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Using Qualitative Research Methods to Cope with the Educational Complexity

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This paper explores the gap between qualitative research methods and teacher practices in the perceptions of student teachers. Despite the consensus among teacher educators about the crucial importance of attentive listening, in-depth observation, and in-context interpretation for teacher functioning, student teachers often challenge the relevance of the methodology courses for their training program. The current study analyses student teachers' views regarding this gap and proposes explanations for its causes, which mainly stem from the expectations they have when they start the training process, and the sense of uncertainty and ambiguity they experience during the program. The main argument presented in the paper is that involving future teachers in qualitative educational research not only lays the foundations for shaping their professional identities as reflective practitioners, but also prepares them to cope more effectively with the complexity of the educational field. In view of the findings, a change in proposed to contemporary teacher education program: to add an open and courageous discourse about the complexity of the educational field. This trend would direct more attention toward nurturing students' abilities to cope with the ambiguity and uncertainty of educational settings as a necessary component of these future teachers' professional proficiencies.

Keywords: complexity; qualitative research; teacher education; teacher practices; uncertainty.

Introduction

This paper examines student teachers perceptions regarding the relation between research and practice in the field of education, as were surfaced during a methodology course, entitled 'Qualitative Research in the Work of a Teacher' (henceforth QRWT). This course invites students to conduct an in-depth and critical examination of the educational context, by using qualitative research in authentic field situations. During these classes, students often challenged the relevance of research methodology courses to teacher education process and the benefits of educational research in everyday teaching practices. In other words, a gap was revealed in students' perceptions regarding the linkage between educational research and educational practice. The aim of this paper is to examine students' attitudes toward the gap, and analyze the nature of their experiences regarding this issue, in an attempt to implement the insights in future of teacher education programs.

Theoretical Background

Traditionally, there is a distinction between research and practice in academic institutions (Schön, 1987), while university faculties and departments view schools of professional education as inferior though based on systematic scientific knowledge produced by research in a variety of disciplines. This approach makes a clear distinction between research that produces knowledge and the practical arena where the research is applied, in effect, making research in the practical framework irrelevant. Professional competencies are viewed as the application of scientific knowledge to practical problems, in essence a sort of science based technique, while practice serves as an opportunity to apply scientific knowledge after theoretical learning has taken place. Schön (1987) uses colorful images to illustrate this attitude; to know 'what' is the height of scientific knowledge, far above knowing 'how,' which is compared with treading water in the 'swampy lowland':

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> In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solutions through the application of research-based theory and technique. In the swampy lowland, messy, confusing problems defy technical solutions. (Schön, 1987, p. 3).

Nowadays, this dichotomy between theoretical and practical knowledge in the academic setting also manifests itself in advanced degrees studies. Many universities in the U.S., Great Britain, and Canada offer two separate tracks for obtaining a doctoral degree, one for practicing teachers and another for researchers in education, and, therefore, two different doctorates in the field of education: Ed.D. and Ph.D., respectively. The Ed.D.is intended to prepare experts who can solve complicated problems in education using existing knowledge, in contrast to the Ph.D., which has a more theoretical side and is intended to prepare students for careers in academic research (Shulman, Golde, Conklin, & Garabedian, 2006).

Furthermore, decision makers who set educational policy view research based on experience in the field and knowledge based on academic research as having different statuses, clearly preferring positivist research findings that include generalizations and predictions (Evans, 2007). Even though educational policy makers express ever increasing expectations that teachers make greater and more significant use of the extensive knowledge derived from empirical research (Fenstermacher & Richardson, 1993;Levin,2004), as time goes on, the attitude that 'pure science' finds it difficult to provide professional schools with practical knowledge is gaining momentum, along with the concern that sociologists and cognitive psychologists bring limited benefit to the field of education (Wiliam,2008).Practicing teachers claim that research has little relevance to educational practice, that academia pays little attention to real questions in the education field, and inter alia, that it uses positivist empirical approaches to study a multi-layered, complex reality (De Vries & Pieters, 2007;Vanderlinde& van Braak, 2010). Shkedi (1998), describes the situation as a crisis of trust concerning professional knowledge and terms the encounter between educational research and practice as one of skepticism and criticism, arising from the rift, the lack of communication, and profound cultural tension. As a result, a gap has been created between the academic and the practical arenas (see also: Hemsley-Brown & Sharp, 2003), and the relationship between them is described as 'limited collaboration', 'disconnected', and sometimes even 'belligerent' (Hargreaves, 2007; Schön,1987;Vanderlinde& van Braak, 2010;Wandersman et al., 2008; Yu, 2011).Janusz Korczak relates to this issue in his inimitable way, and describes the feelings of a teacher who is rooted in educational reality:

