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Graduate Teacher Education as Inquiry: A case study

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Responding to the call for reform in American graduate teacher education programs, the authors of this paper examine the design of a teacher action research-based approach in which teacher inquiry lies at the heart of individual courses and the program as a whole. The authors report on the transformation of program graduates from teachers to teacher action researchers to teachers as agents for systemic change that occurs as teachers conduct a series of teacher action research studies in their classrooms. The interconnected nature of individual courses, the demanding but practical challenges, the substantial investment of time, the commitment to student engagement and achievement, and the changes that occur in the ways in which teachers think about teaching are among the important themes.

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Introduction

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In his millennial presidential address to the American Educational Research Association, Alan H. Schoenfeld lamented practicing teachers' lack of professional lives, noting the dearth of opportunities "for sustained and well conceived professional development" and identifying this problem as "one of the most important issues that we need to confront in the coming decades" (1999, p. 13). Levine (2005) examined more than 600 schools of education throughout the US and found graduate programs awarding degrees in educational administration *lacking* rigorous curricula, high admissions and graduation standards, expert faculty, strong clinical experiences, degrees matching the needs of candidates, and solid scholarship. He noted that most programs "seem intent on helping students meet the minimum certification requirements with the least amount of effort, using the fewest university resources" (p. 3). To counter what he describes as a "race to the bottom", he suggests the elimination

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of incentives that support low-quality programs, the adoption of quality standards, and the redesign of graduate programs in educational leadership.

Current reformers of American public school education agree on some goals, but are divided about what they see as the appropriate approach to reform. Zeichner's (2003) analysis of the viewpoints of three reform agendas—professionalization, deregulation, and social justice—suggests that they all agree on “the critical importance of teachers’ subject matter knowledge and the importance of providing a high-quality education to all students in a society that professes to be democratic” (p. 490). Berliner (2005) underscores the desperate need for the political will to address poverty if American schools are genuinely to raise student achievement among all children.

Cochran-Smith and Fries (2001) explicate the focus of the reform positions of the professionalizationists and deregulationists from simply the “evidentiary warrant”, which asks how teacher preparation and student achievement relate based on empirical evidence, to include the “outcomes warrant,” seeking the outcomes that define success, and the “political warrant” inquiring into the underlying purposes of schooling. The beliefs of two sides on the warrant are disparate. Professionalizationists relate teacher quality to student achievement for the evidentiary warrant, performance-based standards for assessing teachers for the outcomes warrant, and high qualifications of teacher certification for the political warrant. Deregulationists give little credit to teacher education as the basis for student achievement for the evidentiary warrant, assign students’ scores on high stakes tests for the outcomes warrant, and seek open hiring practices to include all who can raise test scores for the political warrant. Bullough (2000) notes, “The disappointment that flows from the grandiose visions of policy makers for massive, systemic, permanent and quick change blinds them ... to the modest kinds of successes that concern and please practitioners” (p. 132). He goes on to say:

There is still great potential residing in the careful study of children and of the communities within which they live. Undoubtedly the current emphasis on teacher action research opens up rich possibilities for studies of this kind. ... Teachers can and will invest heavily in reform when the problems they confront are recognized as legitimate and the outcomes promised or hoped for will make a positive difference in the quality of the educational experience had by children and enhance teachers’ learning. (Bullough, 2000, p. 144)

Committed to a professional view that empowers teachers to make the decisions needed to engender genuine student engagement, student achievement, and social justice, our colleagues within the Education Department at Moravian College, founded in 1742 and recognized as America’s sixth oldest institution of higher learning, proposed an entirely new graduate education curriculum to the Pennsylvania Department of Education. The Master of Education program with an emphasis on curriculum and instruction would, by design, empower teachers to begin to direct their own professional development through their systematic inquiry into their teaching and their students’ learning. We report here on the design of this program and the ways in which teacher action research lies at the core of individual courses

and the program as an interconnected whole, presenting participants' experiences and analyzing the institutional survey data they provided. We conclude by documenting respondents' changes in beliefs and practices, offering their assessment of the effectiveness of the graduate teacher education as inquiry approach and, finally, suggesting implications for ongoing reform in teacher education.

