality, evaluation, model

CONTENT

1. INTRODUCTION

Since the objective of a “knowledge-based economy” was devised in the Lisbon Strategy, the growth of social productivity has been more and more connected with the training, research and innovation especially in higher education (Lisbon European Council, 2000). After a decade, the aim of “smart growth” is still emphasized by the economy based on knowledge and innovation as drivers (European Commission, 2010). However, the university is not an ivory tower anymore through the universal expansion. The market-driven process is exposed to direct the transition of higher education in practice. In the circumstances, the production of academic outcomes has been queried critically as the original and basic function of university.

In an entirely contemporary era of knowledge economy, the innovation is beckoned at an unprecedented level especially on the talented human resources and advanced academics in a society. There is no suspicion that doctoral education has prepared the maximum outputs in driving the progress of science and technology in the numerous domains. Doctoral programmes are responsible to provide the superior quality of disciplinary researches, especially under the effect of globalization and magnitude of expansion in tertiary education. Therefore, as two of the most essential issues in higher education studies, both the doctoral education and quality assurance have aroused the concerns from either public or private stakeholders.

For one thing, the doctoral education takes the essential role in representing the scientific standard particularly at a university. For another, quality control is the crucial issue in the national education system. However, the researches on these two issues have merely developed on the parallel paths. Although the quality assurance has been concerned with the research mission on the doctoral level, the aporia is manifested by the lack of model in evaluation the doctoral study programme. Especially on the teaching mission, the query emerges on whether qualified graduates have been prepared to verify the outcome of doctoral study programme.

On the one hand, the studies on doctoral education take emphasis on the

academic role of scientific research in exploring the original idea through the cooperation between the experts and novice scholars. And the quality of doctoral education is evaluated to verify the research outcomes by the academic indicators. On the other hand, the quality of higher education attracts the attention on the efficiency of cultivation the next generation in the tertiary study programme especially on the first and second cycle.

Therefore, the thesis concentrates on the analysis on the concept of quality from different perspectives to evaluate the practical programme. The thesis does deal with the ignored educating mission in preparing the future researchers. To focus on the educating mission, the objective of training is determined sensitively by the disciplinary differences in their own intellectual tasks, particular qualities, professional ethics, value, and culture (Becher, 1994). In this thesis, the author focuses on the discipline of education as the prior attempt for three essential reasons.

On the first place, the Ph.D. graduates in education are supposed to be positioned to do the fundamental work in diverse area of education system. And the Ph.D. graduates' researches are expected to shape the educational status of the following generations and the future society. Additionally, the graduates are supposed to be prepared for the position of teacher educators frequently at universities or research institutions. They are engaged in the multigenerational career as significant characters. It's uniquely essential to strengthen the preparation of future educational researchers in the doctoral study programme.

Secondly, education is characterized by the multidisciplinary foundation among the diverse fields of science. It seems like "hybrids of the humanities and the sciences" (Golde, 2007). And it is a field drawn on multidiscipline for various epistemologies, methodologies, and theoretical approaches to study education phenomena, resulting in a situation in which there is "no canon, there are no core methods" (Schoenfeld, 1999a: 167). The uncertainty and dispute posed in the field of education acquires attention on the effectiveness in advancing the research on doctoral education.

Thirdly, education is also a field characterized by the inclusion of heterogeneous contributors and membership from different area. The Ph.D. students in education have little formal training in education research before they start their doctoral study with their undergraduate and master's degrees usually in other fields or disciplines or focused almost entirely on education practice (Labaree, 2003). Besides, most education graduate students are supposed to be enrolled in an older age, with working experience, and on a part-time basis (Eisenhart & Dehann, 2005). It is vital for the doctoral study programme in education to ensure the quality of their pedagogies in helping their learning and adjusting to the new challenge as Ph.D. students.

Hence, it is typically crucial to take on urgency of the research on teaching mission for preparation the next generation of educational researchers involved in the doctoral study programme in education.

Nowadays, the doctoral study turns to be the compulsory stage for university teachers to be initiated into the academic circle. Simultaneously, it is the most potential position for Ph.D. graduates to work at the higher education institutions. Although there is a range of roles for Ph.D. graduates based on the doctoral study programme in education, the academic is the primary pursuit. To prepare the scholarship, graduate education is considered as the period of "anticipatory socialization" (Van Maanen, 1983a: 9-10). The socialization that occurs during graduate education contributes to how faculty members understand their work and assume their professional roles (Austin, 2002). Through formal and informal opportunities, the socialization occurs as doctoral students learn knowledge and skills required for work in the field, interact with faculty and student peers, and integrate into the activities of their specialties (Weidman & Twale & Stein, 2001: 25-27).

However, the doctoral study programme in education is approved to be short of planning in a way to prepare for the Ph.D. students' professional development of identity. The nature of academic career is an absence of attention in the process of doctoral study (Golde & Dore, 2001: 19-29). On the one hand, the doctoral education

is characterized by a lack of systematically and developmentally organized preparation experiences (Austin & McDaniels, 2006: 397-456). On the other hand, the Ph.D. students fail to receive feedback to clearly explain their performance (Lovitts, 2004). To meet with the demand, this thesis explores the role of doctoral study on Ph.D. graduates' career path of academics with specific attention on the socialization professionalized in education.

In conclusion, the quality of doctoral study programme in education is the core of this thesis. The main objective is to analyze the concept of quality from different perspectives and to formulate the model of quality to evaluate the practical programme. The cultivation mission is emphasized as the role of preparing the future educational researchers. Through the exploration, the doctoral study is uncovered to be the professional preparation process of Ph.D. students on the path to the scholarship in education. Thus, it becomes to be the key of opening a "Pandora's Box" of quality by answering the question: how does the preparation process work in the doctoral study programme in education?

Firstly, the conception of quality is identified with the transformative view and the evaluation framework is figured out to direct the empirical studies. Secondly, the ideal of the doctoral study programme in education is investigated to create the criteria of evaluation on the perspective of current Ph.D. students as the most essential stakeholders. Thirdly, the model of professional preparation is conducted to disclose the impact of doctoral study on the Ph.D. graduates' academic path based on their study experiences. Fourthly, the advanced step continues with the purpose of formulation the quality model of doctoral study programme in education by interpreting the preparation process of participants. Fifthly, the obstacles and recommendations are expected to be proposed to improve the quality of doctoral study programme in education with special consideration of the stakeholders' perception according to the model of quality and the result of survey on the reality of their study experiences.

Ultimately, the structure of the thesis follows the aims of thesis stated above. There are eight chapters in this thesis. To start with, the topic is introduced with concentration on the aims of thesis. On the second place, the background and previous researches are reviewed in diverse domains of doctoral education. Thirdly, basic theoretical studies establish the foundation of this thesis including the concept of quality and the strategy of evaluation. In the fourth chapter, the methodology of empirical studies is identified with the mixed methods framework and the practical design. Then the quantitative and qualitative research approach and results are explored in the fifth and sixth chapters respectively to uncover the perspective of Ph.D. students and the experience of Ph.D. graduates involved in the doctoral study programme in education. Moreover, the findings of the studies are discussed with the theoretical interpretation. Finally, the whole research is concluded to figure out the contribution of this doctoral thesis to the educational theory and practice.

2. DOCTORAL EDUCATION FROM DIFFERENT PERSPECTIVES

As the members of the Organisation for Economic Cooperation and Development (hereinafter “OECD”), the school systems are shaped by the International Standard Classification of Education (hereinafter “ISCED”), which was developed by the statistical branch of the United Nations Educational, Scientific and Cultural Organisation (hereinafter “UNESCO”), adopted formally whether in China or the Czech Republic. ISCED Level 6 is the secondary stage of tertiary education leading to an advanced research qualification (OECD, 2012). The programmes are therefore devoted to advanced study and original research and are not based on course-work only. This level of education requires the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. Meanwhile, doctoral education is the ultimate level and relatively autonomous section in tertiary education which aims to train the professional human assets in fostering the advancement and originality in science and technology, to do scientific research in increasing the competition of nation, and to provide social service in creating the innovation-oriented country. Doctorate holders form the most educated group of the population and those most likely to contribute to the development and expansion of knowledge, science and technology. In this chapter, the theoretical and practical background of this work is going to be elaborated as the starting point.

“Academic” is one of the proudest word in the vocabulary in education derived from Plato’s Academy and founded in Athens in the fourth century BC as the embryonic form of the first university (Volkart, 1986). The usage of “academic” is contrast with “practical”, “relevant” or “professional” (Barrow & Milburn, 1990: 9). “Degree” refers to the “rank given by a college or university to a student who has completed a required course of study, or to a distinguished person as an honor”

(Webster, 1984). The modern academic system of degrees evolved and expanded in the medieval university, spreading everywhere across the globe as the institution did.

The doctorate appeared in medieval Europe as a license to teach at a medieval university. The right to grant it was originally reserved to the church but slowly became a universal license to teach by the university. The qualification structure recognizes Bachelor, Master and Doctoral levels as defined by the Bologna Process. “Ph.D.” is the abbreviation of “Doctor of Philosophy” in English-speaking countries, which originated from the Latin “philosophiae doctor or doctor philosophiae” and awarded by the doctoral degree-granted institutions as the highest level of academic degrees. However, the term “philosophy” is used in a broader sense rather than solely in the discipline of Philosophy, which means that an individual with the title of “Ph.D.” is identified as a “doctor” customarily.

The Ph.D. degree was initially launched into higher education in Germany at the beginning of the nineteenth century. Then gradually involved in the American academic world since the first generation of the three graduates achieved a Ph.D. degree at Yale in 1861 (Arlt, 1981: 2). At the highest level of education system, doctoral education has exported a high proportion of human resources as researchers, scholars, teachers and leaders in various disciplines of the society since the spreading of doctoral education worldwide in the twentieth century.

The emergency of the professional programme and the spread of globalization drive the mobility of academics from the ivory tower to real estate. In 1990s, professional programmes were introduced to doctoral education widely in the world including Ed.D., D. Eng, DBA, and so on. Plenty of researchers were attracted to classify the difference between the academic study programme and professional programme in doctoral education. In the specific subject of education, the different characters of Ed.D. and Ph.D. study programme were compared from the purpose, admission process and thesis assessment by survey in 38 Australian doctoral education institutions (Maxwell & Shanahan, 1996). As well as the survey of

cross-disciplines, The importance of trans-professional working and the "authentic" professional voice was revealed especially by the quantitative and qualitative data obtained from STEM subjects (engineers, pharmacists, nurses and computing professionals) (Smith, et al., 2012). As work-based doctorates, their learning experience showed the effect of profession and career from knowledge (Costley & Lester, 2012). Nevertheless, most of the researches on the quality of doctoral study programme typically refer to the academic research programme. Accordingly, the doctoral study programme covers only the academic research programme in this thesis.

2.1 Doctoral education system in the Czech Republic and China

In European Union, the academic qualifications including doctoral degree are standardized through the Bologna Process. As one of the member states, “graduates of doctoral degree programmes are awarded the degree of ‘doktor’ (i.e. ‘doctor’, abbreviated as ‘Ph.D.’, used after the name), or ‘doktor teologie’ (abbreviated as ‘Th.D.’, used after the name) in the field of theology in the Czech Republic” (MEYS, 2009: 22). Nevertheless, it differs from its Chinese counterpart. The general designation of the highest level of “Degrees” or “Academic Degrees” is “Doctor’s Degree” (“Bo Shi” in Chinese phonetic transcription) including both the “Academic Degree” (or called “Scientific Degree”) and “Professional Degree” according to the Article 3 of “Regulations of the People’s Republic of China on Academic Degrees (2004 Amendment)” (MoE, 2004). The doctor degrees are conferred in accordance with the 13 “Fields of Disciplines of Conferring Academic degrees” including “Philosophy, Economics, Law, Education, Literature, History, Natural Sciences, Engineering, Agronomy, Medicine, Administration, and Arts” such as “Ph.D. in Education” and 39 “Professional Degrees” such as “Doctor of Education” (“Ed.D.”) in “Catalogue of Disciplines for Degree-conferring and Talents-cultivation 2011” under the “Measures for the establishment and management of Catalogue of Disciplines for Degree-conferring and Talents-cultivation” (MoE, 2011; 2009).

Speaking of the doctoral education in Czech history, the system of scientific training was established according to the Soviet model in the 1950s. The researchers have reviewed the doctoral education in that period. “The scientific training was practically identical with doctoral studies elsewhere, including the defence of a thesis. Graduates in this system were awarded the degree of ‘Candidate of Sciences’ (CSc). The HEIs (The abbreviation of higher education institutions), the Academy of Sciences and some research institutes were allowed to award this degree.” in the “OECD thematic review”. (2006: 35)

After the political revolution, the research and science gradually returned to higher education institutions supported potentially by the higher education policy (White Paper, 2001). The Act of 1990 introduced doctoral studies leading to the degree of “doktor” aims to prepare researchers for scientific work (Quality Assurance system, 2005). The “dual” system of scientific and academic degrees lasted until 1999 (OECD thematic review, 2006). According to the latest educational plan in the Czech Republic, the issue of “quality and relevance” has been set up as one of the three priority areas from 2010 to 2015 (The strategic plan, 2010). The standards and guidelines for quality assurance in the European Higher Education Area have also been promoted in adoption and implementation of higher education institutions as the Accreditation Commission joined the full membership of European Association for Quality Assurance in Higher Education (abbreviation as “ENQA”) in 2002 (Standards and guidelines, 2009). However, the standards of doctoral study programmes conclude five indicators: contents of the studies, information and technical resources, guarantor of the study programme, academic staff and scientific, research, development, art and other innovative activity (Accreditation, 2013). The implementation process is shaped by these standards in practice.

“The type of higher education activities is determined by the type of accredited

study programmes being provided" (ACT No. 111[1], 1998). In the Czech Republic, "higher education institutions are public, private and state" (ACT No. 111, 1998). The doctoral study programs are organized by the authorized degree-conferred institution. In the higher education system in China, the doctoral education is launched only in public universities and some of the scientifically research institutions (Higher Education Law, 1998). "The master's and doctor's degrees shall be conferred by those institutions of higher learning and scientific research institutes authorized by the State Council. A list of institutions of higher learning and scientific research institutes that may confer academic degrees and the disciplines in which academic degrees may be conferred shall be submitted to the State Council by its Academic Degrees Committee for approval and promulgation." (Regulations, 2004) "Each degree-conferring entity shall establish an academic degree evaluation committee and form dissertation defence committees for the disciplines concerned. A dissertation defense committee must include relevant experts from other entities, and the committee members shall be selected and determined by the degree-conferring entity concerned. The name list of the members of the academic degree evaluation committee shall be determined by the degree-conferring entity, and shall be reported to and put on records at the relevant departments of the State Council and the Academic Degrees Committee of the State Council." (Regulations, 2004)

"Internal regulations of a public higher education institution are subject to registration by the Ministry (ACT No. 111, 1998)" in the Czech Republic. "The academic community of a higher education institution is created by its academic staff and students." (ACT No. 111, 1998) Simultaneously in China, except the Ministry of Education of the People's Republic of China, "the state council shall establish an Academic Degrees Committee to direct the work of conferring academic degrees throughout the country"; "the Academic Degrees Committee shall consist of a chairman, vice-chairmen and other members"; "the chairman, vice-chairmen and

[1] The new law of higher education is under preparation in the Czech Republic.

other members shall be appointed and removed by the State Council" (Regulations, 2004).

In the Czech Republic, "admission to a doctoral study programme is conditioned by proper completion of studies in a master study programme; doctoral students in the field of arts must hold an academic degree" (ACT No. 111, 1998). However, "any citizen who supports the leadership of the Communist Party of China and the Socialist system and has attained certain academic standards may apply for an appropriate academic degree in accordance with the provisions of these Regulations (Regulations, 2004)" in China. And "the doctor's degree shall be conferred on postgraduates in institutions of higher learning or scientific research institutes or persons with qualifications equivalent to postgraduates on graduation, who have passed examinations in the required courses for the doctor's degree and successfully defended their dissertations and have attained the following academic standards: (1) having a firm and comprehensive grasp of basic theories and profound and systematic specialized knowledge in the discipline concerned; (2) having the ability to undertake independent scientific research; and (3) having made creative achievements in science or in a special technology." (Regulations, 2004) The students with a bachelor degree of specific disciplines and subjects could be admitted in a doctoral study program according to the regulation made by Ministry of Education (Regulations, 2004).

In the higher education institutions of the Czech Republic, "the academic staff is represented by employees of a higher education institution performing pedagogical, scholarly, research, developmental, artistic or other creative activity. The academic staff is to take heed of the good name of the higher education institution. The academic staff consists of professors, associate professors, senior assistants, assistants, lecturers as well as scientific, research and development workers taking part in pedagogical activities. The academic staff at a higher education institution performs duties of teachers. Other specialists may take part in lecturing on the basis of work contracts beyond the scope of regular employment. The statute of visiting professors

is stipulated in internal regulations of the higher education institution." Meanwhile, in China, the levels of staff at higher education institutions are assistant teacher, lecture, vise-professor and professor (Higher Education Law, 1998). The requirement of each level is standardized by the Ministry of Education according to their achievement in academic research and teaching experience.

2.2 Doctoral education institutions and doctoral study programme

The research on doctoral education was not detached from postgraduate education (or graduate education in North America) until the 1990s. The doctoral study programme was gradually perceived as one of the essential topics of doctoral thesis in education in the preceding decades. Plenty of efforts are devoted to the research on doctoral education exclusively concerned with the recruitment, duration, completion and attrition rate; the relationship between supervisors and Ph.D. students, interaction among peers and social inclusion; the scale, composition, demographic characters and educational background of Ph.D. students; the organizational structure and internationalization; content of study and academic assessment of thesis; the employment of graduates (Li & Poláchová Vašťatková, 2013). However, the deeper researches are seldom to be discovered with specific concentration on a respective subject, although it has been commonly recommended that it is benefit to explore the root of doctoral study including its pedagogy beneath the complicated education system (Young, 2001; Golde, 2007).

As the foundation of this thesis, the previous literatures are reviewed in a broader way by searching for the studies with the keywords of "doctoral education", "doctoral programme", "Ph.D.", "quality of study programme", or "education evaluation" in the database, such as the "ProQuest Educational Journals", "Jstor", and "Eric" as well as the research outputs by worldwide organizations, for example the "OECD", "ENQA", "AAU" and so on. However, the complicated nature of problems in education makes summarization in education research more difficult than in most other fields and disciplines (Berliner, 2002). To get a holistic image of the research area and the

interrelationship among elements, the author attempts to generate the essential findings of the academics. Far from being separated, the Ph.D. students, doctoral education institution and study programme form an indivisible framework for the quality of doctoral education. None of each part takes a superior role than the other ones. In this subchapter, the existing studies have been assigned into two fields according to the main objectives of studies: the doctoral education institutions and doctoral study programme, the Ph.D. students and graduates.

Generally speaking, the traditional evaluation on institutions is the routine responsibility of educational accreditation organizations to award the degree conferring authority by the national ministry of each country. As the doctoral education institutions are oriented by the national authority with the federal objectives, the focus is more relative with the enrollments, academic outputs, research projects, libraries, and constructive rate of staff with the academic title of “professor” or “docent” and so on. Whether the study programme and the Ph.D. students’ study have been supported with sufficient resources and personnel or not is the most essential indicator for the government (Accreditation Commission Standards, 2013). As the first wave of studies on doctoral education, the history is briefly analyzed especially on the organization of purposes, institutions, students and programme in the United States (Berelson, 1960). Moreover, the international institutions make effort on the international comparison of the ranking system of the doctoral education institutions worldwide involved as one of the most essential components of universities. As the conclusion at the beginning of this thesis, the objectives of the researches by these organizations concern more of the quantitative characters in academic productivity especially on the academic contribution, innovative technology and so on. As the first comparative research on doctoral education, the organization of doctoral education is compared among the chief industrial countries of the world (Clark, 1993). Bologna Process in Europe attributes to the unification of academic degree institutions as well by the registration system of graduate schools in each country emerged in European

countries (Woodward, et al., 2004). Although there are a lot of statistical results from these researches, the findings are not so closely related on the aims of this thesis. Nevertheless, the evaluation approaches are referenced in the third subchapter with concentration on the theoretical background of “evaluation”. Specifically, the internal climate and culture of institutions has been noticed by the independent researchers in the field of education. The most frequent key points in previous studies are the relationship between supervisor and Ph.D. students, the interaction among peers, racial inclusion and so on.

On the one hand, relationship between the supervisors and the Ph.D. students is an attractive issue in the researches of doctoral education. It is important to examine, evaluate and possibly modify the models of students’ supervision to maintain the quality of education at the doctoral level (Grevholm & Persson & Wall, 2005). Grevholm, et al. has presented a traditional model of supervision as “Supervisors (pose problems) -Doctoral students (solve problems)” in the simplified way and also a dynamic Luleå model for education of doctoral students and guidance of supervisors verified by the questionnaires (2005). It has concluded the roles and responsibilities as advisors in doctoral education by in-depth interviews of 25 exemplary doctoral advisors who have graduated a large number of doctoral students (Barnes & Austin, 2008). The supervision process provides the basis of the learning process for Ph.D. students to be lead to greater insight of the issues in the specific subject. The Ph.D. students are more likely to make good progress to develop good interpersonal working relationship with their supervisors (Ives & Rowley, 2005). Based on Rose’s Ideal Mentor Scale (IMS), it is observed that female doctoral students rating the item of "Believe in me" much more important than male students (Bell-Ellison & Dedrick, 2008). The roles and responsibilities of various parties in supervision of Ph.D. students are deeply analyzed from numerous parties including supervisors, supervisory committee and the doctoral students (Handbook on graduate supervision, 2012).

On the other hand, the problem of social isolation and racial inclusion has risen in the doctoral institutions. And the reasons have been discovered in three aspects. Firstly, the shortage of interaction needed from peers in the institutions. For newer enrollments, the advanced ones are expected to play the role as emotional mentors (Gardner, 2007; Brown, 2009). However, the students with similar cultural background remain limited contacts with their own social group in the programme (Holbrook, et al., 2004). The influence of culture on the feeling of social isolation in doctoral programmes is one of the most identifying factors in student attrition (Ali & Kohun, 2008). The problem is also typical for foreign students' racial inclusion in the doctoral education institutions. For example, Asian students are not expecting to receive limited guidance from their supervisors and work in isolation (Borg, et al., 2009). The academic and nonacademic influences on graduate degree plans were identified for the racial differences among African American, Hispanic, and White students in a longitudinal survey (Pascarella, et al., 2004). It was revealed the barriers, inequalities and hierarchies encountered by Chicanos/Latinos (as) through their doctorate programmes (Ramirez, 2007). "Race remains a salient factor for the study participants, even though a climate of inclusiveness in the classroom and strong support from the faculty were described by most" (DeBoyes, 2009). The social isolation is needed to be considered at the broader institutional and emotional support and specific departmental level (Janta & Lugosi & Brown, 2014). The institutional culture provides the resources and platform for Ph.D. students' study in the doctoral programme. There are close relationship with the first topic as well.

The doctoral study programme has drawn the attention of researchers from national authorities, academic association and international organizations for the substantial influence on the innovation of human society. As the extension of tertiary education during the earlier decade, the doctoral study programme has to face with the distinct motivation of students. It is the core to guarantee the quality targeted at the ideal of a doctoral study programme of the respective disciplines in higher education

institutions. Above all, there are indicators of the content of study in the researches of doctoral study programme. “As crucial elements of the process of graduate education, instructors of research courses have a vital role to play in developing cadres of researchers who are willing to engage in uncomfortable dialogues across disciplines, methods, methodologies, theoretical perspective, and epistemologies about the power and potential (both beneficial and dangerous) of educational research”(Gunzenhauser & Gerstl-Pepin, 2006). The curriculum change showed that doctoral study always included relevant courses. "Research methods courses are often listed" (Eggins, 2008). The attitudes of students are studied toward courses in social sciences and towards social sciences in general at a university of technology based on the survey of evaluation of teaching, students’ essays and participating observation in social science courses and interviews and a hypothesis about the influence of the social climate and its inertia on the position of the students (Schmidtová, 2012).

The academic examination of thesis is also identified as the performance indicators in assessment of doctoral study programme. The nature and purpose of the oral examination is discussed above the issue of whether or not the main purpose of the Ph.D. is to produce a thesis (an original contribution to knowledge) or a researcher, with certain skills and abilities. The assessment of research theses were with regard to these factors: the criteria used by examiners and the levels of student performance expected by them; critical judgment points in the examination process; the examiners’ perceptions of their own role in the process; the influence on examiners of previously published work, the views of the other examiners and their knowledge of the student’s supervisor and department, and the level of perceived responsibility between student and supervisor (Mullins & Kiley, 2002). The examiners’ report of Ph.D. thesis has been studied by their devoting in assessing the quality and comments the value (Holbrook, et al., 2004). The apprenticeship training in addition to formal coursework is appraised to apply in the notion of novice educators (Collins & Brown & Holum, 1999). Burkhardt and Schoenfeld (2003) suggest that students are more likely to

become productive researchers and to develop useful habits and perspectives more rapidly, if they are members of a research community.

In conclusion, the research at the doctoral level is still in the progress of infrastructure stage which is not as precise as other levels in the tertiary education system. There are many researches with focus on the basic issues of doctoral study which provide a macroscopic description of the programme rather than microscopic investigation to reflect the truth of doctoral study. In other words, the scarcity of theoretical exploration makes it still a mystery to understand the nature of doctoral study. There is less theoretical interpretation than the investigation of the practicalities. Meanwhile, there are many arguments about quality but hardly any possess neither a concrete definition of quality of the doctoral study programme nor a framework of quality model.

There are more conclusions derived from the practical experience rather than theoretical analysis in doctoral education. In methodology, there are more quantitative statistic survey rather than qualitative interview. A framework is needed to build up in evaluation the quality of doctoral study with the existing fragments in the previous outputs. Another thing, the researchers would like to focus on statistics and analysis on the dissertation of Ph.D. students rather than the empirical survey on the reality and perspective of them or other stakeholders in the study programme. Especially in evaluation the outcome of doctoral programme, most of them choose to assess the dissertation of Ph.D. students. However, there are even more sections in the procedure which takes significant role in doctoral education programme. And the subjective experience, outcome and perspective from stakeholders are what the programme counts to them, meanwhile, are the most valuable indicator in evaluation the quality of study programme as well. There are complexes of cognitive, emotional, and social effect from doctoral study on the people involved in the programme. In this thesis, the author will try to get the picture of doctoral study by investigating the internal viewpoint of participants involved in the programme.