> The author of the book will prove his erudition with many references and footnotes…Those same hypocritical aspirations, the pleasant (popular) lies, the advice that cannot be put into practice. The educator must…must… must… the educator feels disdain toward the author, who, sitting contentedly in his room beside his comfortable desk, dictates instructions, without having direct contact with the jumping, noise-making, bothersome and undisciplined lot… What is the purpose of annoying him with lofty scientific visions? (Korczak, 1960, pp. 3-4).

The duality between educational research and daily practice in the education field, can be explained bythe different ways in which researchers and teachers perceive the educational act (Labaree, 2003). Researchers possess knowledge that is analytical, intellectual, universal, and theoretical; moreover, they tend to relate to education in a dualist manner, making a distinction between educational knowledge and skills, that is, between intellectual and practical abilities. In contrast, 'teachers' knowledge about the education field as normative, individual, particular (personal and specific), and experimental (Bulterman-Bos, 2008).The knowledge produced by the theoretical studies conducted of researchers in education is not based on experience and not utilitarian for teachers in schools. One possible way to bridge this gap is by using clinical educational research, which is carried out by researchers, who are also teachers with teaching experience, and thus capable of providing in the education field with a valid and useful body of knowledge (Bulterman-Bos, 2008).Action research, as a method that embodies the synergy between research and action(Whitehead, 2009), when is carried out by teachers, not only advances field based research, but also increases teachers' involvement in educational endeavors and concretizes the way research and practice are intertwined (Vanderlinde & van Braak, 2010).According to Kemmis (2009) action research aims to be a practice-changing practice, since it changes people's practices, their understandings of their practices, and the conditions under which they practice. Whitehead (2008) suggests the term 'living educational theory' as an avenue for developing theories in the education field; though analogous to the traditional manner of building dialectical theories on the basis of theoretical conceptualizations, during this process, individuals examine how their personal experience affects their teaching in the environment in which they work and function.

This point of view prompted many reactions (Wiliam, 2008; Noffke, 2008; Morris & Hiebert, 2011),one of them claimed that researchers and teachers have different points of view due to the different roles they fulfill in the education field, and on the basis of organizational structures, the limitations of their purviews, the daily demands of their work, and professional incentives (Labaree, 2008).These lead to different modes of professional activity and different ways of thinking about education. Therefore, the way to bridge the gap is by acknowledging the distinctions and showing respect for both fields of expertise, and promoting constructive dialogue between teachers and researchers. For teachers involved in a web of pedagogical goals, social contexts, and teaching, research can suggest theoretical perspectives for their activities, while stressing both the unique and the routine aspects of their classrooms. Therefore, cooperation between teachers and researchers will enable teachers to enrich their professional practices (Labaree,2008).

The perception of the gap between research and practice relates also to the nature of the teacher's role. Silberstein (1998) distinguishes between two basic concepts about teaching: one, 'teaching as an applied science' – a profession in which the teacher applies and processes information that educational research and other sources have made available, and the other, 'teaching as a practical reflective occupation' – a profession in which the teacher is called upon to suggest solutions for dilemmas, in contextual situations characterized by ambiguity, uncertainties, and complexity. According to the second concept, the essence of teaching is the interaction between students, teacher, and learning environment. Thus, reflective teachers must be open and sensitive to the reactions of those around them, and assume that their responses have explanations and justifications that need to be revealed and understood. Teachers do not work on the basis ofprotocols or recipes that have been dictated by external sources; rather, they conduct themselves on the basis of intelligent conception of a given context (Olson, 1992; Schwab, 1969).In keeping with this distinction, professional teachers are not satisfied with the sagacious use of existing knowledge in the field of education; they also share the new knowledge, which they create to suit their needs, for the benefit of their professional community(Hargreaves, 2007).In light of the above, it may be inferred that knowledge about qualitative research tools is essential for the routine functioning of reflective teachers who must identify facts and actions, and put this understanding to use when considering, judging, and drawing conclusions, and working toward the appropriate educational act.