Promoting Democratic Inquiry

At the core of the Moravian M.Ed. Model for Professional Development is a commitment to the vision of universal education articulated in the middle of the seventeenth century by John Amos Comenius, Moravian bishop, father of modern education, and philosophical forebear to Moravian College:

Our first wish is that all men should be educated fully to full humanity; not any one individual, nor a few nor even many, but all men together and singly, young and old, rich and poor, of high and of lowly birth, men and women—in a word, all whose fate it is to be born human beings: so that at last the whole of the human race may become educated, men of all ages, all conditions, both sexes and all nations. (Comenius, 1957, p. 97)

Built upon this foundation is the notion, consistent with the beliefs of Comenius, Rousseau and Pestalozzi, that children (and, in turn, teachers) will learn best when they enjoy what they are studying and when they are actively engaged in activities rather than receiving transmissions ready-made from others. Of course, as Dewey (1997b) cautions, not just any experiences will do, but rather it is necessary for the Vygotskian "more knowledgeable other" to arrange opportunities for inquiry in such a way that experiences are educative, thereby leading to further educative experiences in an ongoing chain or spiral. Replacing traditional monologic transmissions of received and sanctioned knowledge, these educative experiences are ideally designed to engage the student in dialogic discourse that mediates self and society in the social construction of knowledge and what constitutes knowledge (Bakhtin, 1981; Freire, 2003; Habermas, 1990).

The Moravian model for graduate teacher education as inquiry is designed to foster the construction and dissemination of teacher knowledge through reflective practice in the cyclical action research tradition of Kurt Lewin in the US, the curriculum development context of Lawrence Stenhouse and John Elliot in Britain, the participatory action research approach of Stephen Kemmis and Robin McTaggart in Australia, and the more recent practitioner inquiry movements incorporating qualitative and case study methods throughout North America (Zeichner, 2001). We concur with Schön's assertion (1995) that:

The epistemology appropriate to the new scholarship must make room for the practitioner's reflection in and on action. It must account for and legitimize not only the use of knowledge produced in the academy, but the practitioner's generation of actionable knowledge in the form of models or prototypes that can be carried over, by reflective transfer, to new practice situations. The new scholarship calls for an epistemology of reflective practice, which includes what Kurt Lewin described as action research. (Schön, 1995, p. 34)

Facilitating an “epistemology of reflective practice” for teachers previously educated mostly through a transmission or banking model (Freire, 2003) would require our collective commitment to *conscientization* and a problem-posing or inquiry-based libratory education. At the programmatic level, this meant designing a series of educative experiences honoring teachers as intellectuals who, through the teacher action research process, would become agents for systemic change. Yvonna S. Lincoln (2001) reminds us, however, that the terms action research and constructivist inquiry are not synonymous, and that “at the level of commitment and action ... [there are] differences which bear noting”, including the former’s insistence on a willingness to change, the need to work collaboratively over a prolonged period of time to effect this change, and an exceptionally high level of commitment to the process of change (p. 130).

Stenhouse (1967), like Dewey and Vygotsky, notes that education in school contexts is most likely to occur when it is “conscious, planned by someone who recognizes his responsibility, and is persistently purposeful” (p. 60). Kemmis (1995) credits Stenhouse with recognizing the crucial role of the teacher as researcher, adding that:

... sustainable improvements in education cannot normally be achieved without teachers’ commitment to the intellectual and scientific task of researching their own practice, as a part of the wider process of improving the curriculum, the school, and the work of education for communities and whole societies. (Kemmis, 1995, p. 74)

Exploring Methodological Foundations

The Moravian model empowers teachers to inquire deeply into their own professional practice and to document and reflect upon changes in that practice over time through its interconnected structure of foundation courses, elective seminars, and thesis courses (see Figure 1). All degree candidates complete four required foundations courses in teacher action research methodology: “Teacher as inquirer”; “Teacher as researcher”; “Teacher as evaluator”; and “Contemporary issues in education”.