In the Czech Republic, “doctoral study programmes are aimed at scientific research and independent creative activity in the field of research/development, or independent theoretical and creative activity in the field of arts. The study program in each level is planned by the degree-conferred institution according to the needs of education. The standard length of study is three years. Studies within the framework of doctoral study programmes are subject to individual curricula under the guidance of a tutor.” (ACT No. 111, 1998) The doctoral study is completed with a state doctoral examination and the defence of a dissertation. These are to prove the ability of independent activity in the field of research/development, or independent theoretical and creative artistic activity. The dissertation must contain original and published results or the results accepted for publication. Studies within the framework of doctoral study programmes are monitored and evaluated by a Specialist Board appointed in compliance with internal regulations of the higher education institution or its part that has the corresponding study programme accredited. “The study programmes in the same field of study may be evaluated by a common Specialist Board, if such an agreement is made among several higher education institutions or their parts. The chair of the Specialist Board is chosen from its members on the basis of their voting.” (ACT No. 111, 1998)

While in China, the dissertation defence committee shall be responsible for examining the dissertations for master’s or doctor’s degrees, organizing their oral defence and adopting resolutions whether or not to confer the master’s or doctor’s degrees. Each resolution shall be adopted by secret ballot and with a two-thirds majority of the committee members supporting and then submitted to the academic degree evaluation committee. The academic degree evaluation committee shall be responsible for examining and approving the list of holders of the bachelor’s degree and for making a decision whether or not to approve each resolution on the conferment of a master’s or doctor’s degree submitted by the dissertation defence committee. Each decision shall be adopted by secret ballot and with a simple majority

of the committee members supporting. The list of persons to be conferred a master's or doctor's degree shall be submitted to the Academic Degrees Committee of the State Council for the record. "After a resolution to confer an academic degree has been adopted by the academic degree evaluation committee, the degree-conferring entity shall issue an appropriate diploma to the holder of the academic degree." (Regulations, 2004)

In the Czech Republic, there are nine faculties of Education at universities in Prague, Liberec, Ústí nad Labem, Plzeň, České Budějovice, Hradec Králové, Brno, Olomouc and Ostrava[2]. Regulated by the Higher Education Act, academic degrees and titles are authorized to award by higher education institutions. Nowadays, the doctoral study programme in education are organized by four higher education institutions with the authority to award the doctor degree to qualified graduates in the faculty of education and art, Palacky University in Olomouc, Charles University in Prague, Masaryk University in Brno. In EU, only 3% of 18.2 million tertiary students were studying for a doctoral degree in 2004. It was found that more than every second doctorate student was in science or engineering a statistic of the population and component of doctoral students (Meri, 2007). The other research was focused on the completion of doctoral study programme in which 549 graduates successfully completed the doctoral study in education 1999 - 2011 in the Czech Republic (Mareš, 2013).

[2] The Faculty of Humanities at Tomas Bata University in Zlín has recently also gained the accreditation for PhD. Studies in Education.

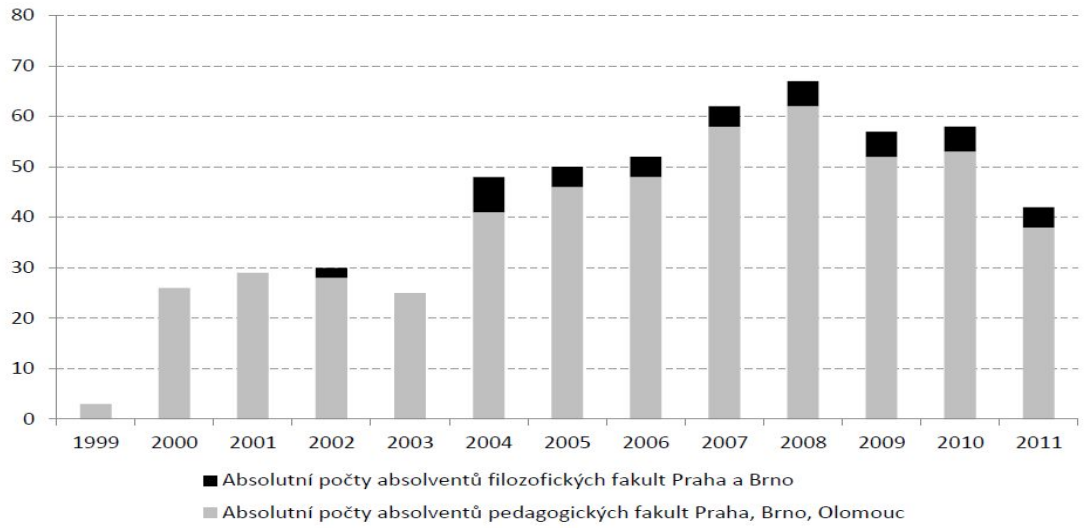


Fig.2-1. The Number of Ph.D. Graduates in the Doctoral Study Programme in Education (The Czech Republic)

Source: (Mareš, 2013)

In China, there are thirteen fields of disciplines of conferring academic degrees, *"the Humanities and Social Science"* (including six branches, "Philosophy", "Economics", "Law", "Education (including "Education", "Psychology" and "Physical education")", "Literature" and "History"), *"Science"*, *"Engineering"*, *"Agriculture"*, *"Medicine"*, *"Management"* and *"Arts"* (MoE, 2011). And the academic degrees are conferred based on the fields of disciplines according to the "Regulations of the People's Republic of China on Academic Degrees (2004 Amendment)" (Fields of disciplines, 2013). Under each field of disciplines, there are two levels disciplines. First-level disciplines consist of one hundred and ten disciplines (First-level disciplines, 2013), in which the fields of "Education" also contains "Psychology" and "Physical Education" as well as "Education" disciplines (MoE, 2011). Second-level Disciplines constitute the fundamental units of First-level. The list of Second-level disciplines is authorized compiled per five years by the state academic committee and ministry of education of the People's Republic of China (Second-level disciplines, 2013). On the degree diploma, the field of discipline and

the First-level discipline should be filled out with the full name of degree conferred institution, and whether the Second-level discipline should also be written on the diploma is up to the institution (Inform of adjustment, 2013). Thus, the graduates with a doctor degree in Education could be titled as Ph.D. in Education or Ph.D. in his specialty such as higher education and so on. Under the First-level discipline of "Education", there are ten second-level disciplines including "Educational Principle", "Curriculum and Instruction", "History of Education", "Comparative Education", "Pre-school Education", "Higher Education", "Adult Education", "Vocational Education", "Special Education", and "Educational Technology". However, the institution could set up and adjust disciplines and specialties independently with the authority to confer the degree in the First-level discipline (Inform of establishment, 2013). There are also other Second-level disciplines in practice, such as "Educational Policy and Law", "Teacher Training and Education", "Distance Learning" and so on (Framework of disciplines, 2013).

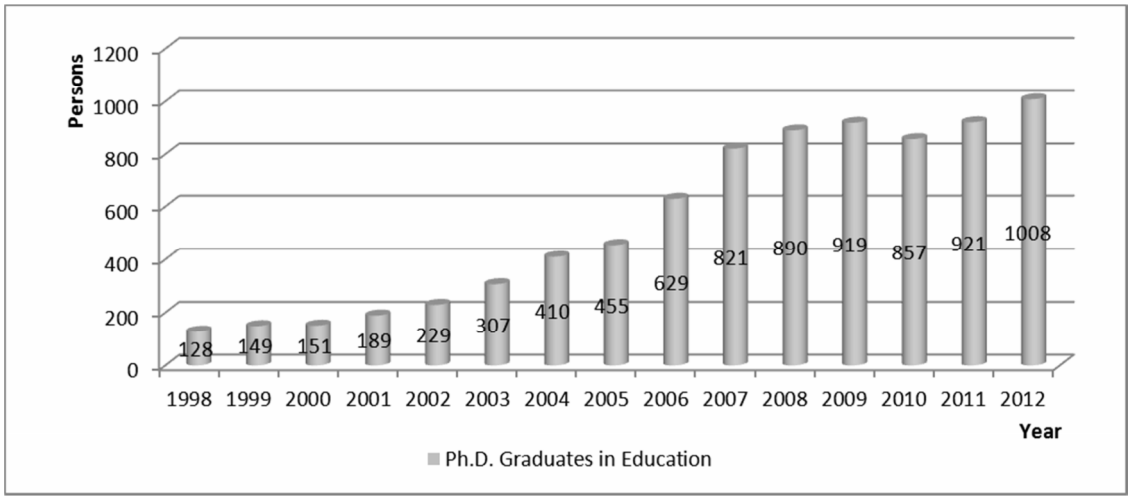


Fig.2-2. The Number of Ph.D. Graduates in the Doctoral Study Programme in Education (China)

Source: (The annual amount, 1998-2012)

There were 8,063 Ph.D. students who graduated with a doctor degree in education from the year of 1998 to 2012 in China. Meanwhile, the number of Ph.D.

graduates in education has increased 6.875 times since 1998. According the statistical reports, there are more Ph.D. graduates in China than the graduates in the Czech Republic. However, the rate of graduates with a doctor degree in Education is lower in China than in the Czech Republic with the consideration of the population distance of these two countries. The numbers demonstrate that doctoral study in education in these two countries is on the rise rapidly. Furthermore, the governments of these countries show the growing ambitions in enhancing the scale of doctoral study programme at higher education institutions. The trend arouses the academic interest and national concern of the quality issue in need. There is the similar situation with limited researches on doctoral study programme in education by the scholars in both countries. Based on the data base of higher education researches in the Czech Republic, there are seldom researches with the focus on doctoral education from 1996 to 2011 although the missed attention on the invisible group of Ph.D. graduates in education pointed out by Mareš (2013). On the conference in Velké Bílovice, the role of university teachers has been discussed and the characters of new academic workers stepped from the doctoral study programme immediately are noticed by the scholars on December of 2013 which is probably the beginning of the research on the Ph.D. graduates in the Czech Republic as far as the previous literature has shown.

Meanwhile, few researches are mostly supported only by the education ministry. The longest project in this field was the study on “degrees and graduate education: strategy and planning”, in which the forecasting the tendency of graduate education in new decade including the structure and distribution of disciplines, the management and instruction of institutions, the quality and sympathetic system of graduate education in China was sought in 2011 (Xie, Wang, Yuan, 2011). There is another project investigating and reporting the quality of Ph.D. students with its series of publications on doctoral education in China (Research group on the quality of Ph.D. students in China, 2010). However, there are more macrograph view rather than micrograph standpoints in these researches organized by the educational authorities.

Additionally, there have been a few articles specialized on the research of doctoral study in education in Chinese academic database CNKI and Wan Fang excluding of the professional education of Ed.D. programme. During these researches, the evaluation of the Ph.D. students especially on their thesis is the most frequent topic. Regarding the researches on doctoral study of education in China, the quality of thesis has been used as the most essential indicator in assessment the quality of Ph.D. students (Zhao, 2010; Wu, 2011; Chang & Yu, 2012; Du & Ouyang, 2012; Yang, 2012). Besides, the individual growth and the social contribution has been appreciated (Sun, 2011). The quality of programme is assessed by comparison with the programme of education specialized in higher education in America (Li, 2007; Bao, 2012). The doctoral education institutions of education specialized in higher education is reviewed by transverse and longitudinal comparison of the 16 institutions all over the country (Huang, 2011). Among researches on doctoral study in education in China, the investigations are mostly based on a specific field of education especially on comparative education and higher education which is caused by the huge amount of institutions and students as well as the accreditation system of academic degrees.

2.3 Ph.D. students and graduates

To start with the current Ph.D. students, the recruitment is considered essentially on the structure of Ph.D. students with different educational background. The report of the higher education institutions in UK has calculated the academic homology of the Ph.D. students, for instance, the rate of Ph.D. students who are directly from a first degree or master to a doctoral study programme from the same higher education institution or from different higher education institution (Ph.D. research degrees, 2005). And the barriers in the process of enrollment into a doctoral study programme have been identified to be the need for planned recruitment, the lack of financial resources and an insufficient pool of eligible student surveyed by the interview of 100 administrators (Quarterman, 2008). Besides, the demographic character of students in

the doctoral study programme is paid attention by researchers at the prior period. Nearly all of the investigation of Ph.D. students starts from the statistics of their gender, however, the discrimination existed in earning a Ph.D. degree process has been concentrated in the following research (Ferber & Kordick, 1978). Factors affecting doctoral degree progress of women doctoral students are explored by questionnaires in survey of doctoral programmes for recipients in the Stanford School of Education between 1978 and 1989 (Maher & Ford & Thompson, 2004). Recent thesis on doctoral study also attributed to gender differentials in pursuing a doctoral degree (Espinoza, 2008). Demographic characters of Ph.D. students are statically introduced by sex, citizenship status, race, ethnicity, age, disability status, marital status and dependents, parents' education as well as fields of study (Thurgood & Golladay & Hill, 2006).

Secondly, the completion rate has been concentrated by researchers and institutions as well as the determinants and implications as a performance indicator in the assessment of the doctoral study programme (Booth & Satchell, 1996). There are 78% of the students who completed a graduate programme in which 60% of them receive a Ph.D. degree and 18% leave with a master degree in their study of the 1981-83 at the University of California, Berkeley (Nerad & Miller, 1996). "The national attrition rate across disciplines has averaged around 50 percent, and some departments have lost an even higher percentage" (Nelson & Lovitts, 2001). The rate of Ph.D. completion has been raised by the differences in financial backing, student domicile, age on entry, previous qualifications and subject, as well as study mode (Ph.D. research degrees, 2005). Among all of the Ph.D. students, international students had the highest completion rates in all fields and cohorts (Nerad & Miller, 1996). The organizational factors contributing to high attrition rates are concluded as the student selection process, programme structure, ineffective advisers, ineffective mentors, programme flexibility, and the community of the programme (Lipschutz, 1993). The influence of programme characteristics such as Graduate Initiative brought

to the doctoral students' attrition and graduation probabilities (Ehrenberg, et al., 2007). The subjective factors of doctoral students included relationships with significant others, family responsibilities, support systems, employment responsibilities, financial strains, time constraints and overload (Smith, et al., 2006). The Ph.D. Completion Project addressed the issues surrounding Ph.D. completion and attrition and contributed to increase doctoral degree completion in six areas including selection, mentoring, financial support, and programme environment, research mode of the field and processes and procedures (Ph.D. completion project, 2007).

The last but not the least, regarding the Ph.D. graduates, there are independent institutions supported by the public or private funds to investigate the statement of employment. Faced with the expansion of U.S. science Ph.D., the Association of American Universities reports how the Ph.D. graduates are employed and criticizes that the research university fail in tracking the career success of their graduates (Leatherman, 1998). The Survey of Earned Doctorates (SED) has begun to collect data continuously on the number and characteristics of individuals receiving research doctoral degrees from all accredited U.S. institutions to assess characteristics and trends in doctorate education and degrees (Doctorate recipients, 2012). They discovered the recipients in doctoral education programme and their study path to earn a doctoral degree in the preceding decades. The publication rates and income as well as the employment activity are used as indicators in analyzing the attainments of Ph.D. graduates (Clark & Centra, 1982). The relationship of the study field and their employment position has been compared to reflect the efficacy of the skills and training experience worked on Ph.D. students (Metcalfe & Gray, 2005). OECD collected the data of doctoral graduates in seven countries to get their characteristics in the labor market and global mobility (Auriol, 2007). The Center for Innovation and Research in Graduate Education (CIRGE) conducts a project "Social Science Ph.D.s-Five+ Years out (SS5)" which exactly investigated the employment history, career and family factor, graduated school achievements, and the quality and

usefulness of their doctoral education of Ph.D. graduates (Picciano, et al., 2007). The issue relative to the quality of doctoral education would be discussed in the next subchapter with the theme of “quality”.

To sum up, the differences with the two countries greatly depend on the historical development, traditional culture, and legal environment. Nevertheless, there are more and more common characteristics in the doctoral study programme on the micro level according to the unification of the academic mechanism influenced by the globalization.

3. QUALITY IN RELATION TO DOCTORAL EDUCATION

To shape the empirical research, the theoretical rationale embodies the definition of key concepts as fundamental theory in close relation to the thesis and the framework of evaluation strategy of doctoral study programme in education. The definitions and models are compared according to the historical and multidisciplinary view. In this chapter, quality and evaluation is identified as the most essential concepts.

The aim of this subchapter is to describe how our own approach to understanding quality draws on and extends existing quality frameworks. The theoretical rationale has argued strongly in favor of the fundamental notion of quality, especially of quality in education and doctoral education that underlie the subject of research. The conceptualizations have been explored in this thesis based on various viewpoints and their interrelationships with multidisciplinary preferences.

As a concept, quality is full of intuitive understanding but a lack of accurate description. To define the concept, there are mainly three disciplinary circumscriptions in physical, philosophical and management theory. The multidisciplinary usage is distinguished as a physical attribute in natural science, as the property of states or events in philosophical sense, and as a relative concept to evaluate/assure the fitness of product/service in management theory.

In spite of the specific usage as a term of a physical attribute in natural science, it is a property or characteristic of states or events which determine “what it is like” in philosophical sense. Generally, “quality is associated with *perfection* in Japan, up to *specifications* in Germany, *luxury* in France, *working better than last time* in the United States, and *personal identification* in Australia and New Zealand” (Mathison, 2005: 350). Specifically, “qualities are physical properties, logical constructions of physical properties, or dispositions”; “qualities are powers (or dispositions) of objects

to produce sensory experiences (sense data on some theories) in human"; and "primary qualities are properties common to and inseparable from all matters; secondary qualities are not really qualities in objects, but only powers of objects to produce sensory effects in us by means of their primary qualities" (Audi, 1999: 762-763). In this sense, quality is an absolute term based on the assumption of distinctiveness. Otherwise, it is referred to a relative concept depended on the evaluators in more general circumstances. However, there is no access to define quality theoretically as a unitary concept (Ball, 1985; Green, 1994).

Although there is little definition of quality itself, the concept is devoted considerable attention to quality management with orientation towards the manufacturing domain. Gavin has identified five major approaches to the definition of quality: "(1) the transcendent approach of philosophy; (2) the product-based approach of economics; (3) the user-based approach of economics, marketing, and operations management; and (4) the manufacturing-based and (5) value-based approaches of operations management" (Gavin, 1984). Gavin has listed the examples of these definitions as follows (1984). Firstly, the transcendent definition of quality is "… a condition of excellence implying fine quality as distinct from poor quality … Quality is achieving or reaching for the highest standard as against being satisfied with the sloppy or fraudulent" (Tuchman, 1980). Secondly, the product-based definition of quality "refers to the amounts of the unpriced attributes contained in each unit of the priced attribute" (Leffler, 1982). Thirdly, the user-based definition is "the degree to which a specific product satisfies the wants of a specific consumer" (Gilmore, 1974). "Quality is fitness for use." (Juran, 1974: 2) Fourthly, manufacturing-based definition of quality is "the degree to which a specific product conforms to a design or a specification" (Gilmore, 1974). Fifthly, the value-based definition of quality is "the degree of excellence at an acceptable price and the control of variability at an acceptable cost" (Broh, 1982: 3). Additionally, Garvin has identified eight dimensions as the framework for thinking about the basic elements of product quality:

"performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality" (1984).

Within a historical context, quality has become the most essential issue as Juran said, "Just as the twentieth century was the century of productivity, the twenty-first century will be the quality century" (Juran, 1995). In the late 1980s, the Total Quality Management (TQM) has attracted the global attention. In Europe, the European Foundation for Quality Management (EFQM) was founded to respond to Deming's work and the TQM in 1988 (Deming, 1982). The TQM aims to reduce all the costs of poor quality by pursuing lower costs, higher revenues, delighted customers, and empowered employees (Godfrey, 1998: 14.1-14.35). And there are three fundamental concepts which are "customer focus", "continuous improvement", and "value of every associate", three strong forces which are "alignment", "linkage (process management or systems thinking)", and "replication", and three critical processes for quality management which are "quality planning", "quality control", and "quality improvement" (Godfrey, 1998: 14.1-14.35). Afterwards, there are some extensions of TQM such as Re-engineering, Lean manufacturing, Six Sigma and so on. Additionally, SERVQUAL has been developed as the framework of quality management in the service sector since 1985. It highlights the main components of high quality service and originally identified ten elements of service quality and later collapsed into five factors – reliability, assurance, tangibles, empathy and responsiveness – that create the acronym RATER (Nyeck, et al., 2002).

However, the International Organization for Standardization (ISO) 9000 has taken the place of the attraction in quality management in a worldwide range since the 1990s. According to ISO standards series, quality is the degree fulfilling the requirements providing a range of characteristics (ISO, 2005). Specific ISO 9000 family standards are founded on the concept of the assurance of consistent product quality to provide quality management guidance, or quality assurance requirements, or supporting technology for an organization's management system (Marquardt, et al.,

1991). There is simultaneous application of two kinds of standards, including the product standards (technical specifications) and quality system (management system) standards (Marquardt, 1998). The guideline standard ISO 9000-1: 1994 explains the four facets of product quality: “quality due to definition of needs for the product”; “quality due to product design”; “quality due to conformance to product design”, and “quality due to product support throughout the product life cycle” (Marquardt, 1998).

At the end of twentieth Century, there has been a contemporary shift in management perspective from a paradigm of “control” to a paradigm of “values” (Pruzan, 1998). And there has been also shift from the “logic of goods” to the “logic of service” (Vargo & Lusch, 2004: 3). The model of values-based service quality for sustainable service business has been formulated with the basis of the dimensions of value-based service quality (“technical”, “functional”, “experiential”, and “HRM and corporate climate”) and the dimensions of sustainability (a “ethical”, “social”, “nature-philosophic”, “economic”, and “legal” dimension) (Enquist & Edvardsson & Sebhatu, 2007). Especially to an organization, all activities have to proof their ability to add value (Giebel, 2009). And the multi-perspective “values-based” management approach is required to consist of five fields: “shareholder value”, “market value”, “customer value”, “people value”, and “future value” (Töpfer, 2000). It is also recognized that “adding value for customers” is the first criterion to identify the quality currently by EFQM (EFQM, 2014).

Therefore, three categories are essential to be verified in defining quality. The conceptualizations of quality differ from various stakeholders (“who”) in appraise diverse objectives (“what”) according to distinct criteria (“how”). According to these criteria, the quality serves for the requirement of producers or service providers to consumers. The conception of quality tends to have diverse benchmark: product-based view, cost-based view, customer-based view, and value-added view. In these four periods of development, the idea of quality has been taken from concentration on quality control, to quality assurance, to quality management, and to

quality improvement. And the three criteria differ in these four periods. The researcher follows the transformative value in defining quality. Through the transformation, the evaluators have become broadly inclusive of the producers, customers, and other participants and stakeholders; the standards have become diversely involved the whole process of production and service; the values have been enriched from conformance to satisfaction and changes brought to customers.

3.1 Quality of the doctoral education

Influenced by the theory of quality management, the notions of quality in education are parallel with the trail. A review of existing approaches has been presented the conceptualization of education quality within the Education for All (EFA) movement. “When thinking about the quality of education it is useful to distinguish between educational outcomes and the processes leading to them. People who seek particular, defined outcomes may rate quality in those terms, ranking educational institutions according to the extent to which their graduates meet ‘absolute’ criteria concerning, for example, academic achievement, sporting prowess, musical success, or pupil behaviour and values. The standard of comparison would be in some sense fixed, and separate from the values, wishes and opinions of the learners themselves. By contract, relativist approaches emphasize that the perceptions, experiences and needs of those involved in the learning experience mainly determine its quality.” (UNESCO, 2004: 28)

As the broad intension of educational quality, Adams has identified about fifty different definitions of the term in which six common views are generalized that quality has been defined as reputation, resources and inputs, process, content, outputs and outcomes, and “value added” (1993). Specifically, the “value-added” definition of quality has been explained by two typical conceptions. Firstly, “the quality of an educational programme can be adequately assessed only if one can determine the extent to which the programme has directly contributed to the desired outcomes” (Bergquist & Armstrong, 1986). Secondly, “the quality of a school or an education

programme is defined in terms of the intrinsic nature and purpose of education to enlarge human capacities" (Commonwealth Secretariat, 1991). Besides, Adams also points out that these views are combined frequently in the definition of educational quality (1993). However, "focusing on absolute output characteristics of education programmes does not preclude a 'value-added' approach that takes differences in ability into account" (UNESCO, 2004: 28). The notion that acquisition of knowledge and skills requires the active participation of individual learners is a central link between humanism and constructivist learning theory (Dewey, 1916). Pupils are believed to be creator of knowledge in the classroom who is transforming their identities through "a process of learning by performing new roles" (Fenwick, 2001: 3). And the social constructivism emphasizes learning as a process of social practice rather than the result of individual intervention (UNESCO, 2004: 29). Therefore, two key elements characterized by UNESCO as the major explicit objective of all education systems: one of them is the cognitive development while the other is the role of education in encouraging learners' creative and emotional development, in supporting objectives of peace, citizenship and security, in promoting equality and in passing global and local cultural values down to future generations (2004: 29).

"Unlike many other services where the provider is doing something for the consumer, in the education of students the provider is doing something to the consumer. (Harvey & Green, 1993)" Regarding the quality in higher education, different approaches have been identified as "exceptional", "perfection" or "insistency", "fitness for purpose", "value for money" and "transformation" (Harvey & Green, 1993). Becket and Brookes have summarized the models of quality management in higher education formulated by the researchers from all over the world (2008). Harvey and Knight advise that quality as transformative view can incorporate the other dimensions to some extent, and the first four dimensions are not necessarily end products themselves (1996). The transformative view of quality leads to two notions: "enhancing the consumer" and "empowering the consumer" (Harvey

& Green, 1993). In the sense of enhancement, the quality is seen in terms of the extent to which the educational experience enhances the knowledge, ability, and skills of students (Astin, 1990: 19-33). In the sense of empowerment, the quality is seen in terms of the extent to which the education system transforms the conceptual ability and self-awareness of the student (Harvey & Burrows, 1992). As a conclusion, the notion of quality is to enhance the cognitive development and empower the emotional development of students based on the transformative view in this thesis.

The issue of quality in doctoral education has been addressed the concerns beyond of education institutions for the widening access, tightening budget and increased levels of connection with the society in recent decades. The traditional view in education is that universities embody quality and thus do not need to demonstrate it (Church, 1988: 27-43). As the primary purpose of the doctoral education, the Ph.D. students are supposed to acquire the knowledge, skill and attitude necessary for their further (academic) professional path in respective occupations. As the construction in defining the quality, it is essential to make clear that the conceptions of quality have to be achieved from the preferences of stakeholders in evaluation the doctoral education.

There are the specific researches on the quality issue of doctoral education. A framework with seven aspects has been proposed to improve doctoral education (Lipschutz, 1993: 69-80). Approaches that attempt to identify a number of dimensions of value added provide clearer ideas about what has been transformed but these still rely heavily on output assessment (Nichols, 1986; Otter, 1992). As one of the best predictors, the participation in scholarly activities at the university was considered to be the academic productivity while still in graduate school (Cresswell, 1985: 40). The standards and guidelines for quality assurance and the Salzburg Principles for doctoral education in the European Higher Education Area were adopted in the Bergen Conference of European Ministers responsible for Higher Education in 2005 (“Standards and guidelines”, 2005). An array of examples of the new programme and student level assessment practices was presented to provide evidence of what and how

Ph.D. students learn within the context of an educational programme (Maki & Borkowski, 2006). The intricate partnership and the role of each sector have been analyzed in a doctoral programme (Nyquist & Woodford, 2000). Compared with the perception, training has been confirmed not what doctoral students want or either employers need (Golde & Dore, 2001). The idea of autonomy and the subject of knowledge have been examined in doctoral education (Johanson, 2005). Accountability of Ph.D. students has been conducted by undertaking work as college and university instructors in training doctoral students (Brooks & Heiland, 2007). Independence of Ph.D. students was concentrated in preparing to be an independent scholar (Gardner, 2009). Aimed to test and compare the relative efficacy of three measuring instruments of service quality, higher education performance (HEdPERF), service performance (SERVPERF), and the moderating scale of HEdPERF-SERVPERF, within a higher education setting (Abdullah, 2006). A descriptive and survey-based cross-sectional study was carried out to evaluate and assess the quality level of doctoral education services by using SERVQUAL Model in 2011 (Javadi & Samangooe & Tanhaei, 2011).