A similar perspective is articulated by Council for Higher Education regarding his guidelines for the study of research methodology in teacher education programs 'research literacy in education and teaching… includes tools for the professional development of the teacher, such as reading and understanding research papers, and the ability to carry out research in the classroom, for example, action research, case studies, evaluation studies, surveys' (Ariav, 2006, p. 8). This guideline considers teaching asan 'activity based on theoretical-research based knowledge and the wisdom of practical-reflective practice; it is not an occupation of apprenticeship nor is it based on recipes for implementation' (Ariav, 2006, p. 2). It reinforces the connection between educational research and practice as regards the learning and professional development of teachers, and stresses the significance of reflective discourse for developing professional attitudes about the essence of education and teaching. On the basis of these ideas and following scholars recommendations (Munn, 2008; Vanderlinde & van Braak, 2010) the course 'Qualitative Research in the Work of a Teacher' was developed and integrated in the teachers education program.

The Context of the Research

The course QRWT was designed for the teacher education program that prepares those who already have academic degrees with the aim of addressing the special requirements of this group. The students in this program are older, as compared to those who are working toward a B.Ed. degree; most of them are married and have families, and are in a more complicated stage in their lives, since they are changing their professions. The majority have undergraduate degrees, while some have master's degrees and a few have doctorates; some of them have considerable professional experience (Donitsa-Schmidt & Weinberger, 2014). They approach their learning with a high degree of awareness about the choice they have made to work in this field, although sometimes they still have misgivings.As part of their previous programs of study, they have been exposed to quantitative or qualitative research methodologies, depending on the disciplines in which they received their academic degrees. Naturally, they come with preconceived ideas about education based mainly on their own experience as students or parents of students. Programs that train those who already have academic degrees are of shorter duration than the traditional four-year course of study, and are conducted for the most part over a period of one or two years.

The pedagogical and didactic courses provide the practical component of the program and concentrate on the teacher's encounter with the environment in which they work, including students, colleagues, parents, curriculum, and teaching materials. Here the focus is mainly 'looking outward,' that is, the student functioning opposite the elements of this environment. Yet the need arose to create a special course that would balance, to some extent, the internal and external perspectives of the students in this particular teacher education program.

The main goal of the course is to encourage students to conduct parallel to their observations of the educational field – an 'in-depth internal observation 'into the recesses of their souls and the teacher's modes of action in the educational context in which they function, into their goals, values, and beliefs, using the tools of a qualitative researcher, which is the unique aspect of this course. Our main assumption is that a systematic and in-depth analysis of the authentic encounters with the education field develops students' awareness of the complexity of the educational situation, while the use of qualitative tools promotes their sensitivity and ability to distinguish the details of phenomena and events. Teachers who conduct themselves as qualitative researchers – making careful observations of what is going on; paying close attention to the discourse in their environments; using an interpretive approach to analyze the information they gather, which is linked to their knowledge and moral attitudes; and finally, making decisions about the appropriate educational act based on their insights – are professional teachers who function in tandem with their unique contexts.

Thus despite its name, 'Qualitative Research in the Work of aTeacher,' the course is not methodological in essence. Instead, it demonstrates the use of qualitative research skills in pedagogical contexts, as a way to develop the teacher's basic abilities of observation, listening, and interpreting –essential skills for the educator who is a reflective professional (Schön, 1987, 1988) and cultivates a qualitative stance towards the world. At the end of the two-semester course, a final paper is submitted on the research exercise conducted during the year. It is also presented at the 'colleagues' discussion' conference, where each student shares with those present the insights they gained during the course of the year. These events provide students with the opportunity to practice conducting a discussion of educators and adopt the language of professionals talking about their work. An experience of this type can help these students develop the attitudes and modes of discourse and action of educators, and lay the foundations that will guide them in shaping their professional identity as reflective practitioners (Schön, 1987). In keeping with this approach, another goal – not directly addressed in the course objectives – was added: strengthening the link between two realms, educational research and practice in the field of education (Ostinelli, 2009), which are frequently viewed as separate, or even conflicting, entities.