In “Teacher as inquirer”, one of the first courses a degree candidate encounters, participants are introduced to the process of reflecting on their own practice (Cole & Knowles, 2000) and of posing questions about specific aspects that arouse their interest. In examining the roles of inquiry and reflection, teachers write rich, factual accounts of school-related experiences and disparate, subjective reflections to learn the value of journaling and autobiographical inquiry as they experience the detail of their accounts and the insight of their written reflections. Most teachers have not encountered prior opportunities to document their practice in writing and to connect their instructional decision-making directly to published research studies. New insights are common here, with one teacher remarking that: “I learned so much about myself and my teaching style through the autobiographies and journals, which empowered me to teach in truly effective ways. I found my teaching voice!” Another teacher explains: “I plan to keep using my personal journal and to introduce one for my students. I have my master’s degree purpose figured out now and look forward to my future research”.

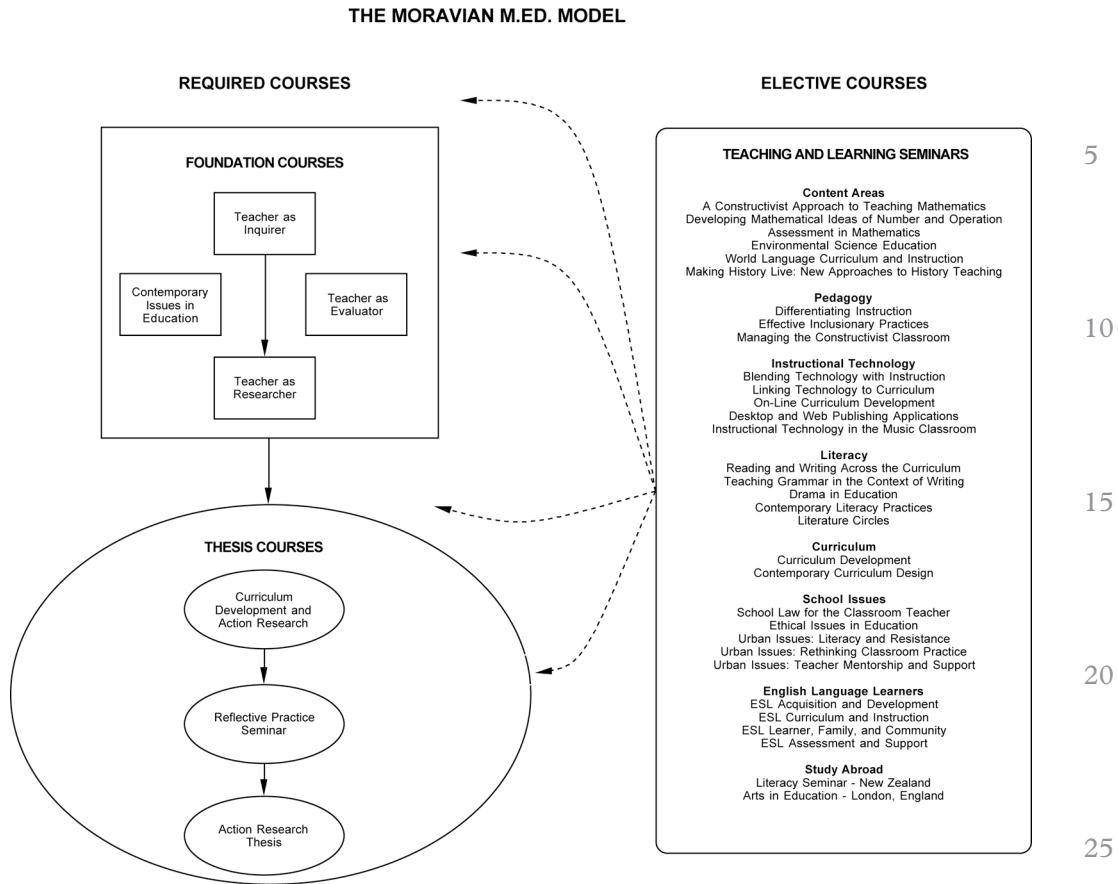


Figure 1. The Moravian M.Ed. Model

Posing appropriate research questions develops from analyzing the findings of synopses of research reports (Berliner & Casanova, 1996) that illustrate teachers' questions about their classroom practice and the methods of research that can be applied to investigate the questions. Considering an issue important to their own classroom, teachers, in turn, develop a question for inquiry. As they access educational literature and related research reports, they gain insight into the incremental growth of knowledge about educational topics. Then they design and carry out a brief exploration of their question in their own classroom. Darling-Hammond and Ball (1999) suggest: "The best way to improve both teaching practice and teacher learning is to create the capacity for better learning about teaching *as part of teaching*" (p. 2). They assert and we concur that:

Professional development that links theory and practice, that creates discourse around problems of practice, that is content-based and student-centered, and that engages teachers in analysis of teaching can support the serious teacher-learning needed to engender powerful student achievement. (Darling-Hammond & Ball, 1999, p. 4)

One of our teachers explains it this way: “I will become a better teacher due to the fact that I have learned to question my practice, conduct research, and put my own theories into practice”.