In America, federal legislation “No Child Left Behind Act of 2001” and the Education Sciences Reform Act of 2002 encouraged to prepare doctoral students to be a scientifically based research in education (Eisenhart & DeHaan, 2005). There has been a continuing interest in the preparing process of the socialization to the academic culture (Antony, 2002). In the cognitive dimension, the novice professional needs extensive knowledge as a basis for professional practice and authority (Freidson, 1986). In the research on the graduate students’ socialization, Weidman, et al. developed a framework with the core of institutional environment of the higher education institutions in which the professional preparation occurs (2001: 55-83). Engaging faculty through the interaction among students as well as the interaction between students and faculty members is distinguished to be the valuable opportunity for their socialization in the doctoral study programme (Gardner, 2010). Based on her

longitudinal interviews with the graduates in various disciplines including humanities, sciences, social sciences and professional areas at three universities, Austin (2002) founds the discrepancies between the preparation of graduates and the realities of both academic work and the academic labor market. Regarding the discipline of education, the journal clubs and list-based examinations are introduced to be adapted to help socialize students into the norms and values of the profession (Golde, 2007). The proper preparation in research methodologies of doctoral students in education has been widely discussed in designing the curriculum (Page, 2001). It has been proposed that the doctoral students' experience should be involved as the evidence in shifting the study programme in the following research (Leonard, et al., 2006: 42). As a conclusion, the study experience in doctoral study programme is a process of socialization to the academic culture for future researchers.

Back to the beginning of the discussion of quality, it is a stakeholder-relative term. Owlia and Aspinwall argue that different stakeholders are likely to value the importance of these different dimensions of quality according to their particular motivations and interest and interpret them differently (1996). "Quality is often defined, synonymously with effectiveness, as the degree to which objectives are met or desired levels of accomplishment achieved" (Adams, 1993). "A central purpose of postbaccalaureate education, particularly at the doctoral level, is the socialization of individuals into the cognitive and affective dimensions of social roles related to the practice of learned occupations. (Weidman & Stein, 2003)" Graduate education is considered as the period of "anticipatory socialization" (Van Maanen, 1983b). The socialization that occurs during graduate education contributes to how faculty members understand their work and assume their professional roles (Austin & McDaniels, 2006). The Ph.D. students are experiencing several socialization processes simultaneously: socialization to the role of graduate student, socialization to the academic life and the academic profession, and socialization to a specific discipline or field (Staton & Darling, 1989). Through formal and informal

opportunities, the socialization occurs as doctoral students learn knowledge and skills required for work in the field, interact with faculty and student peers, and integrate into the activities of their fields (Weidman & Twale & Stein, 2001). However, the study experience is not planed in a way that specifically prepares for professional development of identity. On the one hand, doctoral education is characterized by a lack of systematically and developmentally organized preparation experiences (Austin & McDaniels, 2006). On the other hand, the Ph.D. students fail to receive feedback to clearly explain their performance (Lovitts, 2004). Therefore, the previous research findings have raised the essential concern about the preparation process and efficiency of doctoral study on the path to the professoriat for Ph.D. students. However, qualitative, ethnographic studies, especially ongoing and longitudinal investigations, have been overlooked in the field of graduate education research (Malaney, 1988). Future research on graduate education would benefit from the inclusion of a variety of voices and perspectives both inside and outside of higher education (Wulff & Austin, 2004). This thesis presents the role of doctoral study on Ph.D. graduates' career path of academics with specific attention on the subject of education.

In summary, the transformative view is the basis of this thesis in defining the quality of doctoral study programme. The doctoral study programme is believed as a process of socialization to academic culture for future researchers cognitively and affectively. Whether the Ph.D. students are prepared well in the doctoral study programme or not is what quality counts in this thesis. Specifically on the discipline of education, the scientifically based researchers are the objective of cultivation. Whether the reality meets with the ideal of doctoral study programme in education or not, whether the Ph.D. graduates are prepared well for their academic career path or not, are the two basic empirical questions in evaluation the quality of doctoral study programme in education. It is worth mentioning again that, the core of this thesis is to formulate the model of quality theoretically of doctoral study programme in education.

3.2 Evaluation of the quality of doctoral education

The term of evaluation has various interpretations distinguished from assessment and assurance of quality. The evaluation and assessment share considerable conceptual ground and interconnected histories (Sadler, 2012). Evaluation is a neutral term which covers appraisals of student learning, curriculum reforms and educational programmes. The verb “to evaluate” often collocate with words such as “effectiveness”, “institutions”, “projects”, “programmes”, “materials” while “to assess” often collocate with words such as “competence”, “skills”, “abilities”, “performance”, “aptitude” (Muresan, et al., 2007: 56). Assessment is more connected with the institutional characteristics and functions including the teaching, research, facilities, services, student support, organizational systems and student learning. However, the terminological diversion differs in different time and countries. Otherwise, the quality assurance is a recent concept which is related with the integrity of teaching process in higher education.

The developmental history of educational evaluation psychology has experienced four periods: the psychological testing period from the middle of the nineteenth century to 1930s, the objective-centered period between 1930s and 1950s, the criteria construction period from 1960s, and the individual assessment period after 1970s. However, evaluation is assumed to be a new discipline which has just been established as a study field in recent two decades although it is an old practice (Scriven, 1996: 395; Conner & Altman & Jackson, 1984). Evaluation strategies differ in the application for the uses of them in various conditions (Slavin, 2006). Formative evaluations help with discovering the strengths and weakness in learning to make mid-course corrections in pace or content of instruction. Summative evaluations always are operated at the end of instructional units to know how well the objects do. Meanwhile, according to the criteria of evaluation, there are also two approaches. One is called norm-referenced evaluations which assess the relative position of the object compared with the average statement in the whole. The other is called

criterion-referenced evaluations which assess the absolute standards of the objects in attaining the expected objectives. Meanwhile, Patton's pioneer work on utilization-focused evaluation (UFE) changed the orientation of evaluation on the efficiency side (2008). Gradually, the evaluation plans become more focused on striving to know more about what is actually going on in the programme, whether a particular programme is meeting its goals, or about the impact of a programme on customers or clients.

As the classical definition of evaluation, Tyler perceives it as "the process of determining to what extent the educational objectives are actually being realized" (1950: 69). And the traditional conception has been interpreted by Cronbach as "the assessment of merit or worth" (1963), by Stufflebeam as "an activity comprised of both description and judgment" (1974), by Guba and Lincoln as "the systematic investigation of the worth or merit of some object" (1981), and by Rossi, Lipsey and Freeman as "the use of social science research procedures to systematically investigate the effectiveness of social intervention programs" (2004). In chronological order, seven periods of programme evaluation are identified as the "age of reform" during the period prior to 1900, the "age of efficiency" from 1900 to 1930, the "Tylerian Age" from 1930 to 1945, the "age of innocence" from 1946 to about 1957, the "age of development" from 1958 to 1972, the "age of professionalization" from 1973 to 1983, and the "age of expansion and integration" from 1983 to 2000 (Madaus & Stufflembeam & Kellaghan, 2000). The trend of study has been generalized to be the transition from the traditional summative evaluation approaches toward formative evaluation (Marshall, et al., 2007). The processes, procedures and outcomes are called for concentration in the following study by Hogan (2007). The programme theory has been implicated in evaluation practices as "the set of cause-and-effect relationships that provide the rationale for the nature of the treatment" (Scheirer, 1987: 60). Programme evaluation is focused on the "construction of a plausible and sensible model on how a programme is supposed to work" (Bickman, 1987: 5). And it is

utilized by organizations to periodically assess their processes, procedures, and outcomes (Hogan, 2007: 1-14). The notion has been applied as guidance for the thesis.

In the middle of 1980s, the stakeholder approach has been sought to broaden the concept of strategic management beyond the traditional economic roots by defining stakeholders as “any group or individual who is affected by or can affect the achievement of an organization’s objectives” (Freeman, 1984: 5). The involvement of stakeholders in the evaluation process strives to make evaluation more responsible to programme. Stakeholders are identified as “people who have a stake or a vested interest in the program, policy, or product being evaluated and therefore also have a stake in the evaluation” (Greene, 2005: 398). The implementation of the programme is tested by the degree to which services were delivered to the target population (Conrad & Miller, 1987: 19-42). Diverse stakeholder interests are represented on the basis of their relative stake in the outcome of the evaluation process (Guba & Lincoln, 1989). And diversity in programme experience and perspective is required in order to build a holistic understanding of programme meaning and content (Mathie & Greene, 1997). As the members of the community who are “beneficiaries” (Guba & Lincoln, 1989), the participants’ perceptions are significantly emphasized in the evaluation. Programme evaluation consists of those activities “undertaken to judge the worth or utility of a program (or alternative programs) in improving some specified aspect of an educational system” and five categories are clustered by Worthen into “performance-objectives congruence approaches”, “decision-management approaches”, “judgment-oriented approaches”, “adversarial approaches”, and “pluralist-intuitionist approaches” (1990: 42-47). Through the transformation of evaluation value from the belief that a perfect program will run itself perfectly without hearing from employees, customers or clients again to the thought of success program should involves the remaining open to continuing feedback and adjusting the program accordingly.

As Guba and Lincoln convey the traditional evaluation, there are three generations of evaluation respectively with measurement (e.g., IQ testing), description (e.g. formative of programs), and judgment (e.g., of merit) (1989). The fourth generation evaluation is extended to evaluate the programme to facilitate interpretive dialogue among variety of stakeholders based on the post-modernist epistemology of constructivism instead of measuring a program's goal attainment in scientific and quantitative way (Fishman, 1992). The underlying methods for constructivist evaluation approach are named as "human inquiry" by British scholars, "action research" by American scholars, "developmental evaluation" by the third world or developmental evaluators, and "collaborative inquiry" as a common generic term (Guba & Lincoln, 1991). Lake and Tessmer generalize four constructivist assumptions that impact formative evaluation as "knowledge is constructed, not discovered, by the learner"; "learning is a social process of negotiated meanings"; "the role of a teacher (or other form of instruction) is to scaffold student's learning"; and "learners should participate in establishing goals, tasks and methods of instruction" (1997).

The constructivist approach is believed to be heavily philosophical paradigm driven (Stufflebeam & Shinkfield, 2007: 216). Constructivist evaluation is defined as "form of evaluation based on the propositions (basic assumptions) undergirding the constructivist paradigm", "which are commonly termed the ontological (relativism), epistemological (transactional subjectivism) and methodological (hermeneutic-dialecticism)" (Guba & Lincoln, 2001). Two phases of constructivist evaluation has been represented to describe "what's going on here" as the "discovery" phase and to "fit, work, demonstrate relevance, and exhibit modifiability" as the "assimilation" phase (Guba & Lincoln, 2001). The approach requires mixed methods so that the evaluator balances the use of quantitative and qualitative methods in guiding the program evaluation (Stufflebeam & Shinkfield, 2007: 216-218). The methods of program evaluation has transformed from the emphasis of scientific accuracy, reliability and validity to utility, relevance and practicality. Besides, the

orientation to be completely conversant with concepts such as validity and reliability are transforming into the consideration what information they will require in order to make current decisions about program issues or needs. According to the key objective of this thesis, the evaluation of doctoral study programme is expected to follow the epistemology of constructivism evaluation with the orientation to listen to the voice of stakeholders involved in the programme.

The decision-driven evaluation is characterized by the external perspective focusing on the input of the doctoral programmes in personnel, resources, and design of study activities. However, “Accreditation commission applies one metric to all institutions and study programmes rather than bringing a perspective to bear on the relationship between means and ends, of fitness for purposes.”(Šebková, 2006, p.4) Recently, the fitness-for-purpose approach has been more and more attached the importance to be used in quality assessment (“External quality assurance”, 2011). Nevertheless, it is clear that these methods measure the quantitate character other than consider the qualitative preparation of the doctoral study programme. Especially the individual sectors should be taken into account of evaluating the quality from the perspective of significant stakeholders. The internal assessment is indeed needed as a complementary proportion of the quality assurance system. Therefore, this thesis devotes to take new insights into the nature of doctoral study in education.

Based on the previous researches on doctoral study and the theory of quality evaluation, the evaluation module is framed in Figure 3-1 to show the research questions of this thesis. There are three main objectives to meet through this thesis. First of all, the needs of stakeholders are inquired to formulate the criteria of evaluation. Secondly, the study programme is assessed to verify the process to the extent of implementation actually being realized. Thirdly, the impact on Ph.D. graduates is uncovered to track the outcome of doctoral study programme in education. According to the objectives, three domains are generalized as “needs”, “implementation”, and “impact”. And three research questions are respectively

proposed under the domains.

I. What is the ideal of doctoral study programme in education on the perspective of current Ph.D. students?

II. How does the doctoral study programme in education work in reality on the perspective of current Ph.D. students?

III. What is the effect of the doctoral study programme in education on Ph.D. graduates?

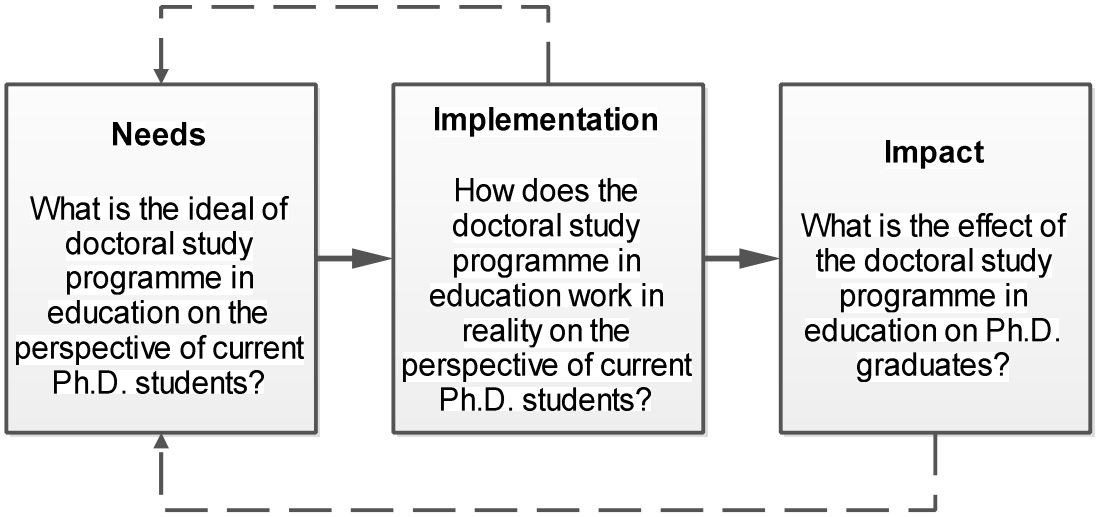


Fig.3-1. Framework of evaluation the doctoral study programme in education

Specifically on the evaluation process, the Ph.D. students are concerned as the most significant stakeholder of the doctoral study programme in education. To determine the criteria, the perception of current students is considered essentially. The process evaluation is orientated to cover the complete procedure from the enrollment to graduation, from the learning subjects to assessment mechanism, and from the examination to defence. Meanwhile, the impact evaluation investigates the transformative outcome brought from the study experience in the doctoral study programme in education. Additionally, the barrier and recommendation is proposed to reflect the ideal of doctoral study and strength the quality of study programme at the end of the dissertation.

4. METHODOLOGY OF EMPIRICAL RESEARCH

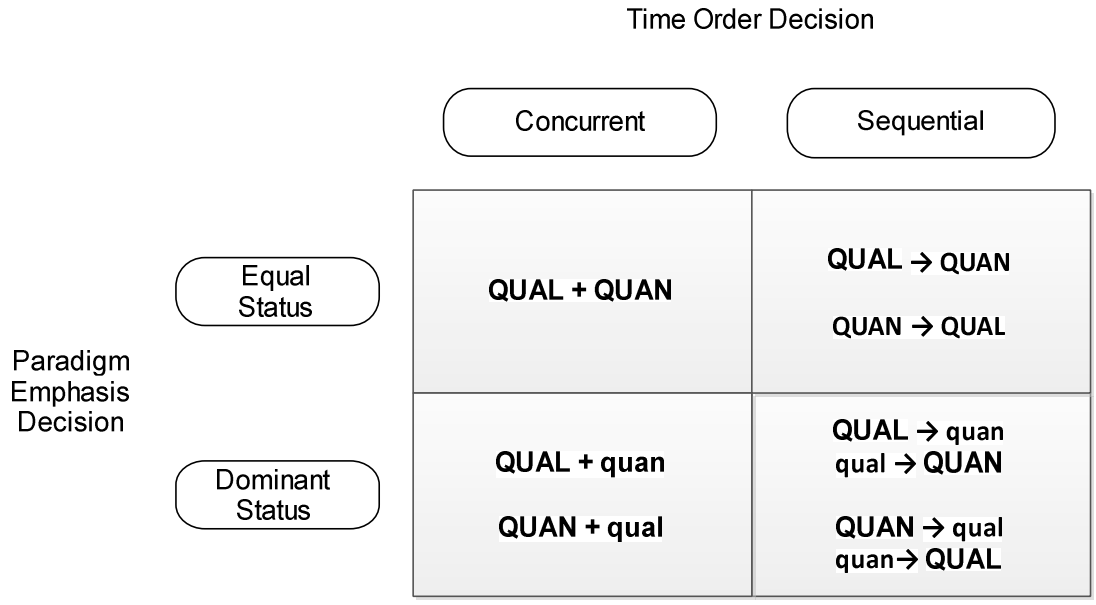
To meet with the aims of this doctoral thesis, a model of quality will be designed to make a way of evaluation the doctoral study programme in education. A survey will be proceeded to investigate the perception of stakeholders on the ideal and reality of doctoral study of education. To sum up, the strategies will be suggested to fix the gap of ideal and reality according to the standpoint and experience of stakeholders. Thus, the mixed methodology has been applied in this research with the purpose to acquire the perception of stakeholders on the doctoral study programme in education. As the limit of research duration and available resources, the cross-sectional design is assumed in place of longitudinal design. However, the study approach in particular is designed with concern of involving the various perspectives from different generations at various age and grade levels as well as the longitudinal experience of each specific participant, for example, the sample of subjects and the usage of life stories in the qualitative approach. These strategies are used to make inferences about the nature of the target population.

There has been intense dispute of the qualitative and quantitative methodology in evaluation. However, the legitimacy of multiple methodological traditions turns to the use of multiple methods and to mix methodological thinking gradually. “The most effective evaluation research is one that combines qualitative and quantitative components. Making statistical comparisons is useful, and so is gaining an in-depth understanding of the processes producing the observed results or preventing the expected results from appearing” (Babbie, 2007: 376-377). The mixed methodology is used in this thesis according to respective characters of the participants. As the most affected people by the doctoral study programme, the qualitative method is used in the investigation of the perspective from the representative graduates with a Ph.D. title. The ideal and reality of the doctoral study program of education are surveyed through the quantitative research to formulate the foundation of analyzing the distance between the ideal and reality of the doctoral program of education on the perspective

of current Ph.D. students.

The mixed methods research is considered as the commutative complement of traditional qualitative and quantitative research. As the third research paradigm, mixed methods could also help bridge the schism between quantitative and qualitative research (Onwuegbuzie & Leech, 2005). As Johnson and Onwuegbuzie's definition, mixed methods research is "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (2004). The mixed methods would answer a broader and more complete range of researches. In this thesis, the missed methods is chosen to provide a better understanding of the stakeholders' perception by assessing the outcomes as well as the process and develop a complex picture of the doctoral study programme in education.

To engage in the mixed research, the mixed-model is followed to determine the phase of qualitative and quantitative research and the order of the procedure. Traditionally, mixed methods are supposed to integrate multiple databases to understand a phenomenon and research problem (Rossman & Wilson, 1985). The data collected from either of quantitative approach or qualitative approach will enhance, elaborate or complement the data from the other approach (Greene & Caracelli & Graham, 1989). The relationship between the two approaches in order is simultaneous/concurrent ("QUAL + QUAL") or sequential (either "QUAL→QUAN" or "QUAN→QUAL") (Morse & Niehaus, 2009). Moreover, the priority or weight is also differentially emphasized on the qualitative or quantitative approaches. In figure 4-1, the matrix shows the mixed-method designs in four groups according to the relationship between qualitative and quantitative approaches in a study by Johnson and Onwuegbuzie (2004).



Note. “qual” stands for qualitative, “quan” stands for quantitative, “+” stands for concurrent, “→” stands for sequential, capital letters denote high priority or weight, and lower case letters denote lower priority or weight.

Fig.4-1. Mixed-method design matrix with mixed-method research designs shown in the four cells.

Source: (Johnson & Onwuegbuzie, 2004)

However, the debate has been extended to the specific measurement tools in the survey procedure including data collection, analysis and interpretation. Six mixed methods designs are categorized in educational researches which are the convergent parallel design, explanatory sequential design, exploratory sequential design, embedded design, transformative design, and multiphase design (Creswell & Plano Clark, 2011). The first four designs are the basic ones in use today and the last two are complex ones that are becoming increasingly popular (Creswell, 2012: 540-541). To fit with the needs of this thesis, the convergent parallel design is applied as the model of mixed methods as illustrated in figure 4-2.

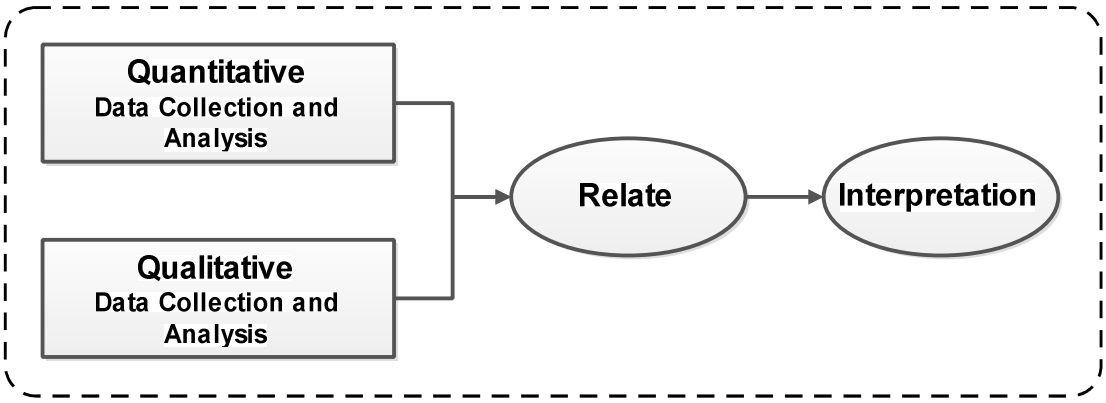


Fig.4-2. Mixed-method design

Source: (Creswell, 2012: 541)

The researcher gathers the quantitative and qualitative data at the same time and analyzes the database separately, and relates the results of both sides to formulate the model of doctoral study programme in education as the interpretation the research object.

4.1 Quantitative Approach

As one essential part of mixed methodology, the quantitative methodology is used to uncover the perspective of stakeholders on the ideal and reality of doctoral study programme by questionnaires. There are plenty of strengths to validate the constructed theories about how the status of doctoral study programme occur, to testing the following hypotheses identified concretely, to eliminate the cause-and-effect relationships between two variables, and relatively less time consuming.

Hypothesis

In correlational studies, two variables are collected on the same respondents. In this thesis, the ideal and reality of doctoral study programme in education are the two variables. And the relationship is determined by the perspective of stakeholders specifically referred to the current Ph.D. students in the quantitative study. To evaluate

the quality of the doctoral study programme in education, the research question relies on how the programme fulfills the ideal in reality on the perspective of current Ph.D. students.

Research hypothesis: The reality is fulfilled the ideal of doctoral study programme.

Null hypothesis: There is no relationship between the ideal and reality of doctoral study programme.

To evaluate the doctoral study programme, the samples are assumed to be selected in both The Czech Republic and China. As the unique character of each study programme in diverse doctoral education institutions, one study programme is assigned by purpose to be the sample with the similar level of academic reputation in their home countries. The questionnaire aims to develop the ideal and reality of the quality of doctoral study programme in education on the perspective of current Ph.D. students. The perspectives on ideal and reality of the quality are evaluated by concluded criterion. Their responses are remained confidential and anonymous.

And the questionnaire is adopted by several questionnaires applied in the previous researches in the similar area such as the evaluation on the higher education programme and so on which would be described in detail in the subchapter of “data collection”. The internet-based survey is chosen to be used as the tool of collecting the answers from participants. And the pilot study has been addressed with priority to improve the instrument of survey. Afterward, the statistical tests are referred to analyze the data collected by the questionnaire. The framework of the quantitative approach in this thesis is illustrated in the figure 4-3 including both the pilot study and the main study phase. And the data is analyzed by SPSS Statistics V19.0 (Abbreviated as SPSS in the following text) afterwards.

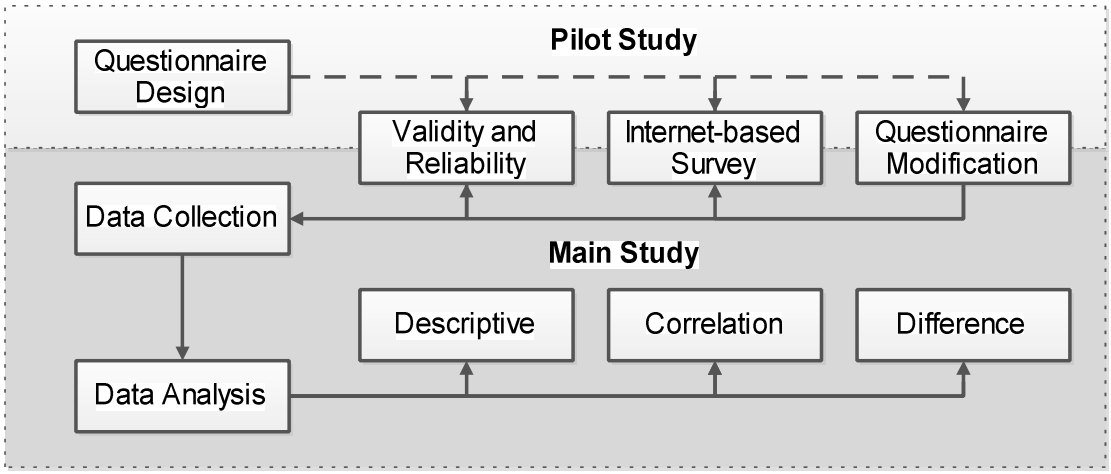


Fig.4-3. Framework of the quantitative study

4.1.1 Questionnaire design

Firstly, the questionnaire is designed with the reference of the framework of questionnaire used in a project on quality in higher education in Great Britain in 1992 (Harvey ed., 1993: 209-212.). The framework of the questions is imitated to design the new questionnaire for this thesis. However, it is a combined questionnaire for both students and teachers at university which are not exactly the same with the subjective participants in this thesis after comparison. Moreover, the items are needed to be more related to doctoral level study. Thus the questionnaire has been created by the researcher with consultation of the experts in this area and modified by the result of pilot study. The questions are guided by the key issues concerning the doctoral study of education which also lead to the specific design in the data collection effort. Five dimensions are concluded as the “induction”, “organization”, “supervision”, “assessment” and “output”. There are six items under “induction”, seven items under “organization”, nine items under “supervision”, eight items under “assessment”, and eight items under “output” in the primary questionnaire. In conclusion, there are forty two items in the original questionnaire. However, some of the items are deleted after the pilot study (see table 4-2 and 4-4) and then applied as the formal questionnaire (see table 4-6 and 4-8) in main study shown in the following analysis. The specific questions are concluded from the theoretical study, discussed with the representative

of stakeholders, and consulted from the experts of educational evaluation and the academic committees in the doctoral study programme in education. Besides, the opinion of current Ph.D. students has also been considered in developing some of the questions. Through the meeting with various stakeholders, the suggestions of them are involved to generate numerous questions. And then these questions are grouped into diverse themes reflected the segments of whole programme and identified further which questions within each dimensions. Finally, the most important questions are selected to be included in the questionnaire to obtain the perspective of stakeholders. Then the modification continues to be made after taking the comment of the key stakeholders and experts before the pilot survey.