Research Question

How do students in a teacher education program for academics view the relation between educational research and educational practice?

Method

This is a qualitative-interpretive study that views information as a variable, which changes according to the circumstances and the interpreter. It attempts to investigate reality on the basis of the implications provided by the participants, i.e., the subjects and the environment (Denzin & Lincoln, 2008). The decision to use this approach was based on the belief that research questions dealing with students' conceptualizations about the gap or the link between educational research and practice require an in-depth and systematic analysis of student perceptions and attitudes, as expressed in their statements about the course in which they participated. However, unlike most qualitative studies that examine a phenomenon in detail but focus on a small number of subjects, the present study relates to data gathered from a large number of students who took the course over a long period of time with different instructors. Yet, it does not offset the attempt to delve deeper into the significances cited by the participants as regards their attitudes about the subject of the research.

Population

The research population included more than 1,000 students who took the course in 2004-2012, with eight different instructors. Data was collected from 562 students, who filled out teaching feedback questionnaires at the end of the year, and from group interviews conducted at the end of the 2008 school year with 68 of these participants.

Data Sources

The data was gathered from two sources: teaching feedback questionnaires and group interviews. The two research instruments, written answers to open questions in the feedback questionnaire and oral responses during a group interview, may be regarded as complementing one another. The combination of direct information gathering during the group interviews conducted by the course instructor and indirect documentation from the standard teaching anonymous feedback questionnaires used in the college, which included students' statements about the course's learning and teaching processes, was intended to provide as much in-depth information as possible that would clarify participants' attitudes about the subject of the research.

A. The *teaching feedback questionnaires* utilized in the study were the standard instruments used by the college, which are sent to the students at the end of the school year by means of the Internet. The feedback consists of two parts; one is a closed questionnaire built on a Likert scale in which students relate to various aspects of the course's teaching and learning processes, and the second comprises several open questions that ask them to describe the processes they experienced in the course and what they got out of the course. For the purposes of this study, all student statements on the second, open part of the questionnaire were collected. During the years 2004-2012, teaching feedback questionnaires were sent out to a sample of 32 classes that took the course QRWT. These classes were chosen at random by the college's academic secretariat out of all the classes taught at the college. On the average, about 60 percent of the students fill out feedback questionnaires.

B. Four *group interviews* were conducted at the end of the 2008 school year with the participation of all the students who took the course that year. The interview was conducted in the form of an open discussion with the respondents and centered around one broad question, which encouraged them to relate to processes that took place in the course – from their point of view – and what they derived from these experiences. There were about 20 students in each group and two interviewers. Each group interview took about an hour and a half and they were recorded and transcribed.

Only statements relevant to the research question – the relationship between educational research and practice in the education field –were gleaned from the overall student responses to the course feedback questionnaire, which allowed us to relate to the data as indirect information. In contrast, the group interviews were conducted face to face during a discussion, which enabled participants to relate directly to the issue and to what fellow students had to say; therefore, it was only natural that the treatment of the research question was more focused. Combining these two types of sources actually strengthens the validity of the research.

Data Analysis

The analysis unit selected was any statement by a respondent, which expressed an idea that related in some way to the general research question. The data, which included relevant sections from the feedback questionnaires and the transcribed interviews, were submitted to an interpretive content analysis in three stages. First, an intuitive process was conducted to categorize the ideas that emerged from the students' statements – from the bottom up (open coding)(Bowen, 2009). On the basis of this coding, major themes were formulated using an'emic' approach (Denzin & Lincoln, 2002). In the second stage, the themes were mapped by finding the connections between them and categories of the analysis were determined. In the last stage, the analytic process of grouping all the statements in their respective categories was carried out from the top down. An analysis of this type offers broad interpretation and a variety of meanings for the research topic: a system of conceptualizations was developed, which expressed the students' response patterns to the research question, and the study's narrative line was put together (Strauss & Corbin, 1997).