Secondly, the side-by-side matrix is used in judging the quality of doctoral study programme in education. The importance/satisfaction type of questions are given to indicate how important they believe each of the criteria in judging the quality of doctoral study programme in education for the left tandem with the theme of “ideal” and to indicate how satisfied they are with each of the criteria based on your experience of studying in the doctoral study programme in education for the right tandem with the theme of “reality”. Anderson’s definition of an attitude is “a moderate to intense emotion that prepares or predisposes an individual to respond consistently in a favourable or unfavourable manner when confronted with a particular object” (Anderson, 1985). Since the Likert Scale (Likert, 1932) is the most frequently used in educational researches, the respondent is asked to rank the each items in rating scales separately including five categories: “not at all important”, “unimportant”, “neither important nor unimportant”, “important”, “very important” for the variable of “ideal” of the doctoral study programme in education; “not at all fulfilled”, “unfulfilled”, “neither fulfilled nor unfulfilled”, “fulfilled” , “very fulfilled” for the variable of “reality” of the doctoral study programme in education. Thus, each of the criteria is identified by placing a mark in the appropriate box on a scale ranging from 1 to 5 on behalf of the five levels responsibly.

Thirdly, the internet-based surveys are assigned to be the instrument of quantitative study. It is a combination of emails and web-based surveys (Cohen & Manion & Morrison, 2007: 226). The “emails-plus-attachments” of the questionnaire has been sent to the participants. The questionnaire has been created on the webpage. The emails are directed to potential respondents to a particular website at which the survey questionnaire located in HTML form. The advantages are also brought from two sides. On the one hand, the participants are easier to be persuaded to join the survey by clicking the link in the invitation mail. On the other hand, the financial and time cost is reduced rapidly by the feasible instrument through internet. The radio buttons are presented to complete each of the items (Witte & Amoroso & Howard, 1999: 139). The current Ph.D. students of the doctoral study programme in education have been sent the link of online questionnaire for them.

Finally, “everything about questionnaire should be piloted; nothing should be exclude, not even the type face or the quality of the paper” (Oppenheim, 1992: 48). The questionnaire and the format are verified by the pilot study in the following subchapter.

4.1.2 Pilot study

The aim of the pilot study is to increase the validity, reliability and practicability and check the suitability, feasibility and format of the survey instrument principally (Cohen & Manion & Morrison, 2007: 341). In this thesis, the amount of current Ph.D. students is very limited in either the sample doctoral study programme in China or the Czech Republic. Thus, the pilot study is based on the survey of Ph.D. students’ perception in three different levels of doctoral study programme in China for practical availability. However, to assure the representativeness of samples under the limited condition, three doctoral study programmes are involved with serious consideration of the academic reputation, the regional distribution, and subjective contribution in the field of education. Firstly, According to the nearest evaluation by the commonly recognized organization in China, these three programmes in education are ranked as

respectively first, sixth, and the twenty-second. And there are 44.44% of the respondents in pilot study are studying in the doctoral programme in education which has been ranked as the first one, 44.44% of the respondents are studying in the third one, and 11.11% of the respondents are studying in the twenty-second one. Secondly, the study grade level has been considered as well shown by the demography characters of the respondents. There are 11.11% respondents studying in the first year of the doctoral study programme, 22.22% in the second year, 44.44% in the third year, and 11.11% in the fourth year. Additionally, the male students and female students are selected approximately in average. 44.44% of the respondents are female Ph.D. students while 55.55% are male.

Reliability and Validity Analysis

Reliability and validity is the two essential instruments for data collection. Reliability is taken to measure the internal consistency in various ways. The survey on variables of ideal and reality will be designated as questionnaire 1 and questionnaire 2 in pilot study. Three steps are involved in this partial analysis. The first step is internal consistency. The second step is factor analysis. The third step is renaming the dimensions.

Step 1: Internal Consistency

In this thesis, the alpha coefficient is referred to provide the coefficient of inter-item correlations.

Questionnaire 1: Ideal of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach’s Alpha equals to 0.960 (see table 4-1) which indicates a high level of internal consistency for our scale with the sample in pilot study. But it is much higher than 0.7. The items might be correlated strongly with others so that some of them needed to be removed.

Table 4-1. Reliability Statistics (Questionnaire 1)

Cronbach's Alpha	N of Items
.960	42

As it has been shown in table 4-2, the value of coefficient alpha (0.960) has increased after deleting four of the questions including no.18 (0.962), 19 (0.961), 20 (0.961), and 38 (0.962) Thus these four items are deleted after this step of analysis. There are still 38 items left.

Table 4-2. Item-Total Statistics (Questionnaire 1)

	Cronbach's Alpha if Item Deleted
Q18	.962
Q19	.961
Q20	.961
Q38	.962

Questionnaire 2: Reality of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach's Alpha equals to 0.947 (see table 4-3) which indicates a high level of internal consistency for our scale with the sample in pilot study. But it is much higher than 0.7. The items might be correlated strongly with others so that some of them needed to be removed.

Table 4-3. Reliability Statistics (Questionnaire 2)

Cronbach's Alpha	N of Items
.947	42

As it has been shown in table 4-4, the value of coefficient alpha (0.947) has increased after deleting five of the questions including no.03 (0.950), 05 (0.948), 18 (0.950), 19 (0.949), and 41 (0.948). Thus these four items are deleted after this step of

analysis. There are still 37 items left.

Table 4-4. Item-Total Statistics (Questionnaire 2)

	Cronbach's Alpha if Item Deleted
Q03	.950
Q05	.948
Q18	.950
Q19	.949
Q41	.948

The Cronbach's alpha has just simply provide an overview of the reliability coefficient of the questions, however, the internal relationship of in the five dimensions mentioned above is still in doubt. Therefore, the factor analysis is involved in the next step to shape the questions distributed in each dimension as well as the structure of the dimensions.

Step 2: Factor Analysis

The factor analysis is used to identify the clusters of key variables and to identify redundant items. The measurement has been attempted to test the validity.

Questionnaire 1: Ideal of the Doctoral Study Programme in Education

Through the KMO and Bartlett's Test, KMO = 0.646 > 0.6 which is neither good nor bad. The approx. Chi-Square = 50.808 with the significance = 0.000 < α = 0.01. Hence, the factor analysis is suitable to measure the sampling adequacy. There are two circle of factor analysis experienced to get the ideal result. The first circle of exploratory factor analysis has been attempted by extraction with the Eigenvalue below 1. However, the result is not suitable to be accepted because there are only two dimensions suggested to distribute and lots of the items are failed to be sorted. In the following step, the inspection of the scree plot and eigenvalues produces a departure from linearity coinciding with a 7-factor result shown in figure 4-4.

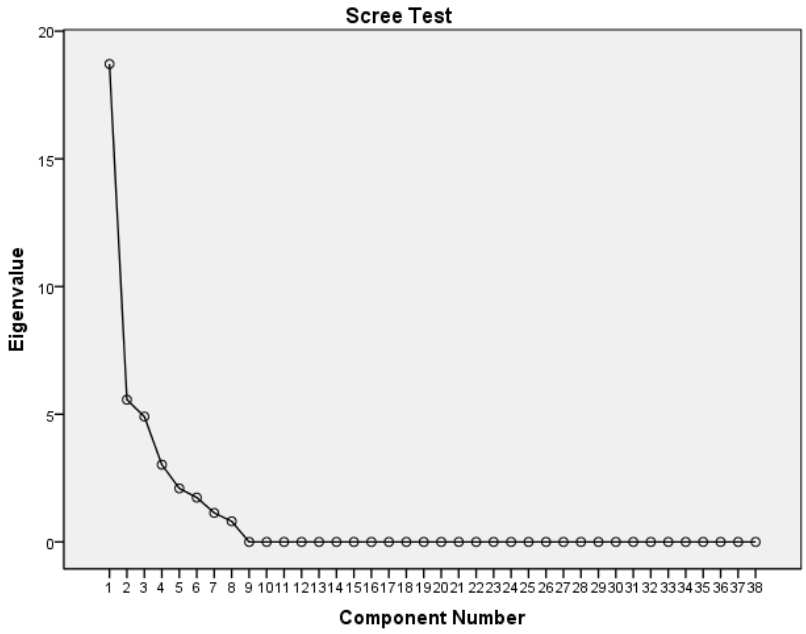


Fig.4-4. Scree Test Criterion (SPSS output) (Questionnaire 1)

Then the second circle of confirmatory factor analysis has been induced by extraction with specific number of factors (7) and the ideal result isn't exposed at all. And the confirmatory factor analysis has been induced by extraction with specific number of factors (6) and then (5). Finally, the available result appears when extracts with the factors (4) (table 4-5).

Table 4-5. Factor Score Covariance Matrix

Factor Score Covariance Matrix				
Factor	1	2	3	4
1	1.000	.254	.079	.309
2	.254	1.000	.102	.277
3	.079	.102	1.000	-.053
4	.309	.277	-.053	1.000

Extraction Method: Principal Component Analysis

Rotation Method: oblique rotation with Kaiser Normalization

Table 4-6. Structure Matrix (Questionnaire 1)

Structure Matrix					
No.	Items	Component			
		1	2	3	4
Q39	The Ph.D. graduates of education have competencies needed by the implementation of research in the field of education.	.948			
Q35	The assessment methods of Ph.D. students' study are used fairly.	.921			
Q13	The requirement of taking compulsory exams is demanded rather than imposed on Ph.D. students during the doctoral study.	.907			
Q34	The assessment methods of Ph.D. students' study are used objectively.	.875			
Q33	The Ph.D. students always know the reasons that lead to a particular result of assessment.	.840			
Q03	During the admission procedure, the applicants' teaching experience is taken into account.	.800			
Q30	The doctoral dissertation is equally the result of the work of PhD students and the supervisors.		.946		
Q28	The supervisors are always willing to help Ph.D. students even in matters not related to the study directly.		.943		
Q27	The supervisors support Ph.D. students actively to integrate into the research activities to discover their strengths and weaknesses.		.905		
Q17	It is integral to do research in an academic team composed of teachers and Ph.D. students during doctoral study.		.869		
Q24	The supervisors are experts of the field in which the Ph.D. students seek their doctoral dissertation.		.863		
Q05	During the admission procedure, the applicants' research plan of dissertation is focused on.		.816		
Q25	The supervisors continually comment on all publications of Ph.D. students.		.744		
Q12	To meet with the requirement of taking compulsory exams, the Ph.D. students gain sufficient knowledge of education as a scientific discipline.		.738		
Q36	The Ph.D. students believe that they will complete the study programme.			.852	
Q41	The Ph.D. graduates of education are identified with the role of researchers.			.661	
Q42	The doctoral degree of education guarantees a better social status.			.616	
Q08	The content of the study programme has a comprehensive structure and a distinct relationship among the elements.				.943
Q06	The whole study process is initially introduced to the new students properly at the beginning.				.924
Q07	The study programme has a target designed to be reached.				.920

Twenty items are left after the analysis on the component of items in the original five dimensions. Others are deleted because of their indeterminate component in specific dimension. The grouped items are illustrated in the table 4-6 under four dimensions. The next step is to rename the new dimensions by generalizing the objectives of questions.

Questionnaire 2: Reality of the Doctoral Study Programme in Education

Through the KMO and Bartlett's Test, KMO = 0.617 > 0.6 which is neither good nor bad with the significance of 0.000 < α = 0.01. Hence, the factor analysis is suitable to measure the sampling adequacy. There are two circle of factor analysis experienced to get the ideal result. The first circle of exploratory factor analysis has been attempted by extraction with the Eigenvalue below 1. However, the result is not suitable to be accepted because there are only two dimensions suggested to distribute and lots of the items are failed to be sorted. In the following step, the inspection of the scree plot and eigenvalues produces a departure from linearity coinciding with a 7-factor result shown in figure 4-5.

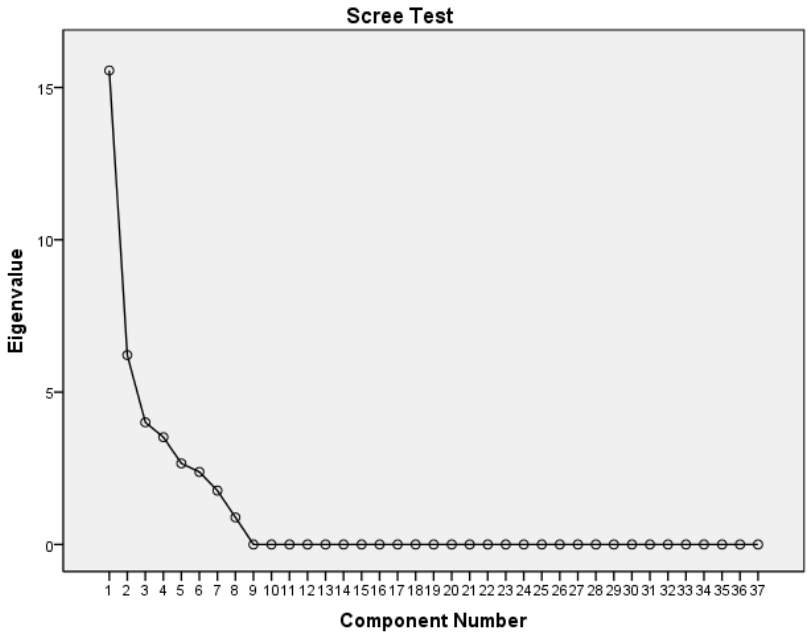


Fig.4-5. Scree Test Criterion (SPSS output) (Questionnaire 2)

Then the second circle of confirmatory factor analysis has been induced by extraction with specific number of factors (7) and the ideal result isn't exposed at all. And the confirmatory factor analysis has been induced by extraction with specific number of factors (6) and then (5). Finally, the available result appears when extracts with the factors (4) (table 4-7).

Table 4-7. Factor Score Covariance Matrix (Questionnaire 2)

Factor Score Covariance Matrix				
Factor	1	2	3	4
1	1.000	.227	.157	.169
2	.227	1.000	.265	.106
3	.157	.265	1.000	.108
4	.169	.106	.108	1.000

Extraction Method: Principal Component Analysis

Rotation Method: oblique rotation with Kaiser Normalization

Twenty one items are left after the analysis on the component of items in the original five dimensions. Others are deleted because of their indeterminate component in specific dimension. The grouped items are illustrated in the table 4-8 under four dimensions. The next step is to rename the new dimensions by generalizing the objectives of questions.

Table 4-8. Structure Matrix (Questionnaire 2)

No.	Items	Component			
		1	2	3	4
Q29	The supervisors and Ph.D. students are working together regularly in the programme.	.926			
Q27	The supervisors support Ph.D. students actively to integrate into the research activities to discover their strengths and weaknesses.	.910			
Q26	The supervisors support Ph.D. students actively rather than passively in knowledge acquisition.	.858			
Q30	The doctoral dissertation is equally the result of the work of PhD students and the supervisors.	.850			
Q24	The supervisors are experts of the field in which the Ph.D. students seek their doctoral dissertation.	.834			
Q12	To meet with the requirement of taking compulsory exams, the Ph.D. students gain sufficient knowledge of education as a scientific discipline.	.825			
Q25	The supervisors continually comment on all publications of Ph.D. students.	.722			
Q28	The supervisors are always willing to help Ph.D. students even in matters not related to the study directly.	.719			
Q20	It has improved the language ability of Ph.D. students in logical presentation by participating in academic conferences.	.660			
Q33	The Ph.D. students always know the reasons that lead to a particular result of assessment.		.905		
Q13	The requirement of taking compulsory exams is demanded rather than imposed on Ph.D. students during the doctoral study.		.899		
Q35	The assessment methods of Ph.D. students' study are used fairly.		.838		
Q37	The Ph.D. students believe that they will find a job suitable for Ph.D. graduates of Education after graduation.		.797		
Q02	During the admission procedure, the applicants' ability of communication in a foreign language is taken into account.		.562		
Q07	The study programme has a target designed to be reached.			.968	
Q31	The assessment system of study is designed to examine whether the objectives of programme have been met.			.815	
Q04	During the admission procedure, the applicants' mastery of research methodology is taken into account.			.771	
Q16	The teaching practice at the university is taken into account in the finalization of a doctoral degree programme.			.721	
Q06	The whole study process is initially introduced to the new students properly at the beginning.			.711	
Q40	The Ph.D. graduates of education have skills needed by teamwork.				.885
Q36	The Ph.D. students believe that they will complete the study programme.				.808

Step 3: Rename the new dimensions

The final items are shown in the structure matrix (table 4-6 and 4-8). As the questions is supposed to be the items designed in the same questionnaire, the common items are combined to formulate the final version of questionnaire for main study with concern of the assurance of both reliability and validity (see the appendix). As a conclusion, the dimensions of questionnaire has been modified into four after the factor analysis, and they are renamed as “induction to the programme” (Q6, Q7), “learning process” (Q12, Q24, Q25, Q27, Q28, Q30), “assessment” (Q13, Q33, Q35), “self-confidence” (Q36). After reordering the items, the questionnaire is created to be sent to the potential respondents in the sample doctoral study programme in education in The Czech Republic and China (the formal questionnaire is enclosed as the appendix).

4.1.3 Main study

In spite of the focus on modification the instrument for survey, the format of web-based questionnaire, the instruction, and invitation mail are concerned as well, such as sending the repeated invitation after a week to remind the potential respondents and so on. After long-term preparation and serious pilot study, the main part of this study in quantitative approach has been implemented in one doctoral study programme in education in China and the other in the Czech Republic. Both of these two universities are one of the oldest in their countries. The perception of current Ph.D. students is acquired to evaluate the ideal and reality of doctoral study programme in education.

Survey in China

In this thesis, the alpha coefficient is referred to provide the coefficient of inter-item correlations. The survey on variables of ideal and reality will be designated as questionnaire 3 and questionnaire 4 in this thesis. The sample rate of the respondents is 57.14% in the doctoral study programme in China. Based on the

democracy information of questionnaire, there are 50% of the respondents studying in the second year of the doctoral study programme, 37.5% in the third year, and 12.5% in the fourth year. Additionally, the male students and female students are selected approximately in average. 68.5% of the respondents are female Ph.D. students while 37.5% are male.

Questionnaire 3: Ideal of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach's Alpha equals to 0.924 (see table 4-10) which indicates a high level of internal consistency for our scale with the sample.

Table 4-10. Reliability Statistics (Questionnaire 3)

Cronbach's Alpha	N of Items
.924	12

As it has been shown in table 4-11, the value of coefficient alpha (0.924) has increased after deleting four of the questions including no.1 (0.941), 10 (0.927). Thus these two items are deleted after this step of analysis. There are still 10 items left to be analyzed.

Table 4-11. Item-Total Statistics (Questionnaire 3)

	Cronbach's Alpha if Item Deleted
Q1	.941
Q10	.927

In this subchapter, the descriptive statistical tests are assimilated to examine the average attitude on the items of the questionnaire to evaluate the ideal of doctoral study programme in education in China. The other tests are assumed to be used in next chapter to discuss specific issues.

Questionnaire 4: Reality of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach's Alpha equals to 0.938 (see table 4-12) which indicates a high level of internal consistency for our scale with the sample.

Table 4-12. Reliability Statistics (Questionnaire 4)

Cronbach's Alpha	N of Items
.938	12

As it has been shown in table 4-13, the value of coefficient alpha (0.938) has increased after deleting four of the questions including no.1 (0.947), 6 (0.940). Thus these two items are deleted after this step of analysis. There are still 10 items left to be analyzed.

Table 4-13. Item-Total Statistics (Questionnaire 4)

	Cronbach's Alpha if Item Deleted
Q1	.947
Q6	.940

In this subchapter, the descriptive statistical tests are assimilated to examine the attitude on the items of the questionnaire to evaluate the reality of doctoral study programme in education in China. The other tests are assumed to be used in next chapter to discuss specific issues.

Survey in the Czech Republic[3]

In this thesis, the alpha coefficient is referred to provide the coefficient of inter-item correlations. The survey on variables of ideal and reality will be designated as questionnaire 5 and questionnaire 6 in this thesis. The sample rate of the respondents is 66.67% in the doctoral study programme in the Czech Republic. Based

[3] This survey in the Czech Republic is partially supported by a grant from IGA PdF_2013_014.

on the democracy information of questionnaire, there are 83.3% of the respondents studying in the first year of the doctoral study programme and 16.67% in the second year. Additionally, the male students and female students are selected approximately in average. 66.67% of the respondents are female Ph.D. students while 33.33% are male.

Questionnaire 5: Ideal of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach's Alpha equals to 0.911 (see table 4-14) which indicates a high level of internal consistency for our scale with the sample.

Table 4-14. Reliability Statistics (Questionnaire 5)

Cronbach's Alpha	N of Items
.911	12

As it has been shown in table 4-15, the value of coefficient alpha (0.911) has increased after deleting four of the questions including no.4 (0.933), 9 (0.924). Thus these two items are deleted after this step of analysis. There are still 10 items left to be analyzed.

Table 4-15. Item-Total Statistics (Questionnaire 5)

	Cronbach's Alpha if Item Deleted
Q4	.933
Q9	.924

In this subchapter, the descriptive statistical tests are assimilated to examine the average attitude on the items of the questionnaire to evaluate the ideal of doctoral study programme in education in the Czech Republic. The other tests are assumed to be used in next chapter to discuss specific issues.

Questionnaire 6: Reality of the Doctoral Study Programme in Education

Based on the result of internal consistency analysis, the value of Cronbach's

Alpha equals to 0.838 (see table 4-16) which indicates a high level of internal consistency for our scale with the sample.

Table 4-16. Reliability Statistics (Questionnaire 6)

Cronbach's Alpha	N of Items
.838	12

As it has been shown in table 4-17, the value of coefficient alpha (0.838) has increased after deleting four of the questions including no.8 (0.839), 9 (0.869). Thus these two items are deleted after this step of analysis. There are still 10 items left to be analyzed.

Table 4-17. Item-Total Statistics (Questionnaire 6)

	Cronbach's Alpha if Item Deleted
Q8	.839
Q9	.869

In this subchapter, the descriptive statistical tests are assimilated to examine the average attitude on the items of the questionnaire to evaluate the reality of doctoral study programme in education. The other tests are assumed to be used in next chapter to discuss specific issues.

Above all, the quantitative approach has been introduced. There are still some weaknesses. For instance, the researcher's understanding is achieved directly from the data; the generalization is produced basing on the tests; and the meaningful message might be lost in the procedure. As the design of whole research, the qualitative approach is connected and complemented with the quantitative approach to achieve the objectives of the thesis.

4.2 Qualitative Approach

The qualitative approach aims to acquire the effect of doctoral study programme

on Ph.D. students. With the orientation, several questions are explored by qualitative approach as follows.

Research questions:

- What have the Ph.D. students learned from their doctoral study?
- Have the Ph.D. graduates prepared well for their academic life?
- What is the impact of doctoral study on the Ph.D. graduates' professional path?

Personal experience has served as guidance for individuals and organizations to make the decision about their actions or changes. For educational research, the students' personal experience should be taken care in guiding the programme as well. The qualitative methodology is exposed to explore the life path of Ph.D. graduates after graduation from the doctoral study programme in education. To balance the investigation time and resources in two countries involved, the Ph.D. graduates are chosen from the doctoral study programme in education in the Czech Republic. The life stories of each respondent are created based on the in-depth interview. And the analysis approach is theoretically on account of the grounded theory. The concrete research process and method is described in the subchapters with more details. Additionally, the idea of supervisors and members from scientific board is also inquired by semi-structural interviews in the doctoral study programme of two countries.

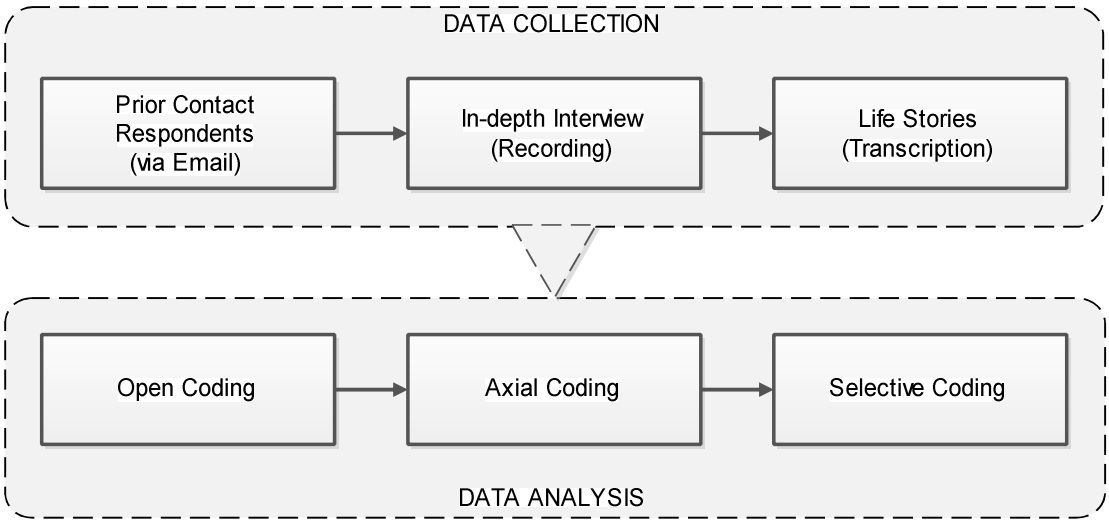


Fig.4-6. Framework of the qualitative study

To get multiple perception and reality of the effect of doctoral study on academic career of Ph.D. graduates, the qualitative approach is chosen to use rather than quantitative research methods, which are more appropriate in just one conception of reality or one interpretation (Guba & Lincoln, 1994). We actually construct personal meaning during the making and telling of our narratives, that our own experiences take the form of the narratives we use to tell about them (Bruner, 1986, 1987, 1990, 1991). There has been diverse of researches in education which used different qualitative methods in data collection such as case study, ethnography, phenomenology, historical, action research, content analysis, grounded theory, generic qualitative methods and so on (Patton, 1996; Marriam, 1999). As the orientation of research is to collect unique experience and perspective of individuals, there is no better way to get it than in the person's own voice.

In this thesis, the qualitative approach of life stories is used to discover the impact of doctoral study on Ph.D. graduates' academic life. To inquire the effect of doctoral study on Ph.D. students, the life path are tracked by the story-telling by Ph.D. graduates. To get the life stories of Ph.D. graduates and construct the impact model based on the criteria generalized from the life stories created upon the in-depth

interview. Narrative stories are used as source of data generated through in-depth interviews originally. The specific scheme follows the seven stages in the complete interviewing process including thermalizing, designing, interviewing, transcribing, analyzing, verifying, and reporting (Kvale, 1996: 23-24). The researchers have clarified the purpose of the interviews firstly which is to get their perspective on the role of doctoral study in their professional life of university teachers. The most significant thing is to construct the interview outline that is based on a set of topics to be discussed in depth (Babbie, 2007: 318). The qualitative interviewing design is flexible, interactive, and continuous, rather than prepared in advance and locked in stone (Rubin & Rubin, 1995: 43). The interview outline has been settled by a set of topics based on the CIPO (Context-Inputs-Process-Outputs) model (Scheerens, 1990) and been divided into three areas, the experience before doctoral study of education, the experience during doctoral study of education and the experience after doctoral study of education, with the differences brought from the doctoral study process. Based on the framework of three periods of experience, the lightly-structured outline of inquiry has been generalized in the depth interview (Wengraf, 2001: 111-113). Therefore, the graduates' perspective on the effects of doctoral study has been tracked. The research methods are gradually implemented in several steps from data collection, organization, and analysis procedure.

There are visible strengths of attempt in qualitative approach. It's beneficial to get the data of limited respondents in depth and conduct cross-case generalization and comparison. And the researcher can use the primarily qualitative method of "grounded theory" to generate inductively a tentative but explanatory theory about a phenomenon.

To assure the quality of qualitative approach, the validity and reliability has been considered seriously in each step of the design and implementation of the whole procedure and also has been identified in the introduction of the practical strategies above. Basically, the advantage of the research as an English speaker has been

illustrated and verified in the data collection. Standing in a neutral position, the content of acknowledgement is quite close to the true value of the respondents rather than the interviewer's. Moreover, the accuracy of analysis is verified by asking storyteller repeatedly. On the one hand, the reliability of stories has been confirmed by continuous repeating the words of tellers face to face during the interview and by writing them to check all the stories via email after the interview. During the analyzing of the data, the life stories have brought deeper understanding of the micro differences in graduates' behavior, attitudes, and perspective on core concept through the in-depth interview.

On the other hand, the life stories are individual point of view mixed with facts. Each of the stories has thus been coded by two separated researchers to create the new stories for each graduate. In the first cycle, the open coding process is ranged in magnitude from a single word to a full sentence to an entire page of text to a stream of moving images. The second cycle coding process is concerned on the portions coded to the exact same units, longer passages of text, and even a reconfiguration of the codes themselves. "Coding is primarily an interpretive act" (Saldaña, 2012: 4). Simultaneous coding is also involved in the second cycle as well in negotiating with each story. Life stories therefore provide a longitude picture of the course of the doctoral study in Education and the effect on graduates' academic career path on the specific position of university teachers. The comparison of different graduates' experience compensates for the weakness of cross-sectional study.

4.2.1 Data collection

For the aim of qualitative study, the group of Ph.D. graduates fulfilling several criteria has been chosen to be the unit of investigation. To be more precise, the members of this group are those who have already finished their doctoral study in the presence form of study in the past decade (between 2004 to 2013); those who have been working as university teachers since the graduation, and those whose level in English language ability are C1 at least (to fulfill the requirement of interview

implemented by an English speaker). The English language used during the interviews and during the development of life stories can be seen as an advantage. The interviewer (who is not of Czech origin) holds the position of the "socially acceptable incompetent" when interviewing, she or he is "ignorant" and needs to be "taught". This "watcher" might help to capture the quintessential role (Lofland, et al., 2006: 69-70). It's a disadvantage that the sample size has to be narrowed.

Before contacting the graduates, the researchers have gained a brief knowledge of interviewees from the perspective of director and administrative person of the Ph.D. studies. This step has been accomplished by the data available on the internet (graduates' CVs, their publication list on the academic database, etc.). Then the real process has started with contacting the Ph.D. graduates (fulfilling the above set of criteria). The initial contact with the graduates is direct and rather formal to show the aim of study, the length of time, and the outline of interview briefly with the informants' introduction. The invitation (including a brief introduction of the research etc.) has been sent by emails to ten graduates of each year in the last decade. Six positive replies, one negative reply, one tentative, and no answer from the others after a month have been gained. In the end, the seven graduates are selected as the interviewees and five out of seven of them are currently occupied as the academic staff at the university and the other two respondents are researchers of other educational institutions in Czech Republic. The interview has been started formally afterwards. The whole interview has been recorded and transcribed then from taped into the written way. There have been three meetings with each of them for app. 90-120 minutes in each of the interview. In the story-telling process, the researcher records the conversation by digital voice recorder under the permission of the storytellers. One of them refused to use the recorder so that the notes have been taken during the interview. All other important comments have been taken down after the end of the interviews. The process of interview has been recorded into three audio documents for each of the graduates.

The interview starts with answering the questions which the graduates would like to know about the research including the ethical considerations etc. The respondents have been told clearly the purpose and process of the interview firstly. The previously stated purpose has resulted in a warm welcomed by the graduates. They are flattered that scientists find their experience and perception important enough to be studied. Besides, there is possible chance for practical improvement of the doctoral study programme in Education by their effort. Hence, they are well prepared to provide full information to meet the demand of research on them after clearly understanding their valuable role in this research. The graduates are seemed as researcher's predecessors to introduce their life stories for guidance the researcher's following study and work in future.

The researcher transcribed the oral record of storytellers' words into written way by listening to the audio repeatedly and carefully to write down what they are talking during the interview. When organizing the data on the computer, the names of person or institution are substituted by the capital words in their stories. And the result of transcription is sent to the respective teller by email to get their confirmation and accreditation of the content of interview. Besides, some more questions have been sent to some of the interviewees to implement the stories. Then the file of transcription is modified again with the feedback of interviewees. After transcribing, the text has been sent back to the interviewees to ask for their confirmation of the publication in an anonymous way. By these tree steps, the life stories have been built on the first hand data of the experience of Ph.D. graduates from doctoral study programme in education.

4.2.2 Data analysis

The experience and perception of Ph.D. graduates is generalized in the in chronological order as their life stories. As a narrative form, life stories has evolved from the oral history, life history, and other ethnographic and field approaches which discover deeper meaning in our lives through the process of reflecting and putting the

events, experiences, and feelings that we have lived into oral expression (Atkinson, 1998). Life stories/history/autobiographic approach is a research method that fits better with the reality, rather than confining research participants to certain conditions or trying to manipulate some variables thus losing its naturalistic realities. Some life historians claim that the analysis of the social, historical, political, and economic contexts of such experiences is what transforms a life story into a life history. That is life histories situate stories of individual lives within a bigger picture. Ivor Goodson creates a distinction between life stories and life history (1998). The latter is the former plus appropriate and challenging data from a wide range of sources, and evidence of vital discussion with colleagues. “The life history pushes the question of whether private issues are also public matters. The life story individualizes and personalizes. The life history contextualizes and politicizes” (Goodson, 1998). The difference between a life story and an oral history is usually emphasis and scope. An oral history most often focuses on a specific aspect of a person’s life, such as work life or a special role in some part of the life of a community. An oral history most often focuses on the community or on what someone remembers about a specific historical event, issue, time, or place. When an oral interview focuses on a person’s entire life, it is usually referred to as a life story or life history. Although distinctions between life stories, oral histories, autobiographies, and life histories are contested and problematic, they typically seek to provide accounts and analyses of how people make sense of their lived experience in the construction of both individual and social identity.

Life stories have gained respect and acceptance in many academic circles such as psychology, anthropology, sociology, history research and so on. In education, life stories have been used as a new way of knowing and teaching (Witherell & Noddings, 1991). “Producing life stories is an increasingly popular form of narrative-based inquiry in fields as diverse as anthropology, education, gerontology, history, law, medicine, psychology, sociology, and women’s studies”(Gough, 1994). Ivor Goodson

concludes that the significance of various limits and possibilities for individual lives are both contained and enabled by their location in the social world; otherwise, individuals are inevitably constructed as victims, powerless in the evolution of their lives (Goodson, 1995). A life story is the story a person chooses to tell about the life he or she has lived, told as completely and honestly as possible, what the person remembers of it and what he or she wants others to know of it, usually as a result of a guided interview by another. It includes the important events, experiences and feelings of a lifetime which improve the understanding of the past and the present more fully.

The content of the stories is grouped into different paragraphs with diverse colors. The analytic methods are used on the basis of grounded theory developed by Glaster and Strauss (1967), which is a set of iterative procedures designed to identify categories and concepts within text that are then linked into formal theoretical models (Chamaz, 2006: 133-140). On the basis of grounded theory, the analysis process has been inductively developed (Glaster & Strauss, 2006; Pidgeon & Henwood, 2004).

Firstly, the transcribed materials of each graduate have been analyzed initially with open coding by two independent researchers in the first circle in which the process entails systematically reviewing units of text line-by-line as they are collected. The emergent codes for those units have been created and necessary memos have also been written to explain the created codes and the relationships between codes. In the second circle, two researchers discuss with each other and later agree on the final codes which would be used in construction the categories for analysis by repetitive discussion. Two analytic procedures are basic to generalize the concepts in the coding process, including the “making of comparisons” and “asking of questions” (Strauss & Corbin, 1990: 62-63). The categories have been developed in terms of their properties and dimensions to recognize the relationship between the categories and subcategories systematically.

Secondly, the axial coding has been developed in an organizing scheme

including conditions, actions/interactions, and consequences (Strauss & Corbin, 1998: 128). However, the frame may extend or limit the vision (Chamaz, 2006: 61). By means of the paradigm model, the subcategories are linked into a category in a set of relationships above. Thirdly, a grounded theory has been built upon the core categories at a higher more abstract level of analysis by selective coding. A new life story of Ph.D. graduates of education is recreated with centralized concern of a general descriptive overview of the study experience (Goodley, et al., 2004). The theory has been laid out with the foundation of the combined relationship between categories as well as their properties and dimensions. Finally, the systematic and exhaustive comparison of text segments is used to build thematic structure and theory from a body of text (Guest & Namey & Mitchell, 2013: 9-10).

5. PERCEPTION OF THE DOCTORAL STUDY PROGRAMME IN EDUCATION

This thesis aims to evaluate a doctoral study program of education on the perspective of stakeholders. This chapter introduces the quantitative studies which informs the whole research as an embedded component and feeds into the overall study findings. There are two central issues explored by the approaches. Firstly, the ideal of doctoral study programme in education is acquired on the perspective of current Ph.D. students. The criteria of evaluation the doctoral study programme in education is shown as the conclusion of their standpoints. Secondly, the reality of doctoral study programme in education is investigated in two countries. The extent of fulfilling the ideal is proposed to assess the implementation of the study programme in practice.

5.1 Perceived Ideal of the Doctoral Study Programme in Education

As the first objective of the quantitative research in this thesis, the ideal of doctoral study programme in education is explored on the perspective of current Ph.D. students in The Czech Republic and China. On one hand, the perception of respondents on each item is analyzed by the frequencies of variables separately in both of these two countries. On the other hand, the criteria would be generalized from the common consensus between them based on the correlation analysis.

According to the prior test of the result, Q4 and Q9 of the questionnaire in the Czech Republic and the Q1 and Q10 of the questionnaire in China have been deleted. The frequencies of the other results of questions are analyzed to describe the numeral character of their perception.

Table 5-1. Frequencies of items in the survey of the ideal of doctoral study programme in education on the perspective of current Ph.D. students in the Czech Republic and China

Scale	Very important		Important		Neither important nor unimportant		Unimportant		Not at all important	
Sample	Czech Republic	China	Czech Republic	China	Czech Republic	China	Czech Republic	China	Czech Republic	China
Q1	33.3%	-	50%	-	8.3%	-	0	-	8.3%	-
Q2	33.3%	62.5%	41.7%	25%	16.7%	12.5%	8.3%	0	0	0
Q3	16.7%	75%	25%	12.5%	50%	12.5%	0	0	8.3%	0
Q4	-	75%	-	0	-	12.5%	-	12.5%	-	0
Q5	33.3%	62.5%	41.7%	12.5%	16.7%	25%	0	0	8.3%	0
Q6	50%	75%	0	12.5%	41.7%	12.5%	0	0	8.3%	0
Q7	25%	87.5%	50%	0	16.7%	12.5%	8.3%	0	0	0
Q8	8.3%	62.5%	8.3%	25%	50%	12.5%	25%	0	8.3%	0
Q9	-	75%	-	12.5%	-	12.5%	-	0	-	0
Q10	41.7%	-	16.7%	-	33.3%	-	0	-	8.3%	-
Q11	50%	62.5%	16.7%	12.5%	25%	25%	0	0	8.3%	0
Q12	33.3%	75%	41.7%	0	16.7%	25%	0	0	8.3%	0

After deleting the Q1, Q4, Q9, and Q10 which are not commonly reliable for both the questionnaires in the Czech Republic and China, the result of other questions is analyzed by their correlation between these two countries. The Mann-Whitney U test measures the difference of each of the variables respectively based on the 2-tailed tests between two countries (table 5-2).

For each of the question, the mean and standard deviation have been calculated on SPSS. Among all of the items, Q3, Q6 and Q9 have achieved the highest level of assessment on the importance in average while the Q4, Q5 and Q11 have got the lowest assessment by the test of mean. And the standard deviation of Q4 is the highest of all which means the differences among respondents' perception exist more frequently. The descriptive statistical tests provide a basic to acknowledge that all of these ten items are believed to be more than important averagely in evaluation the quality of doctoral study programme in education. They are supposed to be the

significant variables in determing the quality of doctoral study programme in education according to the perspective of current Ph.D. students in the sample programme in China.

Table 5-2. Correlation of ideal of doctoral study programme in education

QUESTIONS	INDICATORS	THE CZECH REPUBLIC	CHINA
Q2	Mean	4.0000	4.5000
	Std. Deviation	0.9535	0.7559
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q3	Mean	3.4167	4.6250
	Std. Deviation	1.0836	0.7440
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q5	Mean	3.9167	4.3750
	Std. Deviation	1.1645	0.9161
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q6	Mean	3.4167	4.6250
	Std. Deviation	0.6686	0.7440
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q7	Mean	3.9167	4.7500
	Std. Deviation	0.9003	0.7071
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q8	Mean	2.8333	4.5000
	Std. Deviation	1.0299	0.7559
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q11	Mean	4.0000	4.3750
	Std. Deviation	1.2792	0.9161
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q12	Mean	3.9167	4.5000
	Std. Deviation	1.1645	0.9258
	Asymp. Sig. (2-tailed)	0.3170	0.3170

For each of the question, the mean and standard deviation have been calculated on SPSS. Among all of the items, Q1, Q2 and Q11 have achieved the highest assessment on the importance in average while the Q8 have got the lowest assessment by the test of mean. And the standard deviation of Q6 is the highest of all which

means the differences among respondents' perception exist more frequently. The descriptive statistical tests provide a basic to acknowledge that all of these ten items are believed to be more than important averagely in evaluation the quality of doctoral study programme in education. They are supposed to be the significant variables in determing the quality of doctoral study programme in education according to the perspective of current Ph.D. students in the sample programme in the Czech Republic.

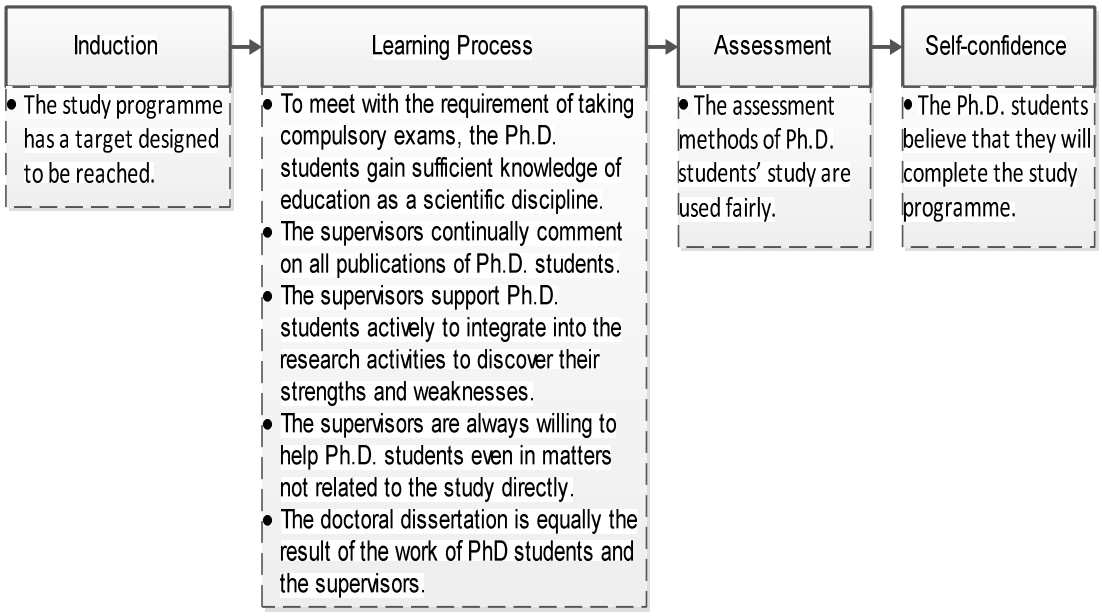


Fig. 5-1 Criteria of the ideal of doctoral study programme in education

As it has been shown in the table, the p-value of these variables is higher than 0.05 which means they appraise the importance of these items in evaluation the ideal of doctoral study programme commonly. It has been identified that there is no significant difference in the results of a rating sale of two independent samples in two countries. Therefore, these variables are considered to be the concrete criteria of evaluation the doctoral study programme in education. And the items are concluded into a primary framework to criteria of process evaluation.

5.2 Perceived Reality of the Doctoral Study Programme in Education

As the second empirical objective of this thesis, the reality of doctoral study programme in education is explored on the perspective of current Ph.D. students in the Czech Republic and China. On one hand, the perception of respondents on each item is analyzed by the frequencies of variables separately in both of these two countries. On the other hand, the reality is compared with the ideal of doctoral study programme in education based on the correlation analysis. The results are to verify the hypothesis of the quantitative research.

Perceived reality of doctoral study programme in education in the Czech Republic:

According to the prior test of the result, the Q8 and Q9 have been deleted from the questionnaire in China. The frequencies of the other results of questions are analyzed to describe the numeral character of their perception shown in table 5-3.

After deleting the Q4, Q8, and Q9 which are not commonly reliable for the ideal and reality evaluated by the questionnaire in China, the result of other questions is analyzed by their correlation between these two variables. The Mann-Whitney U test measures the difference of each of the items respectively based on the 2-tailed tests between the ideal and reality (table 5-4).

Table 5-3. Frequencies of items in the survey of the reality of doctoral study programme in education in the Czech Republic

Scale	Very fulfilled	Fulfilled	Neither fulfilled nor unfulfilled	Unfulfilled	Not at all fulfilled
Q1	8.3%	33.3%	16.7%	25%	16.7%
Q2	16.7%	0	58.3%	16.7%	8.3%
Q3	33.3%	41.7%	25%	0	0
Q4	50%	0	25%	25%	0
Q5	33.3%	41.7%	8.3%	8.3%	8.3%
Q6	16.7%	50%	25%	8.3%	0
Q7	16.7%	16.7%	50%	16.7%	0
Q10	16.7%	16.7%	41.7%	8.3%	16.7%
Q11	16.7%	8.3%	41.7%	25%	8.3%
Q12	16.7%	8.3%	50%	16.7%	8.3%

For each of the question, the mean and standard deviation have been calculated on SPSS. Among all of the items, Q10 has got the lowest assessment by the test of mean. And the standard deviation of Q12 is the highest of all which means the differences among respondents' perception exist more frequently. The descriptive statistical tests provide a basic to acknowledge that all of these ten items are believed to be well fulfilled averagely in reality of the quality of doctoral study programme in education. They are supposed to be the significantly fulfilled variables in implementing the reality of doctoral study programme in education according to the perspective of current Ph.D. students in the sample programme in the Czech Republic.

As it has been shown in the table, the p-value of these variables is higher than 0.05 which means they appraise the importance of these items in evaluation the reality of doctoral study programme commonly. It has been identified that there is no significant difference in the results of a rating sale of two independent samples of ideal and reality. Therefore, the null-hypothesis is rejected. The correlation of ideal and reality of doctoral study programme in education is significant at the 0.01 level based on 2-tailed test in the Czech Republic.

Table 5-4. Correlation of ideal of doctoral study programme in education in the Czech Republic

QUESTIONS	INDICATORS	IDEAL	REALITY
Q1	Mean	4.0000	2.9167
	Std. Deviation	1.1282	1.3114
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q2	Mean	4.0000	2.8333
	Std. Deviation	0.9535	0.8349
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q3	Mean	3.4167	2.7500
	Std. Deviation	1.1877	1.3887
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q5	Mean	3.9167	3.8333
	Std. Deviation	1.1645	1.2673
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q6	Mean	3.4167	3.7500
	Std. Deviation	0.6686	0.8660
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q7	Mean	3.9167	3.3333
	Std. Deviation	0.9003	0.9847
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q10	Mean	3.8333	3.0833
	Std. Deviation	1.2673	1.3114
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q11	Mean	4.0000	3.0000
	Std. Deviation	1.2792	1.2061
	Asymp. Sig. (2-tailed)	0.3170	1.0000
Q12	Mean	3.9167	3.0833
	Std. Deviation	1.1645	1.1645
	Asymp. Sig. (2-tailed)	0.3170	0.3170

Perceived reality of doctoral study programme in education in China:

According to the prior test of the result, the Q1 and Q6 have been deleted from the questionnaire in China. The frequencies of the other results of questions are analyzed to describe the numeral character of their perception in table 5-5.

Table 5-5. Frequencies of items in the survey of the reality of doctoral study programme in education in China

Scale	Very fulfilled	fulfilled	Neither fulfilled nor unfulfilled	Unfulfilled	Not at all fulfilled
Q2	12.5%	37.5%	25%	25%	0
Q3	12.5%	25%	50%	12.5%	0
Q4	50%	0	25%	25%	0
Q5	37.5%	25%	25%	12.5%	0
Q7	50%	12.5%	25%	12.5%	0
Q8	50%	0	37.5%	0	12.5%
Q9	37.5%	12.5%	25%	12.5%	12.5%
Q10	50%	12.5%	25%	12.5%	0
Q11	12.5%	37.5%	37.5%	0	12.5%
Q12	37.5%	37.5%	12.5%	0	12.5%

After deleting the Q1, Q6, and Q10 which are not commonly reliable for the ideal and reality evaluated by the questionnaire in China, the result of other questions is analyzed by their correlation between these two variables. The Mann-Whitney U test measures the difference of each of the items respectively based on the 2-tailed tests between the ideal and reality (table 5-6).

For each of the question, the mean and standard deviation have been calculated on SPSS. Among all of the items, Q9 has achieved the highest level of assessment on the reality in average. And the standard deviation of Q8 is the highest of all which means the differences among respondents' perception exist more frequently. The descriptive statistical tests provide a basic to acknowledge that all of these ten items are believed to be well fulfilled averagely in reality of the quality of doctoral study programme in education. They are supposed to be the significantly fulfilled variables in implementing the reality of doctoral study programme in education according to the perspective of current Ph.D. students in the sample programme in China.

As it has been shown in the table, the p-value of these variables is higher than 0.05 which means they appraise the importance of these items in evaluation the reality of doctoral study programme commonly. It has been identified that there is no

significant difference in the results of a rating sale of two independent samples of ideal and reality. Therefore, the null-hypothesis is rejected. The correlation of ideal and reality of doctoral study programme in education is significant at the 0.01 level based on 2-tailed test in China.

Table 5-6. Correlation of ideal of doctoral study programme in education in China

QUESTIONS	INDICATORS	IDEAL	REALITY
Q2	Mean	4.5000	3.3750
	Std. Deviation	0.7559	1.0607
	Asymp. Sig. (2-tailed)	1.0000	0.3170
Q3	Mean	4.6250	3.3750
	Std. Deviation	0.7440	0.9161
	Asymp. Sig. (2-tailed)	1.0000	1.0000
Q4	Mean	4.3750	3.7500
	Std. Deviation	1.1877	1.3887
	Asymp. Sig. (2-tailed)	1.0000	0.3170
Q5	Mean	4.3750	3.8750
	Std. Deviation	0.9161	1.1260
	Asymp. Sig. (2-tailed)	1.0000	0.3170
Q7	Mean	4.7500	3.7500
	Std. Deviation	0.7071	1.4881
	Asymp. Sig. (2-tailed)	1.0000	1.0000
Q8	Mean	4.5000	3.5000
	Std. Deviation	0.7559	1.5119
	Asymp. Sig. (2-tailed)	1.0000	0.3170
Q9	Mean	4.6250	4.0000
	Std. Deviation	0.7440	1.1952
	Asymp. Sig. (2-tailed)	1.0000	1.0000
Q11	Mean	4.3750	3.3750
	Std. Deviation	0.9161	1.1877
	Asymp. Sig. (2-tailed)	0.3170	0.3170
Q12	Mean	4.5000	3.3750
	Std. Deviation	0.9258	1.5059
	Asymp. Sig. (2-tailed)	0.3170	1.0000

6. Preparation of Ph.D. Graduates for Professional Path

As the conclusion of the findings in qualitative study, the researcher devotes to get the experience of Ph.D. graduates in the doctoral study. Firstly, the cognitive preparation of Ph.D. graduates reveals the effect of doctoral study on their professional path. The preparation route is followed by the researcher to formulate the theory of explaining the role of doctoral study experience. Secondly, the initial socialization of Ph.D. graduates is uncovered at the position of university teachers to make their readiness for academic career visible. Thirdly, the influence of doctoral study is disclosed the transformation of Ph.D. students' self-concept on the subject, occupational role, and academic life. These three issues are the result of qualitative inquiry. Aimed to get an image of the life path of the Ph.D. graduates, these three issues are devoted to uncover their perspective on the experience of doctoral study of education and the impact on their academic career.

6.1 Learning process in the doctoral study programme

The categories have been generalized as three main activities including "learning methodology of research", "teaching basic subjects of education" and "research for the dissertation" to show the process of learning in the doctoral study programme in education. Furthermore, the model of impact of doctoral study on the professional path of academics is formulated three themes including "theoretical learning", "pedagogical practice", and "academic research" under two domains of "professional ability" and "scientific disposition".

The experience of studying in the doctoral study programme is generalized in the following figure to show the result of analyzing. The subcategories are related by the scheme including "conditions", "action/interactions" and "categories". And the subcategories are concluded through the coding process of the life stories especially on the studying experience of doctoral programme of education (see Fig.6-1).