Ethical Aspects

Information was gathered only after respondents completed the course, the majority of it anonymously and indirectly in order to reduce any interference with respect to the respondents' statements. There was absolutely no personal identification of the respondents, either during the information gathering phase or in the presentations made in this article. The analysis involves ethical considerations and judgment; therefore, it was conducted by the author, and validated by two judges. Nonetheless, since the teaching of the course was supervised over the years by means of conscientious team work, the implications derived from the analysis were based on insights from student reactions to the course obtained by all the instructors involved.

Findings

The analysis of the data gathered during the years from the two sources reveals three unique aspects addressing student teachers experiences with qualitative methods, constituting the following categories: attitudes toward the relation between research and practice in education, challenges and difficulties encountered with the qualitative practices and a gradual process of forming insights.

Attitudes toward Research and Practice in Education

An analysis of the students' explicit references to learning about and using qualitative research tools revealed that this course contributed to their education in several ways. First, some of them noted that it allowed them to acquire new knowledge with practical value: 'The course changed the way I think about qualitative research. In the first semester, when we learned about the tools, observation and interview, it learned a lot, which I was also able to use in other courses. 'Some of them stressed unequivocally that the knowledge and skills they acquired enhanced their ability to look at the complex reality of the educational field: 'The research allowed me to see that the truth is made up of many points of view.'

In addition, for some of the students the important value of the course was realizing the contribution qualitative research can have for practical educational work, in concrete contexts: 'Research is an important factor in education. The articles discussed in class were interesting and very relevant for me. I find that they help me deal with the difficulties I encounter in the classroom. 'Some of them gave examples of the connection between research and practice using concrete experiences during the course, which helped them gain significant insights: 'The most important contribution of the course was the opportunity to take a problem from the field, explore it using theoretical tools while receiving guidance from the instructor and feedback from colleagues, and then devise a practical solution, which I put it into practice. 'These quotes indicate that some students, during the course, succeeded to link theory to practice during their experiences at class (see also Katsarou & Tsafos, 2013).

Furthermore, some of the students also described meaningful processes of attitudinal change, which they experienced while implementing the research assignments that were part of the course: 'I began my research in a certain direction and believed that there was nothing there. Then I looked at different ways and found things that I hadn't intended to arrive at. This made me stop and look at the work I was doing in the class from within.' Others described important processes they experienced, which included strong feelings and long-term lessons: 'The process I experienced was interesting and challenging. I found it fascinating to do the research; I was drawn to it. The course, mainly the work I did throughout the year, transformed my attitude toward teaching and toward myself.'

Challenges and Difficulties Encountered with Qualitative Practices

Analyzing the statements made by the students, also revealed the challenges they faced and the difficulties they experienced during the course addressing variety of factors: the complexity of messages, feelings of ambiguity, many demands throughout the year, and the undermining of previous attitudes about research methodologies. First and foremost, the course challenged students: 'It is a difficult course; it's difficult to understand and complex. One of the more serious courses, if not the most serious one I took at the college. 'The ideas presented are complex and required that students, in addition to understanding the principles, develop an educational consciousness. Moreover, the course is a process and it is experiential in nature and demands routine work throughout the year: 'The course had a lot of assignments, which was difficult for me.' This also indicates that the learning methods in the course were not standard. Students are required to conduct research, which included data collection, systematic and interpretive analysis of the data, and the construction of field based theories, while remaining aware of its conceptual relevance to practice. Thus, the insights formed during the learning process, some of a personal nature, also shed light on abilities, motivations, and aspects of students' personalities. It was like asking them to gaze into a mirror, which they could use to look within themselves. Some of the students saw this as a challenge: 'It was very interesting, with challenging assignments, and creative. After carrying out the research, I felt that I learned a lot about myself. 'Some of them experienced difficulty: 'As a student, it was a burden, but important… during the reflection stage, I was frustrated with the article by Silberstein, but in the end, the process did something for me.'