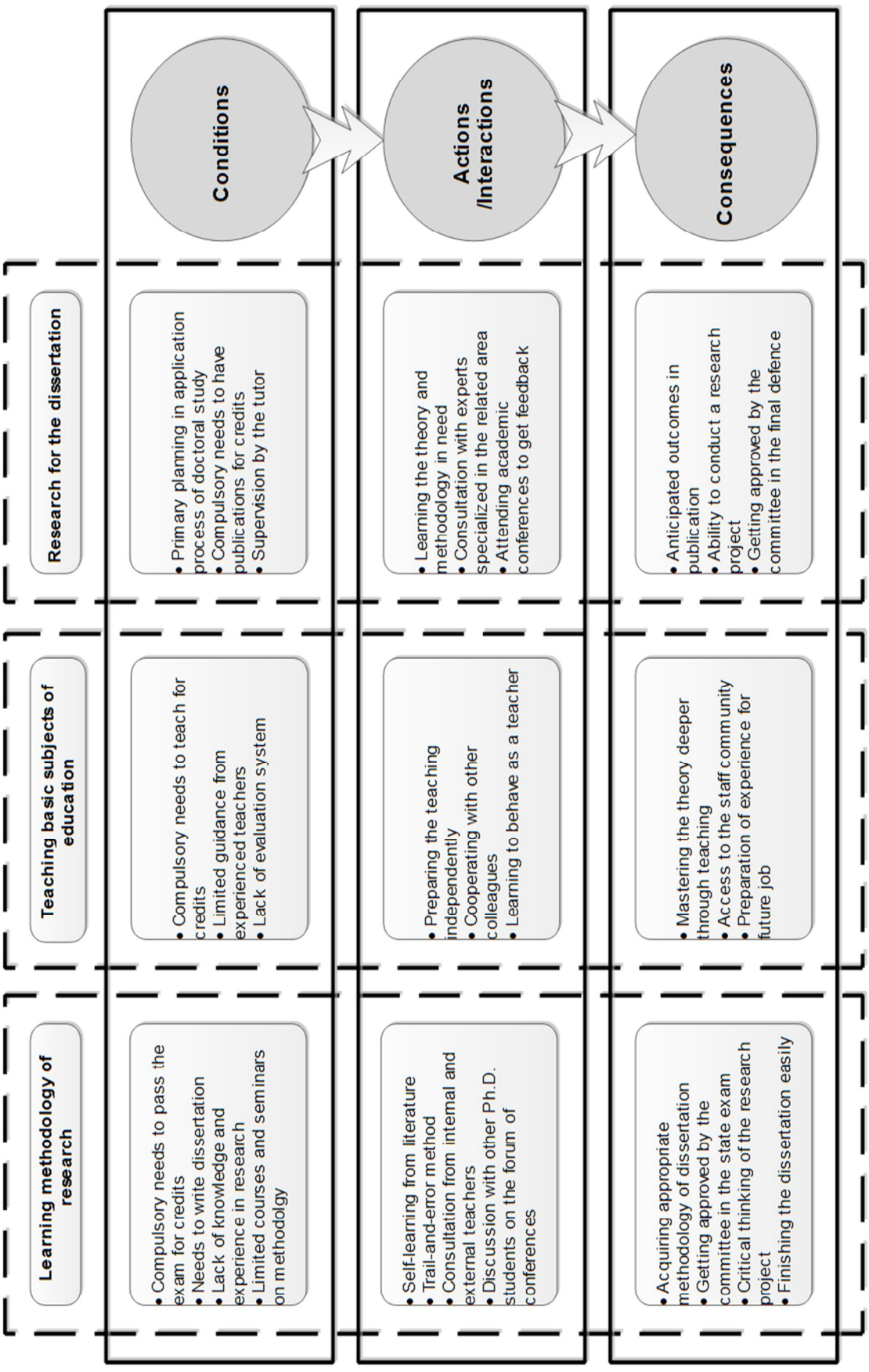


Fig.6-1. The Scheme of Categories

Category 1: Learning methodology of research

During the studying in the doctoral programme of education, there are several exams to pass for each of the Ph.D. students. One of them is the "research methodology". *"The most difficult one was methodology. But I think the most important thing we did was reading a lot of books for what I need for my study.[4]"* The doctoral study is concentrated and guided with the needs of dissertation. As the lack of knowledge and experience of research, it's the hardest exam for the students in common. *"It would be much easier if I knew something in advance, because I had to spend a lot of time in studying in library."*

Although some courses are provided in the study programme, it seems to be insufficient for them. *"We didn't have much methodology as a Ph.D. student. In the doctoral studies, there was only methodology course lasted one semester. The courses were held once in fourteen days. That's all."* The seminar helps simultaneously. *"We had some seminars on research methodology and one subject called 'Methodology'. There was a person who finally came to you and said that you were not good and needed to think more about it. It was the best and only one we had about the methodology. That was the exact date when I started to go the library and read books to find how to do it about methodology actually."* However, the students have to study by their own most of the time. *"The examiner always only gave us some basic information of subjects. It was up to us if we would like to learn more or not."* And the way of learning turn to be self-learning and the trail-and-error method. *"We really had to look for books to read and learn by ourselves. I think 80% of what I learned about methodology was from books. I thought all of us had little knowledge about methodology, so we made a lot of mistakes in our research. We tried every way I found and gave up the wrong ones gradually. That's how we found the right one actually. It was not an easy job. I changed my dissertation at least twice completely."*

[4] The content of interview will be written in italic type in this chapter. In this way, the author highlights the original words of respondents in the interview.

In addition to the independent learning, the Ph.D. students consult from other internal and external teachers specialized in the related area as well. *"I tried to discuss my project with other teachers in the institute. And they helped me indeed. I always tried to ask them if they had time to discuss with me and they did…So I had to try to contact people at another university and asked help from some people teaching there who focused more on … But the teachers working there didn't really like to help me and they just asked me to read this book and that book. And that's all."* The opportunity to attend the academic conference is also a way to get feedback from the experts and other students. *"We had to go to some conferences. They gave me a lot of feedback but without so much information or positive suggestion. They just told me that it could be good or bad but they never know, and it could be good but you will find more things if you think more about it. I think they never tell you directly their opinion on the work. And there were usually seminars for Ph.D. students at the conference. It was great."*

The mastering of methodology increases in proceeding ways of learning. *"I was quite scared with my study at the third time. I was afraid that it would be bad again because it was the final decision. I would stop my studies if it was bad again. However, they said it was great on my state exam. I think it was quite easy to answer their questions for me."* It is verified to be a positive end of the learning process at least for the dissertation. *"The last year's study and the final defence of my dissertation were quite easy for me to find the right way and do the research as I planned."*

Category 2: Teaching basic subjects of education

For the second category of "teaching basic subjects of education", it is another compulsory task of the Ph.D. students in the doctoral programme of education. *"And we had some task to teach courses for bachelor and master students at the faculty as a Ph.D. student. I taught master students of Pedagogy for a whole semester and some other subjects for two hours sometimes". "It was part of the deal to receive the scholarship I think. All of Ph.D. students taught at least one seminar on other*

subjects." In preparing their teaching, the guidance is provided by the experienced teacher of the specific subject. *"In teaching the statistics, the professor gave us the syllabus and we didn't change so much. He told us what to teach and gave us materials he was using in teaching. We used the book written by him. We prepared it each week with his guidance. And we also tested the students at the end of the semester to get passed or failed."* However, there is not always such guidance. *"I prepared the teaching, taught what I wanted, and examined them by myself. Everything was fresh for me so that I had to find a topic, collected all of the information for it and prepared the presentation even I had learned it before."* It is a time-consuming task for Ph.D. students. "*We tried to do what he would do it because we didn't have time or experience or knowledge to prepare anything else. So we were rather happy that he gave us all the materials to teach. The teaching was once a week maybe 50 minutes lesson. I have to spend at least 50 or longer to prepare it."*

An important change of the self-acknowledgement happens during the teaching experience. *"In these three years' study, I experienced a big change of the role from a student to a teacher at the university at least in my mind. At that moment, I knew I had to teach as a Ph.D. student. It was a big problem for me to change my role from a student to a teacher, because I had to be act like a teacher. I was a student as well as a teacher in a period. Although it was a long time to learn how to behave as a teacher, I learned when I started to teach. I started to feel that I was a teacher at the university when I studies in the doctoral program. The experience made you feel like a teacher."* It becomes a prior practice for the future job. *"I think it was necessary to teach at the university as a Ph.D. student studying in Pedagogy, because it was only good to have doctoral studies when you wanted to work at the university. So you should try teaching as well. I think we should have some competency in teaching but there were always problems because it doesn't mean you are a good teacher when you are a good researcher."*

However, the absence of evaluation exists in the teaching practice of Ph.D.

students involved in the doctoral study programme in education because it has not been concluded in the assessment system of the achievement of Ph.D. students. *"In our program, we had to prove that we were good in research by publication and dissertation. But you didn't have to prove that you were a good teacher without any evaluation system in the program. Nobody came to my class and evaluate it. I could do what I want. Nobody knows what you do there even you did nothing. There was not any evaluation system of teachers' performance in teaching. I think the students were upset sometimes because they were always expecting a professional teacher in class. But we never know we were good or not. We should be qualified and it is extremely important to have good teachers at the university in my perspective."*

Category 3: Research for the dissertation

For the third category of "research for the dissertation", the process of connection is presented from the condition of "primary planning in application process of doctoral study" firstly. *"I wrote a plan of my thesis with the aims of my research, what I was trying to do, why it was important to do this research, the theory of it and other aspects. I sent it to the commission. I think they were glad to see my project which was something new and interesting to them. It was an original and new topic for them. They believed that I had to change it because there were a lot of problems in the proposal which was not perfect. But they thought I could make it better. Finally they accepted me easily because it was good to give me a chance to do it and my supervisor had agreed me to be her student yet."*

There are some basic subjects of education which has to be examined compulsorily and optionally besides "research methodology", such as the "philosophy of education", "psychology of education", and so on. The Ph.D. students learned the theory and methodology which is related to their own project of dissertation from diverse perspective of these subjects. Additionally, the publication of research outcomes is compulsorily required to get the credit each school year. *"The requirement of publication pushed me to publish works but I would still try to do that*

even without the requirement. There was no problem for me to finish all of the tasks in publication because I wrote them as my free time activities. I enjoyed it. I think it's necessary to get their articles published on journals which would provide some evidence to the academic committee to make the judgment of your research. It was also important for university who would get money for the publication. For the students, you could really learn how to write academic articles correctly before your dissertation." It's important for students to do research and get it published under the guidance of supervisor. *"I always asked my supervisor where to send the article when I finished. That's what we discussed mostly about." "I always sent my articles to my supervisor to ask for her comment. And she usually gave me some suggestions and modified my articles."* There is also research cooperated with supervisor. *"I had one cooperated article with my supervisor which connected her dissertation and my thesis in master program together. We used the same questionnaire and I just combined the result from her schools and mine. It was quite easy to do that because they were the similar data from the same questionnaire."*

6.2 Initial Professional Socialization of Ph.D. Graduates as University Teachers

Among all of the respondents in the interview, four graduates have been working as university teachers for at least one year. In this subchapter, the life stories of university teachers are dealt with to examine initial stage of Ph.D. in Education graduates' professional path and to acquire perception of a change from a Ph.D. student to a university teacher, to academic profession (Atkinson, 1998: 7-19). The study follows the interests in the professional socialization during preparation for the responsibilities of university teachers. From the stories, the overtaking of the responsibilities especially of teaching and research has been identified in the development of graduates' professional path. The results of qualitative research are presented in three stages of coding. Firstly, the life stories of one respondent are analyzed elementary in chronological order as an example. Secondly, the scheme of

categories is formulated under the framework of “conditions”, “action/interactions”, and “consequences” by axial coding. Thirdly, the route is interpreted of the professional socialization from a Ph.D. student to a university teacher.

To show the image of university life, one of the respondents’ stories is outlined briefly in the chronological order. And the primary analysis is following the stories by open coding based on the memos noted during the interview. Before the graduates’ working experience, the expectation for the responsibilities of university teachers is the starting point of life stories during the period of employment after graduation.

“Actually, I don’t know everything about what I am going to do at the position. I only thought that I would do some research and teaching there. I expect much more easily than it is. I saw the teachers sitting in their office and doing nothing at the university. I thought it would be a perfect job. I had no idea how much work they had to do such as organization and other complex bureaucratic works. That’s what I found when I started working there. There are much more works now. My responsibilities are teaching, researching, organizing, and supervision.”

As it is widely accepted, the teaching and research is the basic mission of a university teacher. It is the prior imagination of the Ph.D. graduates as well at the beginning of their career path. However, the willing of doing research has to obey the needs of time-consuming in teaching.

“I taught and prepared the teaching for about three or four days and did other organization jobs every day in a week. There was little time for me to do the research. Mainly I am a teacher at the university. I like doing research but I spend more time in teaching. The teaching and research could be connected with each other if you teach the similar subjects with your research area at the university. It is the best situation. You could teach well because you know well about this area and you could improve your research during your teaching practice. But it is impossible for most of the teachers. You have to teach at least one more subject you aren’t interested in or aren’t good at. I think that they don’t care about what I teach. It is quite a pity that they don’t

care about teaching much."

It's the reality that there is a lack of freedom in choosing subjects to teach. And the teachers' confidence and motivation is thus reduced. With the concern of the expectation from their students in class, teachers are considered as professionals in specific subjects and didactics. It makes teaching very challenging.

"One should behave as a professional teacher when teaching. You should wear formal clothes and make you look normal. All people expect that you have to know everything about it … like a library. But you never know everything. I only learn something when I need it and I forget it then… So they are surprised when you could not answer their questions. I believe that the best thing of working at the university is that you don't need to follow any plans and go ahead to do what you want. Academic freedom is the best part of the job. I am independent in doing my own research and organize what to teach."

To do the research is always the reason for the Ph.D. graduates to pursue the doctor's degree as well as the position at the university. And the academic freedom is the most attractive factor of this job. Further details in the career path of the respondent are presented in the deeper analyzing stage as follows.

6.2.1 Overtaking diverse responsibilities

When determining the process of overtaking the diverse responsibilities, three categories "solitude in teaching", "independence in research", and "reluctance in administration" have been determined. The related subcategories concluded through the axial coding process of the life stories especially on the working experience of the university teachers after graduation from the doctoral study programme in education (see figure 6-2). They are the: "conditions", "action/interactions" and "categories".

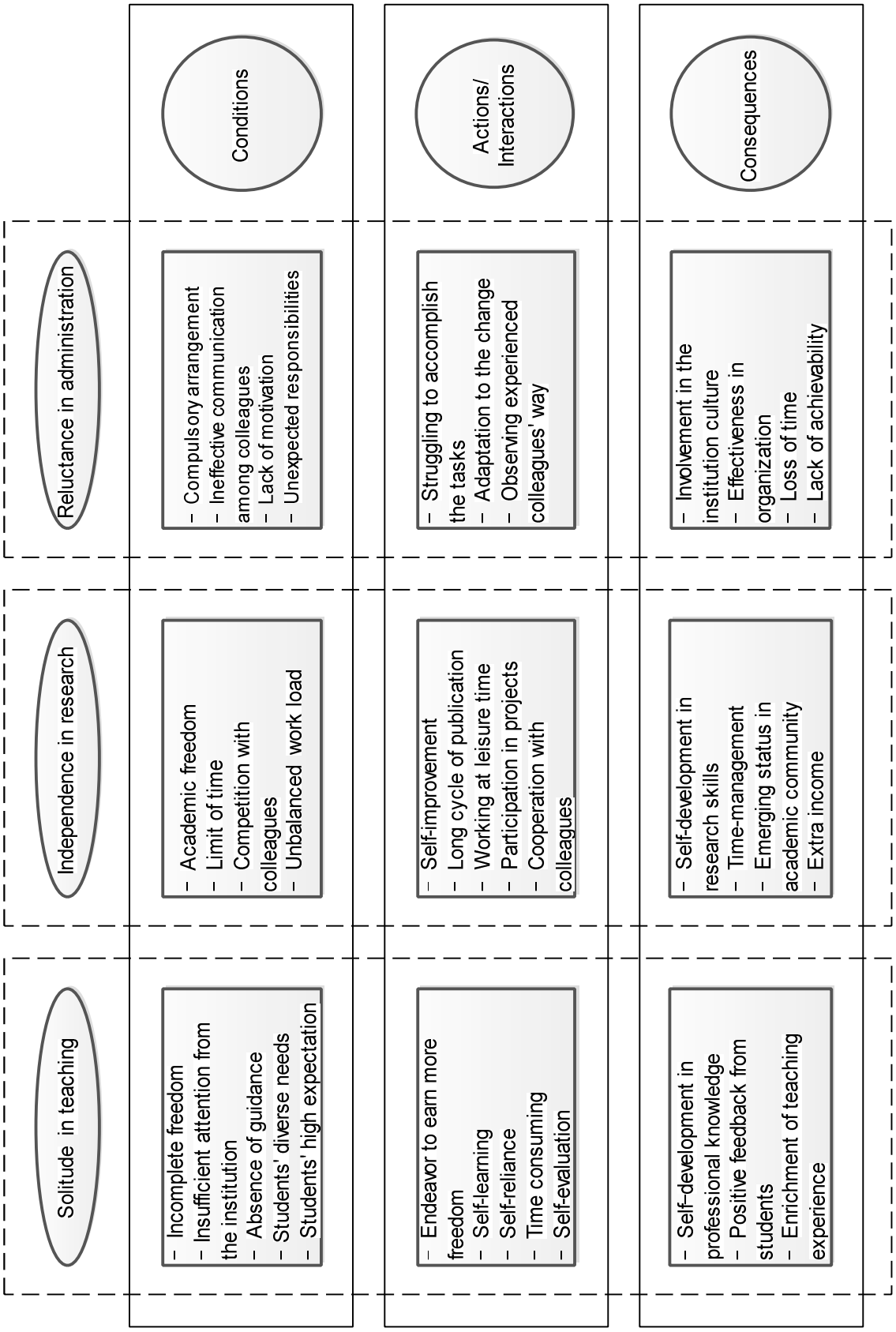


Fig.6-2. The scheme of categories

Category 1: Solitude in teaching

For the first category, "solitude in teaching" shows the statement of teaching as one of the most important responsibilities of university teachers. And the subcategories are collected from the codes in relation to the responsibility of teaching. There is a lack of complete freedom in choosing what subjects to teach by teachers themselves. *"You have to teach at least one more subject you aren't interested in or aren't good at. Especially for young teachers, you have to teach what you are appointed to teach without discussion with you."* To face with a new area, the teachers are not prepared in knowledge completely and sufficiently. Then the self-learning ability becomes the most significant competency for them. *"I knew nothing about the subject but I had to teach it. They thought that I should know everything about education. The students expected me as a professional in this field but I am not. I was quite scared of this subject. Everything I knew was from five textbooks which said the same thing in all of them. When you read fifty pages, there is nothing. It was terrible."* Although the junior university teachers have no choice to teach any arranged subjects, they try to look for the opportunity to change the situation. "*You could have more freedom to choose the subject when you work longer. But you never know if there would be any changes in future. There are always some new subjects opened all the time. I have to do something else when they need teachers there. I think I will never get rid of the subjects I don't like.*" As the consequences, the knowledge and ability of teaching has been developed especially in the new area of education. However, there is also a lack of serious attention on how to teach by the institution. *"I think that they don't care about what I teach. It is quite a pity that they don't care about teaching much."* Without proper arrangement or strong support, it's a waste of their previous professional training and research in their specialty of the doctoral study programme.

Different students (age, educational background, and working experience) do have different needs. *"Sometimes I have to teach very old or experienced teachers and I have to be more confident to behave as a professional teacher in front of them*

as a much younger one." It's not enough to teach university students but also some other experienced teachers on training courses. *"They just provided me the name of subjects, what kind of the students, how long should I teach. I decided everything else by myself. I think the most expectable way of learning at the university went as the teacher speaking while the student writing. I could involve everything needed in this subject and it would still not be boring. And I brought the new theories into the lecture even I had taught this course when I was a Ph.D. student."* It is extremely time-consuming to prepare the teaching rather than to cope with other responsibilities. *"I taught six hours regularly a week. It sounds not too much but I have to prepare the each course for a whole day. And I have to teach a whole day for experienced teachers in distance form. It will be eight hours a day at four weekends per semester."* Besides, the didactics demands are rather specific. For university students, *"the most expectable way of learning at the university went as the teacher speaking while the student writing"*. But for the experienced teachers, *"I asked them to do a lot of discussion about their experience with children instead of trying to do much theoretical lectures"*. The pedagogy used in teaching adults is brought from the teaching experience in doctoral study programme. *"I think the teaching experience helped me teach adults in class."*

Additionally, the feedback is needed by the teacher. *"There was an evaluation system where I could get feedback from students in the first semester. And they gave me very positive feedback. But the system failed to work in the second semester. I got nothing. I was quite happy to read their opinions. I think the evaluation process is very important to teachers who want to improve the teaching."*

Category 2: Independence in research

For the second category, "independence in research" is another significant responsibility for a university teacher who is usually a researcher as well. Basically, there is a highly praised academic freedom in doing research at the university. *"I believe that the best thing of working at the university is that you don't need to follow*

any plans and go ahead to do what you want. Academic freedom is the best part of the job. I am independent in doing my own research." And it takes more essential role within all of the responsibilities as a university teacher. *"That's the most important thing for the university. They only care about research and the articles, because it will bring more money to university by articles."* There are some compulsory tasks to finish in assessing the performance of teachers for the work load. *"For the current job, I have to write two articles and attend one conference at least per year besides teaching. You will lose some money if you can't finish them."* Nevertheless, the research becomes a stressful burden routinely as the limit of time. *"There are some hours of teaching and research which is my favorite activity but I really don't have as much time in doing research as I expect. But I really have to work during my holidays if I want to finish two articles because I don't have time to do it at university."* Additionally, there is usually a long process in publication. *"It needs a long time to get one article published. It takes about three months to print it after it is accepted by the journal. You have no idea if the article is accepted or not for at least four months usually."* It's not an easy job to finish the task of academic work as a university teacher.

To face with the difficulty, the group of researchers has been constructed among colleagues autonomously. Firstly, the knowledge of research methodology is learned and shared from each other among the colleagues. *"There are some people who showed me and taught me how to use the software of statistics. I don't need to be embarrassed to ask them because they are also very young. We could communicate with each other without pressure just between young peoples. You could ask what you don't understand and ask them to explain it again. I think it's the best way to learn something. That's much easier."* Secondly, the cooperation in a group of researchers supports each of the members to finish their research in a short time. *"Now I am working with my colleague together on a project. And it saved both of us a lot of time through cooperation. My colleague is specialized in the specific theory. I do more*

methodology practically in the project. We will have publications together as the co-authors." Thirdly, the junior researcher starts to emerge in the academic community of the institution through the coordinated experience. *"We have a bigger project which will involve ten people together. So I will work with them properly. And I have the other plan of cooperated research with experienced professor as well."*

Category 3: Reluctance in administration

In addition to the two roles above, there are still some other administrative activities in practice. One of the most common accountability is the supervision university students' thesis. *"I feel more responsible when I am a real teacher working at the university compared with a Ph.D. student especially when I become a supervisor of somebody. I have to supervise the thesis of bachelor or master students."* It's also time-consuming in supervision the thesis from reviewing, discussion and evaluation. *"I spent a lot of time in supervision. I spent one hour to explain to the students what to do when they came to me. Sometimes it was a waste of time to do it because the student didn't see it at all or they didn't come to meet you."* The tricky work consumes university teachers' patience. *"I think I will not waste so much time as a supervisor. I found that a lot of students just study for a title and they never do the research as they wrote in their dissertation. Some of them even could not write a complete sentence in Czech. How could they write a dissertation? They didn't understand it at all. Besides, I found other teachers didn't waste so much time in doing it at all."* Regarding the content of their thesis, there is some difficulty in supervision. *"It's a tricky job because they always have a lot of crazy plans for their thesis. They thought they could do the research. So it was difficult to compromise with my view and what they want."* It is also caused by the lack of communication among reviewers. *"There is more than one reviewer with totally different opinions on assessing the same thesis which happens all the time. Then the students could not get what they should do. There would be argument on what is right. But we never talk with each other face to face but send our opinions to the committee of state exam and*

they would mix everything and make the final decision. And you could never know if your advice were good or not."

There is still some other administrative accountability unexpectedly to be organized and needed to be dealt with immediately. *"Nevertheless, I also have to do even more organization work at the university. I don't like organizing. I am guaranteeing some field of study. I need to write some documents and organize the activities. And you will always get some other jobs to do immediately. It is complicated work but hard to explain each of them."*

6.2.2 Ph.D. graduates' academic outcomes

The doctoral study of education has brought the Ph.D. graduates on the way to be an educational researcher. However, there is a more urgent issue for them that are to become an independent researcher in coping with the balance of teaching and research at the position of university teachers. *"I taught and prepared the teaching for about three or four days and did other organization jobs every day in a week. There was little time for me to do the research. Mainly I am a teacher at the university. I like doing research but I spend majority of my working time on teaching."* The reality has also been reflected by the academic performance of the Ph.D. graduates in their research outcomes (see Fig.6-3) that has been identified as a side-effect of the interviews. The amount of publications increases regularly from the first year to the third or fourth year of study. On contrary, it has obviously decreased since the first year of working at universities. The plateau of productivity has been caused by the limit of time as well as the change of needs for their responsibility in different positions especially at the beginning of working experience. However, it becomes the critical point for university teachers to break the deadlock in the professional path. "One reason legislators, trustees, and the general public often fail to understand why ten or twelve hours in the classroom each week can be a heavy load is their lack of awareness of the serious study that undergirds good teaching." (Boyer, 1990: 23) The research lays the fundamental understanding and origin of intelligence for a university

teacher to be a qualified educator in class. And the teaching experience could alternatively inspire the academic outputs.

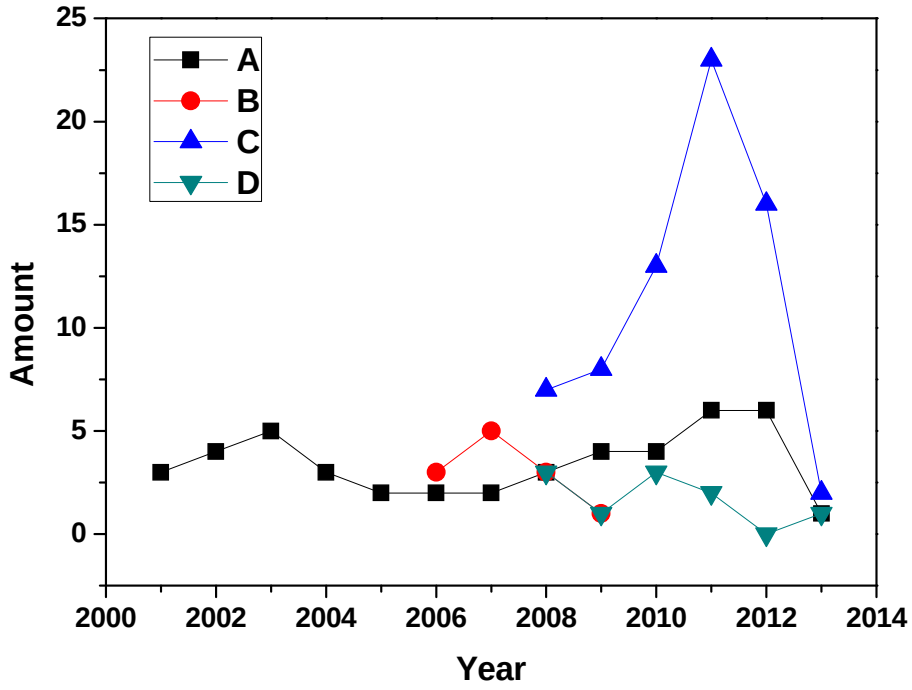


Fig.6-3. The Academic Outcomes of the Ph.D. Graduates

Sources: provided by the interviewees in stoy-telling.

6.2.3 Transformation from a Ph.D. student to a university teacher

As the last step of analyzing, the selective coding has been conducted based on the procedure and result of open coding and axial coding. The model is formulated to describe the adaption from the role as a Ph.D. student to a university teacher with concerns of the route in balancing the teaching and research as two of the main responsibilities in the initial period of professional socialization.

Based on the conclusion of the life stories, the categories are generalized and shown in Fig.6-4. Three controversial issues are concerned gradually with the professional needs as a university teacher, relationship among diverse responsibilities, and the puzzle of their career path in future. According to the assumption that the doctorate is primarily for research training, Labaree (2003) reminds that most doctoral

students in education have little formal training in education research before they start their Ph.D. studies, with their undergraduate and master's degrees usually in other fields or disciplines or focused almost entirely on education practice. Therefore, the training in doctoral study is usually concentrated on the Ph.D. students' thesis especially on the research methods applied in their thesis. Either the tasks of publication or participation in the research project provide the Ph.D. students opportunity to learn research methodology in practice. With the fundamental preparation, the methodology has also been applied in writing the dissertation finally. *"The basic education for a teacher is Ph.D. at the university now. Some of my colleagues, who don't have a Ph.D., think that they don't need a Ph.D. but it shows that they should have because they are too quick in considering questions. I think you really need to think for a long time before you do something. And that's the training in doctoral studies. There could not be only one route in doing something but people always try to find the only route as a beginner. It was not so easy to do it in social science which is not objective. Everybody could have their own opinions and every opinion could be right. The truth is very variable and you have to think about it a lot."*

From the role as a Ph.D. student to a university teacher, the professional knowledge and ability is shaped by the training in doctoral study programme in education. The compulsory responsibilities include also the teaching practices and publication tasks. Through the teaching practices, the Ph.D. students achieved the pedagogical knowledge of core subjects and teaching experience for adults. *"I think the teaching experience has helped me teach adults in class."* The doctoral training in the doctoral study programme in education is significantly needed in preparing a professional university teacher. Firstly, the teaching practice prepares the university teachers psychologically (the self-identification of the role, etc.) and the capability practically in applying the education theory into teaching at the university. "As a scholarly enterprise, teaching begins with what the teacher knows. Those who have to

teach, have to be above all well informed and steeped in the knowledge of their fields. Teaching can be well regarded only if professors are intellectually engaged." (Boyer, 1990: 23) Secondly, the examination task provides them the experience to master the knowledge of didactics and self-organizing especially on time-management as a staff working at the university. Thirdly, the cooperation with supervisors and other colleagues improves the cultural involvement in academic community of the higher education institutions.

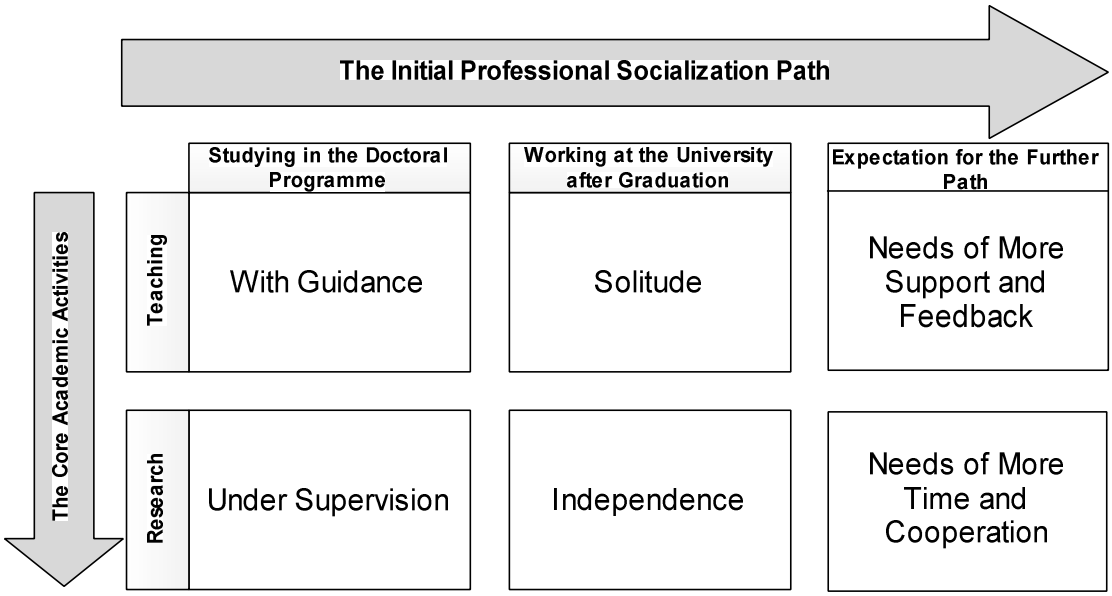


Fig.6-4. Matrix of Transformation from a Ph.D. student to a university teacher

Nevertheless, the route of further "graduation" (i. e. "lecturer (lector/asistent)", "assistant professor (odborny asistent)", "associate professor (docent)", and "professor (professor)" within the academic staff seems to be compulsory in Czech higher education institutions[5]. *"Regarding the career path in future, I know I should become a docent or professor one day."* However, it's hard to escape from the involvement of the academic community and institutional climate. *"Working at the*

[5] At Czech universities, "asistent" is usually a Ph.D. student or a fresh graduate of a doctoral study program; "odborny asistent" is usually a graduate of a doctoral study program with some teaching and/or research experience; "docent" has finished a doctoral program and has been awarded the title of docent after their work and contribution to science or scholarship had been scrutinized by an assembly of five professors and docents; "professor" has been pronounced a professor after being pronounced a docent (OECD, 2006: 101).

university is quite special and different from other companies. You have to behave well, polite and respective to the people with title of docent or professor in this system. I am the youngest one with only a Ph.D. title and I have to listen to everybody else. You don't need to listen to anybody when you are a docent. You are a star and you can do absolutely whatever you want when you are a professor. The system works like a ladder and you have to walk step by step without jumping to the position. And you can't change it no matter how clever you are. It's a slow moving. You have to understand how to behave in this community." For pursuing a higher professional position of the academic staff ranks in higher education institutions, the researches might be devoted more attention by individuals. Newly appointed academic staff gets short-term employment. For junior academic staff, their employment security grows gradually because the permanent contracts are only awarded with the appointment to senior positions. Additionally, there is another financial reason which would be the motivation to improve the research. "*You could get more from your project, supervision and publication besides the salary at the university. The basic salary was for teaching, organization and normal work. It will be a little higher when you get a title of docent or professor."*

The Ph.D. in Education graduates are supposed to be professionals in their specific field of study, for instance in a specific area of education immediately after their graduation. This article has captured the perception of role changing. It has focused on the initial stage of socialization of four Ph.D. graduates. The academic role is a very complex one: it includes leading in their fields, setting norms for teaching and research, curriculum development, and administration etc. (Kogan & Teichler, 2007). To meet the requirement of faculty, the academics have to overtake multi-responsibilities. The presented research reveals that the novice academics feel overloaded with teaching and administrative work on the contrary to their research activities. Simultaneously, they are in need of more guidance and support to get properly involved in the scholar culture during the initial socialization at the

university. The balance between teaching and research becomes a puzzle for university teachers in their professional path, at an early stage in particular. The teaching position at the university and plenty of academic freedom has attracted the Ph.D. graduates to get employed but the realistic limit of time leaves their teaching busy and hard in the first few years on professional path. *"The teaching and research could be connected with each other if you teach subjects similar to your research area at the university. It is the best situation. You could teach well because you know well about this area and you could improve your research during your teaching practice. But it is impossible for most of the teachers."* The additional organizational responsibility and the communication with experienced colleagues at the university make the academic position even more demanding. Although the academic research is emphasized by any university institution, "the excellence in research should never be allowed to become an excuse for underperformance in the educational tasks" (Ederer & Schuller & Willms, 2008: 2).

6.3 Ph.D. Graduates' Concept of the Academic Career

In this subchapter, the effect of doctoral study has been explored initially at the beginning of academic career of the Ph.D. graduates during the first few years of working experience. Firstly, it is really essential for a researcher in the field of education to develop the deep understanding of education as a science through the doctoral study of education. Secondly, it is also significant for their academic career to realize their role as a researcher in the field of education. Thirdly, the experience of doctoral study has been accustomed by them to do research as a life style. The interview of graduates brought plenty of fruitful ideas and opinions into the research which verified the meaning and value. As limited by the length of this article, the life stories of one graduate will be detailed in each of the categories as the materials in showing a complete picture of the experience of a Ph.D. graduate, who will be called "A" in abbreviation.

6.3.1 Acknowledgement of education as a subject of science

Science is supposed not only with “the paradigms of natural sciences” but also all of the disciplines “with a use of scientific method and a scientific habit of mind” (Audi, 2009: 334). During the interview, the first general problem of these interviewees is the unacknowledged idea of education as a subject of science before their doctoral study. Most of the Ph.D. candidates of doctoral study programme in education have already finished the master study programme of education or teacher training in specific subjects. In the doctoral study programme, the interviewees have been studying in the master programme specialized in education, English, Mathematics, Music, Primary Education, and Social Science. However, they have no idea about the academic meaning of education as a subject of science rather than a subject for teaching at schools. They gradually realize it through the learning process and research activities on education afterwards during the doctoral study.

The interviewee A chose to study in the subject related to education as the major when A applied for the university. Education has been identified as the preparation training for the future teachers rather than the science of education by A. And the influence of mother’s career helped A to make the decision. *“My mother has always been working as a teacher for about thirty years until now. Maybe my mother gave me some influence on the viewpoint of the job as a teacher which was a good position to maintain.”* As A remembered of the educational system for future teachers back then, there were special vocational schools preparing future teachers at elementary schools; master program at the university preparing future teachers at secondary schools and doctoral program at the university preparing future teachers at university after graduation in their educational system in this country. *“At that time, there were only master and doctoral program at the university without the bachelor program in higher education system of this country”*. The bachelor degree has been introduced into the higher education system from the educational reforms in 1991, then involved into the creation of a two-tiered system – bachelor’s and master’s – alongside the

traditional four-to-six year integrated programs, and modified under the framework of ECTS from 1999 in the Czech Republic (Clark, 2004). However, it took more years in accreditation the specific bachelor study programme at the institutional level.

In the master study programme of education, two subjects are always combined for each of the students. Meanwhile, there are some limits in the combination portfolio of subjects and information asymmetry for the applicants. In this case, *"I tried to search for the study programme in the fields related to English, Education and Social Science at the university. I expected to study in combined program of 'English' and 'Education' together. But it was said to be impossible. So I gave up 'English' which only could be combined with 'Mathematics' or else which I was not interested in. It was too late when I found it was possible actually later."* In balancing the choice between the subject of "English" and "Education", A chose the latter one accidently for her interests in exploring the meaning of education for the uncompleted knowledge of it as a science. *"I found 'teaching social science and education science for secondary school' programme which was only organized at this University. I was interested to have a try but I really didn't know what to expect. I thought it would be something very special but I didn't really know what it was about. I knew about 'Social Science' which was about religion, politics, economics, and psychology and 'Teaching Social Science' which was teaching the basic knowledge of these subjects at schools. I didn't really know what education science was for or how could I use it. But it was quite new at that time. So I was interested in it and tried it."* That's the process of A to choose the subject programme of education at the university firstly.

Then the first experience of learning education science has been started in the course of "pedagogy" in the master study programme. And the need of science in teaching has not been understood by A yet during studying in the master programme of education. *"Sometimes, I was really surprised how easy it was. I thought that everybody went to schools and they knew how a school worked and what a teacher did at a school. So I didn't think I need to have any experience to prepare for a job as*

a teacher. I just knew how it worked." After a period of study in master programme, the content of programme has been understood briefly. But the knowledge about education is still to be one of the subjects to teach at schools rather than the science. *"I thought I might not be able to find a job as a teacher after graduation. I found out in a short time that it wasn't very useful in work. 'Teaching education science' was preparing me to be a teacher of just 'Pedagogy' at special vocational schools for future teachers and the 'social science' was preparing me to be a teacher of Social Science such as Psychology, Politics, Economy, and Sociology and so on at normal secondary schools. As I knew, the first kind of schools was very limited in amount in this country. That's why I knew it would be a problem to get a job in this area. Then I was quite sad that I didn't choose other subjects."* The families are also disappointed with the situation after finishing the study of education. *"My mother believes that education is always the most important thing. However, she also said that I chose the wrong field to study and I should study English at that time."*

After three years' study in the master programme of education, A had no confidence in getting a job with the educational background. And the subject of education has never been recognized as a science until A found the opportunity to continue the study in the doctoral programme which was called the only chance to make the study of education meaningful and useful in career path. *"I think the only way to use it is to teach at the university."* However, it doesn't mean that the value of education science has been known by the interviewee before the study in doctoral programme. *"In my expectation of life as a Ph.D. student, I thought it would be a continual super life as in master program. I didn't expect to get a job there after graduation because it was impossible. In practice, the study is absolutely useless in anywhere else. So I did it just for fun to have a try. Then I considered this study as study just for an experience of myself. When I finished the study, I decided to continue my work as an English teacher. And I need to study English further because I need the Ph.D. title for the money (scholarship). The field of Pedagogy turned to be my*

pleasure for my interest in it."

However, it was not so easy at the beginning of A's study in the doctoral programme of education. It brought A to the "lowest point of life" at a seminar for the lack of knowledge and experience of methodology. *"There was a seminar for Ph.D. students from a professor who came to our university to have a discussion about the methodology with us at the beginning of the second year of my study. And we were told to have chance to send our projects to him in advance. He would assess it for us. So I sent it because I thought that I had a good project. And then I presented it at the seminar in front of about 100 people as well as three other people who were also studies at the second or third year of the doctoral program. He said to three of us that the project was rubbish; it was completely rubbish and had to be changed from the very beginning. For me, it was a normal project with a typical questionnaire for one school. But he said it was impossible to make questionnaire by only one person because a good questionnaire had to be made by at least ten people worked on it for at least ten years. So it was impossible for one person to make a questionnaire used in the dissertation."* The unsuccessful experience on the seminar inspired the passion and motivation to learn methodology at that moment. More importantly, education becomes a specific science in the learning process for the interviewee afterwards. *"That was the exact date when I started to go the library and read books to find how to do it about methodology actually. From that moment, I studied methodology as a devil. I read all of the books from the library."*

After graduation, A continued to be an English teacher as well as what she did at the part time of doctoral study. Thus it became the third year for her to work at the school. *"I taught English as a normal teacher there. I didn't feel very well when I was working there. In others' eyes, you seem to be a genius when you finished a Ph.D. but I wasn't. It brought nothing to my job. I thought I didn't need any education theory in my teaching. You don't need to think too much but just go the classroom and survive there. My colleagues also didn't understand why I need to study Pedagogy. It was*

quite easy to go to the class and teach English. What did I want to learn from it? I knew that there were a lot of things to learn education as a subject of science. But it was quite difficult to explain and remind their needs of it." It has been changed from the doctoral study of the understanding of education applied in teaching compared with the other teachers without the experience. *"I always think that the master program is preparing the teachers who will work at the secondary schools while the Ph.D. graduates will work at universities."* One year later, she got a position as an academic worker at a university. *"It is the best situation. You could teach well because you know well about this area and you could improve your research during your teaching practice."*

6.3.2 Identification of Ph.D. graduates as educational researchers

The identification is the process of self-concept in social perception and interaction according to the self-categorization theory. For a Ph.D. student who studies in a doctoral programme of education, it is the process for him or her to realize the role of researcher in the area of education by them along with the recognition of the subject of education as a science simultaneously.

As it has been discussed a lot about the learning experience in the master programme of A, the life after school took exactly significant role during that period. A was so disappointed with the reality of studying for the simplicity of learning requirement and hopelessness of the future career on the area of education that A chose to focus on other issues. *"I knew it would be a problem to get a job in this area. Then I was quite sad that I didn't choose other subjects. Faced with the reality, I started to focus more on the life after school to do all kinds of part time jobs. Although I didn't need to pay the tuition, I would like to earn money as much as I could for living, books and fun. I really earned a lot of money which supported me to study and live without the financial aid from family or others."* And the working experience also brought A the topic of thesis in master and as well as the doctoral study programme. *"For the second kind of job, I actually was not sure what we were*

doing at the beginning. We sold some certificate to companies which identified their quality organization. I found it was quite good when I worked for a while. I started to explore how it was possible when I found that they also sent these certificates to schools. And then it became my topic of dissertation afterwards. So it influenced me a lot. I worked there for two years. It gave me my topic. I wrote about quality certificate at schools, how they can use it and what they can do with it. I worked on how the certificate was used in education as my topic. The certificate could be used anywhere. That's good but also bad. Because education is very specific and also you have to use it specifically. When it was used at schools, you couldn't use everything written there. You had to really think about it. One more thing, customers should be satisfied with organization. But this was quite problematic at schools. So I decided to write about this as the main topic." The natural sensitivity to the problem of education has been internalized although A ignored the study of education in master programme.

However, there wasn't so significant to have the knowledge of doing research no matter during the learning process or research on the thesis in the master study programme. "W*e might have two semesters of methodology courses. It was held two hours and once a week. There were some not really good courses introducing some statistics from a young teacher at the first semester. I couldn't even remember her name. It was only about the beginning of statistics. We learned some basis knowledge about it but we didn't know why we need it, what it was for, or understand how to use it. And I didn't like the courses and forgot it after finishing the study. That's all we had in master program. Then we learned courses from an experienced professor who taught better at the second semester. But we didn't have enough time to learn about it because the pretty busy work of the teacher. We didn't get as much as methodology as we need it. I didn't have any idea of what was research when I finished master studies. I think it's necessary to have some knowledge about methodology in master studies. It is definitely needed more."* Obviously, it has not been emphasized so much of the learning of methodology in master programme of education as the doctoral study

afterwards. The reason could be interpreted by the lack of demand of methodology in master thesis. *"I didn't really have to use methodology in my thesis in master program. My master thesis followed the guidance of my supervisor and I did what she asked me to do. I saw her very often in master study. She told me what to do exactly and I did it. In my dissertation, I just used the same questionnaire of my supervisors' dissertation. Then I sent the data to some research center so that they did the statistics for me. I only needed to learn why I use this and why to do that. So I learned the theory of my topic and did what my supervisor asked me to do in methodology. I think I really didn't have any regular experiences in making research."*

Meanwhile, it is quite limited of the preparation in doing research either theoretically or practically before doctoral study of education. *"Regarding the learning we might have two semesters of methodology courses. It was held two hours per week. There were some courses introducing some statistics from a young teacher at the first semester. It was only about the beginning of statistics. We learned some basis knowledge about it but we didn't know why we need it, what it was for, or understand how to use it. And I didn't like the courses and forgot it after finishing the study. That's all we had in master program. Then we learned courses from another experienced teacher who taught better at the second semester. But we didn't have enough time to learn about it. Because the teacher was pretty busy as a professor. We didn't get as much as methodology as we need it. It is definitely needed more."* When the position was offered in doctoral study program of education, A proposed the thought of studying further to shape the career on the right way. *"I was told that I might stay and work at the university during my study."* Even it didn't come true, but it became an idea for future career at the University for A. *"If I could survive for one year, I would have a try. So it seemed more like study for fun to me. Then I talked with my supervisor about it and asked if she could be my supervisor in the doctoral program. Then she found it was possible and accepted me. We made the first plan of my study in Ph.D. program together. She gave me positive feedback about the plan.*

Then we decided to do it together." The acceptance from the supervisor became the first step to be a Ph.D. student in doctoral study programme in education. *"The topic was so new that nobody understood it in the field of educational science. So I built my dissertation on it and it was quite good. Because it was usually easy to write something people didn't understand it."* The entrance examination followed in the second step. *"The examiners were quite interested in my topic which was something new to them. They believed that I had to change it because there were a lot of problems in the proposal which was not perfect. But they thought I could make it better. Finally they accepted me easily because it was good to give me a chance to do it."*

When the learning process has been started, the second round has come of the methodology course in the programme. But it was much better than the first round in the master programme. *"In the doctoral studies, there were only methodology courses lasted one semester and one huge exam at the end of the semester from the professor which was perfect. The courses were held once in fourteen days. I learned more from the course in the doctoral programme than the master programme, but it is still not enough. The courses were only on quantitative method like statistics. That's all. But I still had no idea of what it was for and how to use it about the quantitative methodology. We didn't have qualitative methodology at all."* There are rather limited knowledge learned from the course rather than A need in the research of dissertation. *"The biggest problem for me was the research methodology in my dissertation. I had little knowledge or experience in doing a real research before. So when I opened the project at the start, I found it was totally different from my thesis of master studies. I changed the methodology of my dissertation about four times. And I had to learn it from the real beginning."* As it has been mentioned above of the stimulation from the bad experience on the seminar, A started the learning of methodology very hard. *"It looked like the worst experience but at the same time the best one I had. That was the exact date when I started to go the library and read books to find how to do it about*

methodology actually." Thus, the most important thing learnt of methodology was from A's self-learning from literature in the library companied with the research of dissertation afterwards. *"But I think the most important thing we did was reading a lot of books for what I need for my study. It would be much easier if I knew something in advance, because I had to spend a lot of time in studying in library. We really had to look for books to read and learn by ourselves. I think 80% of what I learned about methodology was from books."* And it was almost the similar situation with other colleagues in the same study programme. *"I thought all of us had little knowledge about methodology, so we made a lot of mistakes in our research. We tried every way I found and gave up the wrong ones gradually. That's how we found the right one actually. It was not an easy job."*

Through the proceeding of study, there is the chance to attend the academic conferences which is the requirement to a Ph.D. student as well in the doctoral study programme. *"I also attended some conferences. I presented there and got some of my contributions published there. And there were usually seminars for Ph.D. students at the conference. It was great and I loved it."* As well as the publication on journals, there are some requirements with specific credits from academic outcomes. *"The requirement of publication pushed me to publish works but I would still try to do that even without the requirement. I think it's necessary to get their articles published on journals which would provide some evidence to the academic committee to make the judgment of your research. It was also important for university who would get money for the publication. For the students, you could really learn how to write academic articles correctly before your dissertation."* After the foundation of learning in the above ways, the dissertation was built on the basis of the knowledge of methodology finally. *"For my dissertation, I changed the methodology three times at least before the state exam. The examiners said it was great on my state exam. I think it was quite easy to answer their questions for me. They just said OK to us and let us go anyway. The last year's study and the final defence of my dissertation were quite easy for me to*

find the right way and do the research as I planned."

The publication has introduced A to the new job when A was working as an English teacher after graduation. *"For the current job, I actually didn't find it by myself. I applied there three years ago through the website. One day, I received an email from my boss and she invited me to visit her for an interview if I would like to. I was totally in a shock when I was reading her email to invite me and ask me if I would like to work there. Maybe she found my CV and read my papers then when they needed somebody work there. I think the academic outcomes always help you when someone doesn't know you. They could find out how you worked in the past and what assessment was from others. The publication could be a proof of your valuable research."* During the working experience, A got the biggest harvest in the real researcher's position. *"I think I learned the best part of methodology after I worked here. I got the most valuable information in the first year. When I came to this university, I was very surprise that so many people could do statistics. I found the programs on computer were quite easy actually if you learned it. So maybe ten people could do it at this university where I worked now. I think I learned much more on research when I worked at the university in the first year than I learned as a Ph.D. student in the three years' studies. The University where I worked now is smaller and there are much younger teachers working here mainly on my age compared with the University I studied in during the master and doctoral study. And the teachers use much better methodology in doing research. I felt that I was very stupid when I arrived here. I found many of them could use the software to do statistics. But I can't. There are three people who showed me and taught me how to use it. I don't need to be embarrassed to ask them because they are also very young. We could communicate with each other without pressure just between young peoples. You could ask what you don't understand and ask them to explain it again. I think it's the best way to learn something. That's much easier. And I learned how to use it now and I found it was quite easy."*

And the cooperation among colleagues made A feel more like one of the researchers in an academic community. *"I really like the academic freedom as a researcher working at the university. It is my favorite thing at the position. Now I am working with my colleague in the same office together on a project. And it saved both of us a lot of time through cooperation. We have different responsibilities in doing research. I do more methodology in the project. We will have publications together as the co-authors. We have a plan of a bigger project which will involve ten people together. So I will work with them properly."* In current university, research has been much more emphasized than teaching. *"They care more about research and the articles, because it will bring more money to university by articles. It is quite a pity that they don't care about teaching much. For the current job, I have to write two articles and attend one conference at least per year besides teaching. You will lose some money if you can't finish them. One of my articles will be published in one or two months this year."* From the process of studying and working at the university, the belief as a researcher has a great shift from the increasing knowledge in mastering the methodology in doing research. The responsibility has been one of the compulsory tasks for A automatically and naturally.

6.3.3 Confirmation of educational research as a lifestyle

During the story-telling, the distinct impression was on the transformation of the social role of A's mind from a normal girl with the dream to be a writer to an academic researcher with the caution of the education to the next generation. Meanwhile, the way of living life has been shifted by the transformation individually.

As the beginning of the story of A, the situation of family has been briefly introduced by A. *"I am not from a rich family. Sometimes I had to help with my father who operated a family workshop. But I always don't like it at all."* The financial situation became a motivation for A to explore a job to do for the willing to be independent from the support of families afterwards during master study. When A was a child, A was possessed with the dream to be a writer. *"When I was a child, I wanted*

to be a writer. I wanted to write books and I wrote at least ten books when I was studying at elementary school. They were just about simple things, just a reflection of my life and dreams. I kept them as a memory of my childhood but nobody ever read it anyway. So I wanted to be a writer then and I kept with the dream to be a writer until 18 years old." When A found that the performance was always great at the elementary school, A continued the study in the grammar school which was a preparation study for universities. *"You could get theoretical information about anything you are interested in and then you decide what to learn at the university. But it was only general education on everything together without a specialty in my grammar school. We had to be quite good at all subjects but not very special in anything."* As a good student, A was supposed to study at the university although her parents and younger brother only finished the secondary education in the family. *"For my mother, education is always the most important thing. And my parents ask me to study as long as I wish and they would support me financially if I need."* During the study in the grammar school, A also found the interest in social science including the language and social education which became the first juncture for A to become a Ph.D. student of education as discussed above. *"I chose German language, English language, Czech and Social Science in the leaving-school examination. Czech was for everybody. I always like to learn foreign languages and I am always interested in Social Science."*

Then A gave up the dream to be a writer and chose to study in the master programme of education with the expectation to be a teacher after graduation. *"I was started to think about my job at the end of grammar school. At that time, I was not sure if I would be a good writer. And it's not easy to make money as a writer. So I was thinking that maybe I could be a teacher. I thought the job was nice as a teacher and I really enjoyed it when I worked as a teacher after graduation. So I think it was a good decision."* Without a sufficient knowledge of the study programme, A fell into a disappointment of the learning and turned to focusing on the part time job. *"Faced with the reality, I started to focus more on the life after school to do all kinds of part*

time jobs. So I decided to pass my exams as quickly as possible without trying my best to study and went to work on weekend and holiday during my master studies. I didn't care about the achievement in study so much but just passing the exams. Although I didn't need to pay the tuition, I would like to earn money as much as I could for living, books and fun. I really earned a lot of money so that I was absolutely independent from the financial support of my family. Firstly, I went to England every holiday to be an au-pair and learn English in English families. I really wanted to live with someone who was native speakers to improve my English." And the other working experience was not connected with education at all. *"I didn't think I need to have any experience to prepare for a job as a teacher. I just knew how it worked. So the working experience was just for making money without any other longitude consideration."*

However, A got the topic of doing research as the master and doctoral thesis during the part time job accidently which also introduced A back to the research field gradually. *"I was good to have the freedom from my supervisor. I was really happy with the situation. I studied only for fun. And she didn't expect too much from me. We both had a try to do it and it would be OK whether I could finish the study or not for both of us. But I passed it finally. I could do what she wanted me to do. And I could made money which was very important for me. My supervisor didn't want anything else from me except what I should do in the program such as passing the exams, writing papers, attending conferences and let me do what I wanted. The best point was that she trusted me and supported what I decided to do. She told me that she would help me if I would like to do some research related with hers. Or she allowed me to do what else I wanted to do. It would be totally up to me if I would get a pass or not. That's what I really need. I changed my topic about three times but she didn't lose patience or got upset but supported me to do what I really wanted. For me, it was great. There was still another teacher who always asked me to think about the research more. 'You started from the point of 60, but you should start from 0.' She pushed me a lot in studying further. But it was also perfect."*

With the shock from the experience of seminar, A started to focus on the learning especially on methodology of doing research. *"It looked like the worst experience but at the same time the best one I had. Because he was the person who finally came to you and said that you were not good and needed to think more about it. That was the exact date when I started to go the library and read books to find how to do it about methodology actually."* Through the transformation of the focus in living, A changed the way of personal life as well. *"I lived alone in a single room at the dormitory which took me about twenty minutes to the faculty by tram. In this doctoral program I lived in my own world. I didn't really keep in touch with anybody else. I only met other students at conferences or seminars we had to attend. I only worked and went back home to work on my thesis after work. That was all of my life."* To meet with the requirement of credits from academic outcomes, the Ph.D. students need to get their articles published on the journals or presented on the conferences in the area of education. "*There was no problem for me to finish all of the tasks in publication because I wrote them as my free time activities. I enjoyed it. And I always asked my supervisor where to send the article when I finished. That's what we discussed mostly about. I had one cooperated article with my supervisor which connected her dissertation and my thesis in master program together. We used the same questionnaire and I just combined the result from her schools and mine. It was quite easy to do that because they were the similar data from the same questionnaire."*

After graduation, A worked as an English teacher but still kept on doing research in spare time. "*I also did some research for my supervisor at the school I worked as an English teacher."* Until A became an academic worker at the university, the real working experience as a professional researcher started. *"I don't know everything about what I am going to do at the position. But I thought it should be some responsibilities with researching and teaching mutinously. However, I found that there was not so much time for doing research. I taught and dealt with some administrative work most of the working time."* However, the role made A to try the best to work out

more publications as a junior employer. *"Working at the university is quite special and different from other companies. You have to behave well, polite and respective to the people with title of docent or professor in this system. I am the youngest one with only a Ph.D. title and I have to listen to everybody else. The system works like a ladder and you have to walk step by step without jumping to the position."* As a lifelong career, it is the only way to get promotion in the system as the researcher at the university. *"Regarding the career path in future, I know I should become a docent or professor one day. I will still have to work hard to write some articles and do the research, because that's the most important thing for the university. However, it's a long journey to get one article published. For example, one of my articles will be published in one or two months this year. But I really have to work during my holidays because I don't have time to do it at university. It needs a long time to do the research and write it. And you have no idea if the article is accepted or not for at least four months usually. And then it took about three months to print it after it was accepted by the journal."*

Based on the life stories, three main aspects of significant effect have been brought from doctoral study of education to the academic career for Ph.D. graduates. These three aspects are connected and interacted with each other through the proceeding of doctoral study. Figure 6-5 is a schematic drawing that illustrates the processing interaction of the three factors of effect on the academic career of Ph.D. graduates. From doctoral study to academic career in education, it is a re-socialization process for Ph.D. students in three factors including the subject, object and activity of doing research.