The second difficulty that the students describe is specific to those with academic degrees who are retraining as teachers and also illuminates the first issue. The modes of action and study in the course did not coincide with the routine practices of these students's teacher program: 'The processes we experienced did not match my expectations.'

These students already have undergraduate or graduate degrees, which they did not earn in colleges of education, but rather in other universities or colleges. In these academic institutions, the studies, especially on the undergraduate level, are based on the structuring of a basic knowledge base in a certain discipline, while employing cognitive skills for internalizing concepts, ideas, principles, etc. (see also: Josselson, 1999). When they come to an academic college of education seeking a teaching certificate, they encounter an entirely different type of teaching model, which is much more process oriented and relative. Since most of them enter the programs with the attitude that teaching is applied science(Clark & Peterson, 1986), they expect their course work to provide them with a sort of 'compilation of protocols and rules' that guide the educator's modes of action, and equip them with recipes, practical advice, and response models that can be applied immediately in the education field: 'The course did not give me anything because we dealt with topics that were too general and discussed philosophical questions; we didn't learn about new and effective things that I could apply in the field'. Presumably, these students consider educational research and work in the field as two different, if not diametrically opposed, occupations (Labaree, 2008).

Another cause of student difficulties was prior knowledge about research methods, which they had acquired during their previous studies. During their academic course work, most of them had been exposed exclusively to positivist quantitative research methods that formed the basis for structuring their understanding of research paradigms (see also: Daiute & Fine, 2003). When they learn about the qualitative, naturalistic approach, they sometimes find it difficult to relate to it as legitimate research: 'Coming from the sciences, my first reaction was a very negative one toward the 'nonprofessional approach of the humanities,' i.e., research that does not have a control group, or isolation of variables, where the researcher is not neutral… the topic of qualitative research is new for me and so is the idea of teachers conducting research while working.' This type of learning requires a change of attitude, and as we all know, that is a complex process requiring a major investment of resources. The processes they undergo may, therefore, be described as undermining, resulting from the lack of correlation between the conceptualizations they bring with them and the messages to which they are exposed in the course.

These difficulties and gaps which the students feel during the course lead to feelings of ambiguity, confusion, and uncertainty, especially among those who were not used to this type of learning experience: 'At the beginning I felt that the course was unclear, and that this lowered my level of attention. Till today, I'm not so sure about the purpose of the course. Although the lessons were interesting, but what do I do with them?'

Gradual Process of Forming Insights

Aside from the feelings of uncertainty, some of the students describe a gradual process of forming insights: 'From time to time, the material became clear and aroused thoughts and interest. 'For most of them, the turning point came during the advanced stage of conducting the research: 'I wasn't able to understand what the course was about during the first semester, but when we started the research, everything became clear.' For some of the students, the insight development occurred at a much later stage, when they were exposed to the variety of studies carried out by their colleagues in the classrooms, 'I only understood what the purpose of the course was during the conference in which the students talked about their research. At the end of the process, the penny finally dropped, when we collected everything we did during the year, the output and the insights were felt.' Some of the students also noted that the end-of-the- year conference, where they presented their research to all the students in the program, was the climax of the course: 'The climax was the conference and especially the case histories. I was very moved by the stories. 'One of the students who took the course phrased it: 'The contribution of the course cannot be seen immediately. It takes time to process and apply the tools discussed in the course. During the first half of the year, I didn't understand what I was doing there or why I had to invest any effort. When I did understand, I immediately became engaged. It was very appropriate for me to write a personal story at this time of my life, a real act of introspection. Now I understand what it was leading up to and I don't feel that I wasted the first half of the year.'

Some of the students felt that the vagueness of the first semester was actually necessary to further the process of meaningful learning: 'The vagueness of the preparation during the first semester was important. The research helped me get involved...'Remaining in the realm of ambiguity sharpened the new insights developed during the learning process, as if students created a new or remodeled order in things that had not been coherent or meaningful before. It is a very profound feeling, i.e., that significant learning has taken place, learning 'reserved' for those capable of handling rather high levels of ambiguity without feeling frustrated.

There were students who also stressed the value of the process and its contribution to their personal growth: 'It doesn't matter what you learn in the course, but what you get out of it. The course accompanied my teaching and gave me an opportunity to look at myself. It created a more organized framework. I had no problem bringing myself into it.' Here, too, the added value is 'reserved' for students who are prepared 'to commit themselves' to undergoing profound processes, to introspect without being anxious, and to benefit from a process of this type in an academic setting.

Discussion

The findings indicate that student attitudes toward the qualitative research and its connection practices in education are located on the whole continuum between recognizing the benefits of using qualitative research tools for routine functioning in the education field, and believing that they are irrelevant. Taking into account that from the outset, one of the goals of the course QRWT was to change students' concepts by illustrating the use of qualitative research tools in the routine work of a teacher, and consequently to narrow the gap in students' attitudes between these two realms, it may be concluded that this goal was partially fulfilled.

Nevertheless, the added value of the findings goes well beyond the evaluation of the course's effectiveness. Aprofound understanding of student attitudes, their sources and development, is of decisive importance in planning a teacher education program, based on the recognition that their conceptions are oriented toward routine work in the present and their professional development in the future.

As noted, some of the students do not think that knowledge about and experience with qualitative research tools can have any practical impact on their work in the field. These attitudes among education students, which are based on longstanding tradition in academic institutions (Schön, 1987), indicate the depth of the gap they perceive between educational research and practical work in the education field. How can this gap be explained in the context of the retraining program for academics?

The first explanation I suggest positions this gap – in the minds of academically trained students – in the tension between what they expect from the teacher education program and what they actually experience during the course of the program. The students' clear preference for courses they call 'practical,' such as those that deal with planning teaching outlines, developing evaluation methods, interacting with parents, or class management and leadership, expresses their expectations of acquiring knowledge and skills, which they consider useful for their work as teachers, during the teacher education program. This reflects the attitude that teaching is an 'applied science' based on routines of behavior or bureaucratic practices, which can be learned theoretically, practiced, and applied directly in the field (Clark & Peterson, 1986). According to this view, there is a 'correct answer' for almost any issue that arises in the education field, and the expectation is that education programs will expose students to these solutions, in a systematic, structured, and explicit manner. In practice, however, the reality these students encountered during the course QRWT was different. Education was presented as a practical reflective occupation in which the teacher must have expertise in understanding the environment in which they are working and be able to solve complex problems (Clark & Lampert, 1986; Silberstein, 1999). According to this outlook, teachers base their actions on an analysis of the educational situation, including its various components, make judgments and choosing between alternatives, and moral determinations, make a decision about the appropriate educational act on the basis of due consideration, rather than a collection of routines or 'suggested' protocols (Elliott, 1991; Olson, 1992; Schwab, 1969). The attempt is not to bring practitioners' practices into conformity with external theorists' theories, but to have practitioners be theorists and researchers – to give practitioners intellectual and moral control over their practice (Kemmis, 2009).

Another explanation, to students' perceptions addressing qualitative research could be the learning modes and activities in this course, which exposes the students to a fairly significant amount of ambiguity. It involves long-term processes spread out over the academic year that include many complicated assignments, and the gradual structuring of personal insights and meanings while at the same time making progress in the implementation of the research and confronting relativistic knowledge. In addition, there is the requirement of active intellectual and emotional involvement and sometimes a certain degree of personal exposure as well. Most of the students found this to be a new type of experience, something they were not familiar with from their previous academic milieus (Josselson, 1999), which aroused objections. This difficulty was compounded by their having to contend with new conceptual frameworks such as post-positivist research paradigms and methodological standards of qualitative research, which often demand a radical conceptual shift.

Students with academic degrees, who were exposed solely to quantitative-positivist paradigms during their previous studies, find it difficult to internalize the principles of the qualitative paradigm and accept the different genres of qualitative research as legitimate educational research (Daiute & Fine, 2003).