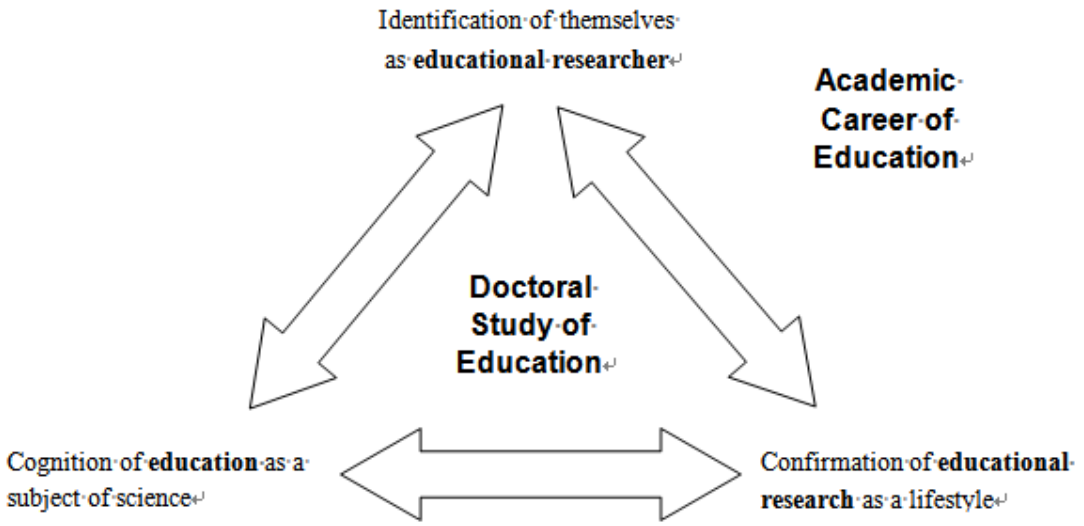


Fig.6-5. The processing interaction among the three factors of effect on academic career of education as Ph.D. graduates.

In this subchapter, the life stories have been demonstrated of Ph.D. graduates from the doctoral study programme in education. It has been specially emphasized the effect of doctoral study on their academic career. The interactive triangle relationship has been concluded as a model in analyzing the life stories. Besides, the statistics of academic outcomes have been complemented to show the effect of doctoral study on the academic career of Ph.D. graduates in quantitative point of view. As well as the role of doctoral study in academic career of Ph.D. graduates, this thesis is the first step in exploring the developmental and transformational path in a researcher's life. More outputs are supposed to be revealed in the following research.

Summary

Based on the life stories generalized preliminarily from the experience of Ph.D. graduates, two domains are categorized under three themes of doctoral study in education. On the one hand, the domain of professional ability is the visible identity in which concludes the knowledge and skill achieved from the doctoral study. On the other hand, the domain of scientific disposition is the invisible identity including the

character and value acquired from the doctoral study. Meanwhile, three themes are specifically the responsibilities of Ph.D. students involved in the doctoral study programme in education. Firstly, the learning responsibility is basically required through the process especially on self-learning. Secondly, the teaching experience is necessarily needed within the study programme as a Ph.D. student as well as a university teacher. Thirdly, the academic research is essentially concentrated in conducting the dissertation. The theory is provided as follows to show the impact of the doctoral study programme in education on the perspective of Ph.D. graduates.

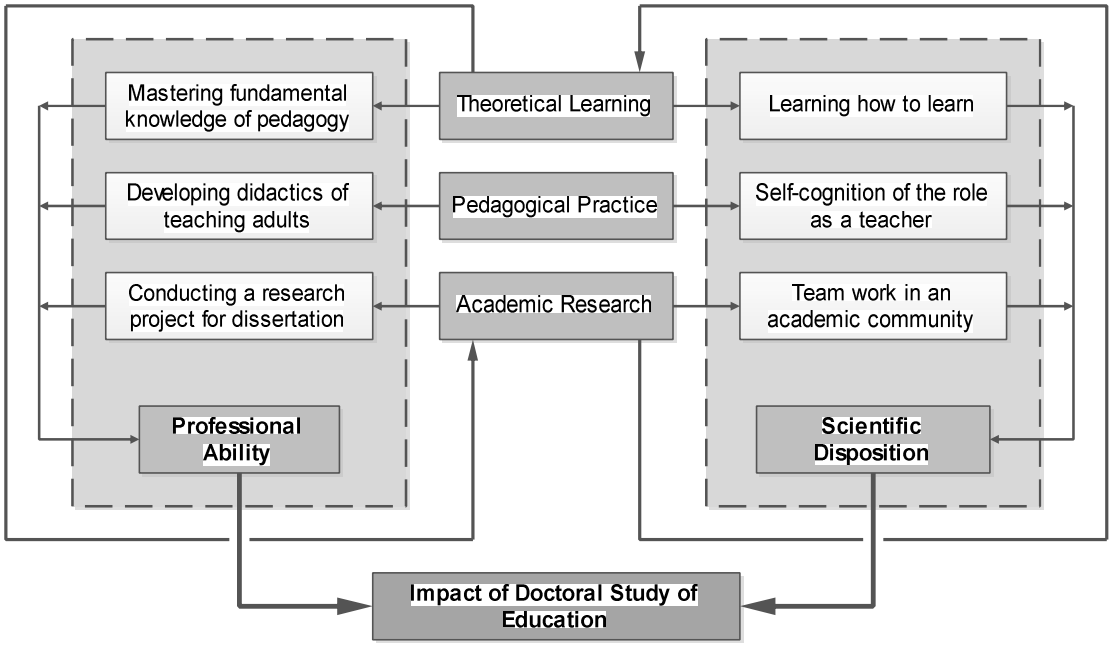


Fig.6-6: Model of Impact on the Professional Path of Academics from the Doctoral Study of Education

There are two distinct stages in most doctoral programs: coursework and dissertation (West et al., 2011). For the doctoral study programme in education, there is another important process involved which is the teaching experience. In processing the three responsibilities of learning, teaching and writing the dissertation, there are three content of study including the “theoretical learning”, “pedagogical practice” and

“academic research” in the doctoral study programme in education. Under the theme of “theoretical learning”, the professional ability of “mastering fundamental knowledge of pedagogy” is one essential category in evaluation the impact of doctoral study while the scientific disposition of “learning how to learn” is the other identity. Under the theme of “pedagogical practice”, the categories are the ability of “developing didactics of teaching adults” and the disposition of “self-cognition of the role as a teacher”. Besides, the criteria of evaluation is concerned with the ability of “conducting a research project for dissertation” and spiritual character of “team work in an academic community”.

The two domains show the visible and invisible identities brought from the doctoral study programme in education to the Ph.D. students and then reflected in their career path to the scholars. It is the advanced period of evaluation the impact of doctoral study programme on the perspective of Ph.D. graduates compared with the concept of “academic match” defined by Hoskins and Goldberg which is compared the correspondence between “student goals and reasons for pursuing the degree” and “ the program focus and the curriculum” (2005: 183). It is also proved to be an appropriate way to evaluation the doctoral programme of education.

As a conclusion, the doctoral study programme took an essential role in cultivation a future researcher as the first milestone of academic career path in the area of education. In this thesis, the criteria of evaluation the doctoral study program in education have been created and verified by the viewpoint of current Ph.D. students in The Czech Republic and China. The image of their perception on the ideal and reality of doctoral study of education has been presented. Moreover, based on the experience of the Ph.D. graduates, a route of growth has been exhibited how a Ph.D. student is prepared in the doctoral study programme for the academic career. The effect of doctoral study on Ph.D. graduates is exposed in the interpretation of their life stories. This route of evaluation followed in this thesis is to examine the quality of doctoral study programme in education indirectly by exploring the perspective of the

participants. However, perception equals incompletely to the reality due to the asymmetry of information. Thus, there is nothing discovered of the reality but only the perception of respondents. Besides, there are only few samples involved in this thesis compared with the total population of Ph.D. students or graduates either in the quantitative research or qualitative research. The findings are only based on the perception and experience of the respondents in this thesis.

7. DISCUSSION

In the previous research, the Ph.D. students in education are believed that they have little formal training in education research before they started their doctorate, with their educational background in other disciplines or on educational practice (Labaree, 2003). In this case, the concept of “doctors of education” is defined as stewards of both the field of study and the enterprise of education (Richardson, 2003). This thesis is consistent with the assumption that the doctorate is primarily for research training. The doctoral candidates should be expected to do creative scholarly work and outline what they feel are the psychological, theoretical-methodological, and institutional contexts required for creative work (Bargar & Duncan, 1986). Centralized by the aim of preparing the future academics, the knowledge, ability and value are supposed to be devoted in cultivating the Ph.D. students as well as the educational researcher. As this chapter, the findings are interpreted into deeper level by formulating the model of doctoral study programme in education based on the theoretical analysis, empirical survey and the study experience; by exposing the barrier of the reality of doctoral study programme in education both in The Czech Republic and China inspired by the perception of current Ph.D. students and graduates; and by the attempt to recommend the available initiatives to improve the quality of doctoral study programme in education.

7.1 Model of the Doctoral Study Programme in Education

It has been indicated that one of the most essential aim of this thesis is to formulate the model of doctoral study programme in education. The model is a combination of the finding by the theoretical analysis and empirical survey including the quantitative and qualitative approach. As it has been concluded in the theoretical part, the doctoral study programme takes the role of transformation from a Ph.D. student to a researcher. Specifically in the discipline of education, the Ph.D. graduates perform as both a researcher and a teacher frequently. Therefore, in the programme, the key objective has been identified of doctoral study by three core activities

including learning, teaching and research in education. In each of these three responsibilities, the significance has been emphasized on the learning of research methodology, the teaching of basic subjects of education, and the research for the dissertation based on the life stories of Ph.D. graduates. It turned out that the Ph.D. students are required to develop a deep understanding of pedagogy as a discipline, to recognize the role as a teacher as well as a researcher. And the self-acknowledgement process prepares the Ph.D. students on the way to be the academics in balancing the responsibilities of teaching, research and others.

To formulate the model of doctoral study programme in education, the orientation is to prepare the future researcher in education as well as university teacher; the core is to focus on the transformation of Ph.D. students in professional ability and scientific disposition cognitively and affectively; three essential pillar is apparently are the research, dissertation, and supervisor as the key activity, key objective, and key instructor. According to the perception of current Ph.D. student, eight variables are the most influential criteria of the doctoral study programme in education. Commonly appraised by the respondents in The Czech Republic and China, it is important to have a clear target to be reached in the study programme; to take exams so that to gain sufficient knowledge of subjects for students; to get comment of publications from supervisors; to be supported in the research activities by supervisor; to get help beyond study from supervisor; to work equally together on the dissertation with supervisors; to be assessed fairly; and to be confident in completing the study.

Based on the interpretation of the life stories of Ph.D. graduates, the process of learning in the doctoral study programme in education has been explained from the “condition”, “action/interaction” and “consequences” specifically during the “learning methodology of research”, “teaching basic subjects of education” and “research for the dissertation”. Firstly, “learning methodology of research” is one of the most significant parts of the doctoral training process. The emerging literature on preparing doctoral students in education has emphasized methodological sophistication as the

key to improving education research. Based on a collection of anecdotes and experiences, simplistic approaches to methodology hinder a deep understanding of what it means to make and justify a claim about educational phenomena (Schoenfeld, 1999b). Secondly, doctoral persistence increases within programs that recognize the challenges associated with transitioning from structured coursework to unstructured dissertation writing by building a connection between coursework and skills needed to execute the dissertation (de Valero, 2001; Spaulding, & Rockinson-Szapkiw, 2012). Mullins and Kiley found that for examiners there was a tacit link between candidates' knowledge of the field and their ability to do substantive, well-justified research (2002). The doctoral dissertation is the capstone to formal academic training of the doctoral study programme in education. There is an emerging consensus that the perceived lack of quality in education research stems from problems with doctoral preparation.

Combined with the interpreting above, the model is formulated with three main activities, including the learning of theory, pedagogical practice and academic research with the research-centered orientation. The core role of supervisor is identified in the whole study experience of Ph.D. students. Besides, the significant output of the doctoral study is the cognitive achievement performed in the writing of dissertation and the affective influence behaved in the self-acknowledgement. The Ph.D. students are transformed through the process into a well-prepared educational researcher or university teacher. The framework is shown in the following figure 7-1.

It's a theoretical attempt of the model primarily in this thesis. Meanwhile, it's also just a first step in this creative area of thesis by following the path of study and work experience of Ph.D. graduates practically. In the following researches, the model is suggested to be verified as the fundamental criteria in evaluation the perspective of other stakeholders involved in the doctoral study programme in education. It is hard to proof that the quality of doctoral study programme in education is closely reflected by the perspective of the respondents in this thesis. It is an indirect route to evaluate the

quality compared with the direct measurement of the academic performance of Ph.D. students such as the doctoral thesis, quotation and so on. As the limit of researcher, these indicators are far from being reached without the language ability of Czech. Moreover, the longitude interview of the Ph.D. graduates is expected to verify and modify the model in future.

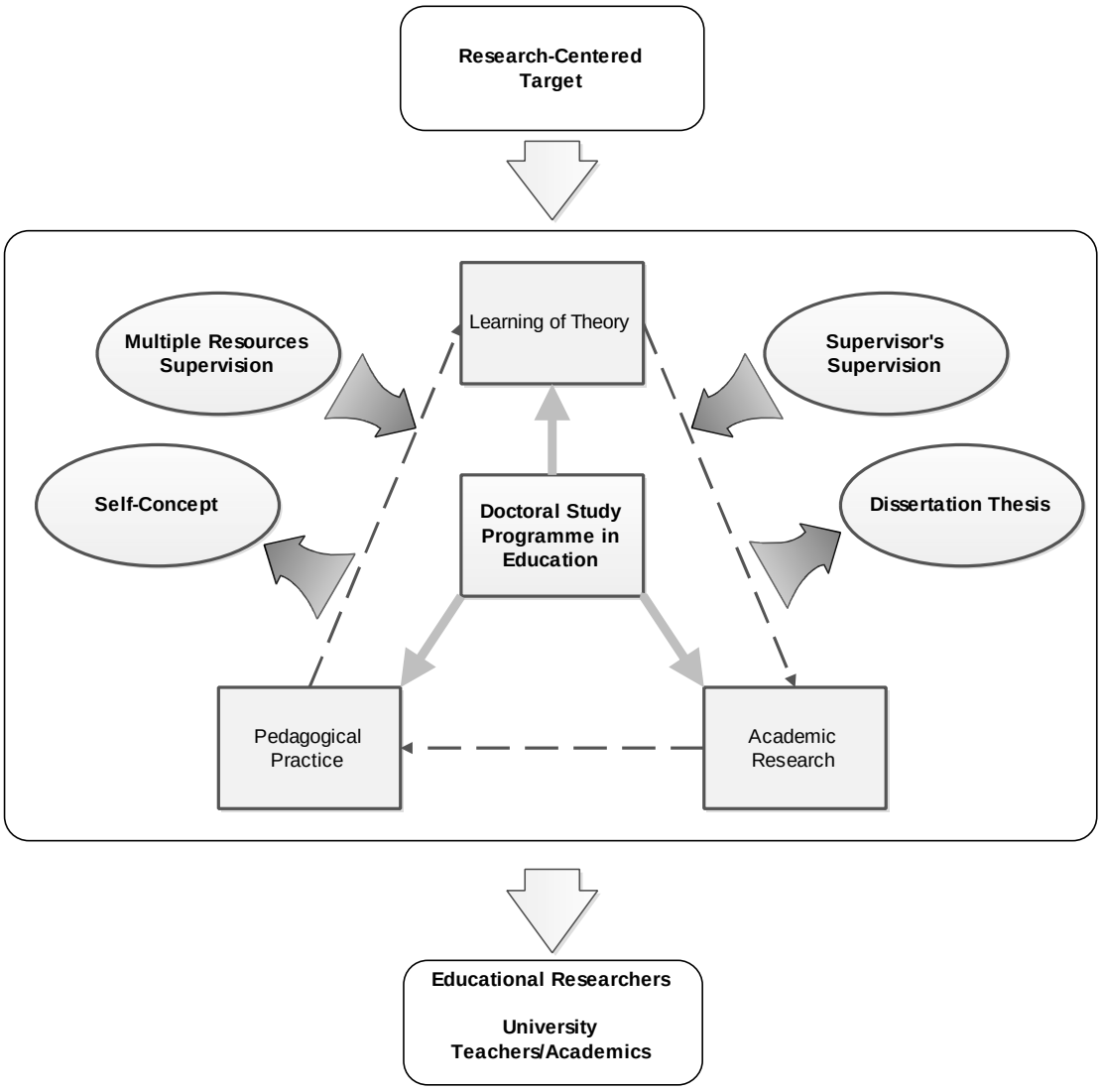


Fig.7-1. Model of Doctoral Study Programme in Education

7.2 Implications

In general, no matter the current Ph.D. students and Ph.D. graduates are satisfied with the doctoral study programme in education which takes them on the way of

academic life. And the criteria are verified in both of the two countries. Nevertheless, in this subchapter, the obstacles are highlighted with the proof of the experience of Ph.D. students involved in the doctoral study programme in education. It has been verified the essential role of supervisor both in the quantitative survey and qualitative inquiry. However, the Ph.D. students claim the absence of instruction in the learning process and teaching practice.

On the one hand, illustrated by the result of survey, the reality of criterion is much less evaluated than the ideal of criterion which is the needs of supervisor in following their learning output. However, the Ph.D. graduates don't think that it is necessary for the supervisor to guide their learning but they complain the absence of instruction either from the supervisor or examiner. As it has been mentioned in the theoretical discussion, one character of Ph.D. students in education lacks sufficient knowledge in educational research. However, it is relatively uncharted discussion of how to prepare scholars in research methodology (Tashakkori & Creswell, 2009). Most of them are beginners to start the journey to be an educational researcher. Besides, there are more and more younger candidates who enter the doctoral study programme. The guidance is essential for them to be inducted into the academic climate. The courses of research methodology are suggested to be provided for Ph.D. students in the first year so that they could be acknowledged the fundamental theory and methods of education research. On the other hand, as another component activity in the doctoral study programme in education, the Ph.D. students are assigned to teach some basic subjects as the pedagogical practice. However, there is no sufficient guidance in preparing the teaching or evaluation the students' performance in teaching. Furthermore, it is still a dispute if the supervisor should take the responsibility of guidance. The experienced teacher might be more suitable to be involved in the instruction of teaching for Ph.D. students in preparing the role of university teachers. And the evaluation system is counted into the integral organization of the doctoral education institutions regularly.

As the current practice in doctoral education, there is a team of supervisors who take the responsibility of supervision the Ph.D. students. It might be a possibility to shape the doctoral study programme into a more effective way for Ph.D. students and supervisors as well. Overtaking multiple responsibilities, the supervisors are rarely taking care of the three main activities of Ph.D. students as sufficient as the students' needs. It's reasonable to believe that more instructors should be involved in the cultivation of Ph.D. students in a doctoral study programme in education.

Additionally, it should be noted that this thesis has examined only the doctoral study programme in education based on the samples respectively in The Czech Republic and China. Although the criteria are proved to be valid in both of these two countries, the results couldn't be taken as evidence for other doctoral study programme. Besides, the results are verified to be better in the survey of sample in China than in the Czech Republic. The culture background the designer who is Chinese might cause the sensitive difference. In the qualitative research, life stories is produced as an increasingly popular form of narrative-based inquiry in fields of education and other social studies by the purpose of inquiring into lived experience, providing rich detail and context about the life, and analyzing of how people make sense of their lived experience in the construction of both individual and social identity. However, individual life is not free-floating anymore but socially constructed and contained by their location in the social world, the university. Otherwise, individuals are inevitably constructed as victims, powerless in the evolution of their lives. Unfortunately, we are unable to expand our survey into a larger scale in these two countries as the practical limits. However, the attempt may offer some insight into the doctoral education.

8. CONCLUSION

This thesis aims to examine the quality of doctoral study programme in education with concentration on the theoretical discovery the conception of quality and formulation the model of doctoral study programme in education to empirically evaluate the ideal of doctoral study programme in education on the perspective of Ph.D. students and the practical reality in implementation the study programme in the Czech Republic and China. The mixed methodology has been applied with triangulation convergence model design and combination of the quantitative survey and qualitative interview.

In the theoretical studies, the concept of quality has been conducted with the transformative view. The role of doctoral study programme has been identified on the enhancement and empowerment of Ph.D. students. The evaluation follows the framework of needs, implementation and impact with three specific questions in empirical research.

In the quantitative research, the data are collected by the mean of questionnaire with the purpose of uncovering the perspective of current Ph.D. students on the ideal and reality of doctoral study programme in education. The findings of questionnaires show that the criteria are verified approximately both in the two countries although there are differences in the extent of agreement on some of the items for the cultural diversity. Nevertheless, the reality of doctoral study programme is investigated separately on whether it is fulfilled the ideal on their perspective. The results of correlation analysis identify that the reality is well accepted by the respondents similarly in both of the doctoral study programme in education of the two countries.

In the qualitative research, three core findings are generalized by the life stories of Ph.D. graduates. The doctoral study programme in education takes the role as the cognitive preparation for professional path and the self-concept on academic career. Besides, the effect of doctoral study programme in education on Ph.D. graduates is concerned with the initial professional socialization on their occupation as university

teachers. Integration with the findings from quantitative and qualitative inquiry, the model of doctoral study programme in education has been formulated with the emphasizing of the centralized position of dissertation and the supportive role of supervisor in the study programme combined of the theoretical analysis and empirical investigation on the perspective of stakeholders.

Additionally, some strategies have been aroused to eliminate the distance between the ideal and reality of doctoral study programme in education. In this way, all of the aims of this thesis have been achieved based on the efforts with the expectation of contribution not only to broaden new ideas of the concept and model of quality in evaluation the doctoral study programme in education but also to bring the students' voice to decision-makers in practical institutions as an evidence of future policy.

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APPENDIX

Questionnaire used in the main study of quantitative research[6]:

QUALITY OF THE DOCTORAL STUDY PROGRAMME IN EDUCATION

Dear Ph.D. students in doctoral study programme in education,

The objective of this questionnaire is to find out more about the quality of doctoral study programme in Education on the perspective of current Ph.D. students. Your view of the ideal state of programme quality (eg. what a doctoral study programme could/should be) and the actual status of programme quality (eg. what is in fact a doctoral study programme like) is seriously concerned. In the questionnaire, the quality of the doctoral programme of education has been specified to be evaluated by a set of criteria according to your opinion and your past experience. All of your answers are greatly appreciated. All information is obviously confidential and anonymous. Thank you for your cooperation.

Mgr. Yanyan Li.

Introduction

Instructions for completion are as follows. To evaluate the quality of doctoral study programme in education, two independent columns of the squares are used in evaluating these criteria. We're trying to figure out which of the criteria are important (in the "ideal state") for assessing the quality on your perspective and which are fulfilling these criteria (in the "real state") based on your experience. In the appropriate box, please rate each criterion with the mark from 1 to 5.

The column "ideal state" of doctoral study programme in education:

1. This criterion is not at all important criterion for the quality of doctoral study programme in education.
2. This criterion is unimportant criterion for the quality of doctoral study programme in education.
3. This criterion is neither important nor unimportant criterion for the quality of doctoral study programme in education.
4. This criterion is important criterion for the quality of doctoral study programme in education.
5. This is very important criterion for the quality of doctoral study programme in education.

[6] The questionnaire has been translated into Czech and Chinese respectively in the practical survey in the doctoral study programme in education of the Czech Republic and China.

The column "real state" of doctoral study programme in education:

1. This criterion is not at all fulfilled in the implementation of doctoral study programme in education.
2. This criterion is unfulfilled in the implementation of doctoral study programme in education.
3. This criterion is neither fulfilled nor unfulfilled in the implementation of doctoral study programme in education.
4. This criterion is fulfilled in the implementation of doctoral study programme in education.
5. This criterion is very fulfilled in the implementation of doctoral study programme in education.

Quality of the Doctoral Study Programme in Education			
		Ideal	Reality
1	The whole study process is initially introduced to the new students properly at the beginning.	□	□
2	The study programme has a target designed to be reached.	□	□
3	To meet with the requirement of taking compulsory exams, the Ph.D. students gain sufficient knowledge of education as a scientific discipline.	□	□
4	The supervisors are experts of the field in which the Ph.D. students seek their doctoral dissertation.	□	□
5	The supervisors continually comment on all publications of Ph.D. students.	□	□
6	The supervisors support Ph.D. students actively to integrate into the research activities to discover their strengths and weaknesses.	□	□
7	The supervisors are always willing to help Ph.D. students even in matters not related to the study directly.	□	□
8	The doctoral dissertation is equally the result of the work of PhD students and the supervisors.	□	□
9	The requirement of taking compulsory exams is demanded rather than imposed on Ph.D. students during the doctoral study.	□	□
10	The Ph.D. students always know the reasons that lead to a particular result of assessment.	□	□
11	The assessment methods of Ph.D. students' study are used fairly.	□	□
12	The Ph.D. students believe that they will complete the study programme.	□	□