Given the description and analysis of the disparity between some of the students' expectations of the teacher training and what they are confronted within reality, the difficulties they described, the complex feelings, ambiguity and opposition may be understandable. As noted before, the findings indicate that some of the students succeeded to deal with these challenges. By carrying out a personal research assignments, they developed a deeper understanding of the educational context being examined, which led to the formation of a coherent world view that linked research and practice. These findings are consistent with prior studies which indicated that teacher students can change their educational beliefs (Ax, Ponte & Brouwer, 2008; Kitchen & Stevens, 2008) and improve their educational practices after meaningful engagement in qualitative research projects (Katsarou & Tsafos, 2013). Yet, to many students the course did not help to bridge the attitudinal gap between research and practice in the education field, and they felt ambivalent, confused, and frustrated. Consequently, the following question need to be asked: How should we relate to the difficult feelings expressed by the students who took this course?

In my opinion, these feelings are part and maybe even necessary for the professional education process. Lee Shulman (2005) argues that without feeling pressure, fear, and danger, at least to a certain extent, it is doubtful whether new, meaningful learning can take place in any area, all the more so in professional preparation. In the education field, as in other professions based on human interactions, the professional is required to function in a given environment that characterized by constant changes and complexity (Davis & Sumara, 2005; Davis, 2008).Schools are dynamic, multi-dimensional, interconnected organizations that based on connections between people, therefore they are unpredictable settings and far from equilibrium(Kuhn, 2008). A certain degree of uncertainty and ambiguity is an inherent part of the activities in educational field. Hence, acquiring expertise as a teacher cannot be founded solely on theoretically based knowledge, skill acquisition (Daiute & Fine, 2003) or traditional experimental and positivistic methods (Morrison, 2008). Teacher preparation must include experiences in ambiguous situations where decisions need to be made, that require students to profoundly examine and understand the context in which they are working. This notion of 'teacher as researcher', as originally developed by Stenhouse, views learning as a personal and reflective creation of meaning from the cultural legacy, for the purpose of taking wise and intelligent action in the circumstances of life (Elliott & Tsai, 2008).

Based on these ideas, I suggest to add a missing component to contemporary teacher education programs -an open and a courageous discourse about the complexity of the educational settings, using concepts of the complexity theory.' Complexity and education may be brought together because in the language of complexity, such human cultural settings, productions and institutions as educational endeavour are complex and dynamic' (Kuhn, 2008, p. 174). Rather than seek for ways to reduce this complexity, we should begin with acknowledging that human settings and activities are necessarily complex, human beings are self- referential and reflexive, and their enterprise is responsive and participative. Qualitative research methods, ways of thinking and modes of action can help teachers in searching for meanings, by conducting in depth and critical examination of their educational context viausing qualitative methods (Halquist & Musanti, 2010; Hemsley-Brown & Sharp, 2003). This recommendation relies ontwo assumptions: a). Ambiguity and uncertainty are integral parts of the qualitative research process (Lieblich, Tuval-Mashiach, & Zilber, 1998) and the educational profession, b). The complexity theory can be used by teachers not only for analyzing the characteristic of the educational reality, but also for developing complex practices, which required to promote their best educational acts (Osberg & Biesta, 2010).

Summery and Implications

Since the field of education is characterized by complexity and uncertainty, teachers' professionalism depends on their ability to exercise good judgment, choose among alternatives, and learn from their own experiences. This implies that teacher education programs should incorporate the component of qualitative research, fostering student teachers abilities to observe while paying attention to details, and listening attentively and seriously without being constrained by preconceived notions and social stereotypes - training the mind, the eye and the spirit simultaneously (Janesick, 2004). The QRWT course, presented in this paper, is one possible example how teacher educators can implement such practices in their programs. In light of Ostinelli (2009) in his comprehensive study that analyzes teacher education programs in five Western Europe countries, I suggest to link organically research knowledge with practical activities of teaching in the curriculum components.

This Confucian educational thought is a very important resource for reconstructing education in the wake of a neo-liberal ideology that shaped a pedagogy that has reduced the role of the teacher to that of a technician in educational system.

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