In “Teacher as researcher”, degree candidates are required to contextualize the role of action research in reflective practice by designing and implementing a teacher action research study that includes participant observation, participant interview, and a review of salient student work. As teacher researchers refine a question developed in “Teacher as inquirer” or explore a new line of inquiry, they utilize a wide array of mostly qualitative research methods to gather salient classroom data (Bogdan & Biklen, 2003; Holly, Arhar, & Kasten, 2005; Hubbard & Power, 2003). They form teacher inquiry support groups (Hammerman, 1999; Shosh & Zales, 2005) and make a commitment to ethical, trustworthy practitioner research (Anderson & Herr, 1999; Zeni, 2001). They elicit response from their participants through a series of individual and focus group interviews (Gubrium & Holstein, 2002; Seidman, 1998). They conduct classroom discourse analysis (Cazden, 2001; Gee, 1999), metaphor analysis (Lakoff & Johnson, 1980, 1999) and other types of analysis germane to their respective studies. Finally, they utilize a variety of narrative inquiry strategies to write to learn about their participants and themselves as they code their field log data and allow theme statements to emerge (Connelly & Clandinin, 1988; Ely, Vinz, Downing, & Anzul, 1997).

A crucial component of researching one’s practice is gathering data about student achievement through a variety of assessment and evaluation practices. In “Teacher as evaluator”, teachers consider assessment from a “backwards design” curricular view (Wiggins & McTighe, 1998). They select a unit of instruction in their curriculum to analyze for assessment issues. Preparation of daily cognitive objectives for their units (Anderson & Krathwohl, 2001; Bloom, Englehart, Furst, Hill, & Krathwohl, 1956) is integrated into an examination of national and state standards in the relevant content areas (Carr & Harris, 2001; Hurt, 2003). Aligning the objectives to the standards is the first step toward developing a useful assessment framework (English & Steffy, 2001).

During discussion of formative and summative methods, including process assessments (Black & William, 1998), portfolios (Fogarty, 1996), rubrics (Arter & McTighe, 2001), performance assessments (Hibbard *et al.*, 1996), and paper-and-pencil tests (Popham, 2005; Stiggins, 2001), teachers analyze the characteristics of the various assessment instruments, critique and compare them, and consider their effectiveness in measuring student achievement. With these insights, they create a variety of assessment instruments to evaluate mastery of their respective unit objectives.

The discussion of standardized tests and their impact on classroom instruction causes teachers to affirm the relevance of their own assessment instruments in guiding student achievement (Popham, 2003). Hands-on investigations of statistical concepts enable teachers to interpret statistical outcomes of standardized tests more thoroughly (Popham, 2000; Zales & Colosi, 1998). Teachers see the impact of high stakes testing (Harvard Education Letter, 2003; Jones, Jones, & Hargrove, 2003;

Kohn, 2000) on classroom lessons less fearfully as they become more confident in their own ability to assess their students. In commenting on valuable aspects of the course, one teacher lists “designing various assessment tools, writing objectives to meet standards, reading articles, and discussing current trends in assessment” as being particularly useful to her.

Of course, an examination of assessment and evaluation practices is incomplete without scrutiny of important social justice and legislative issues. In “Contemporary issues in education”, teachers work with a practicing superintendent of schools or K-12 curriculum director to examine current issues of local, national, and international importance as they apply to their respective classrooms. Facilitators and teachers negotiate the contemporary issues to be studied (Boomer, Lester, Onore, & Cook, 1992), which vary widely in scope from the logistics of the US Government’s *No Child Left Behind* legislation (2002) to Charlotte Danielson’s (1996) framework for professional practice, and from an examination of oppositional identity (Finn, 1999) to debates on the nature of scientific research in education (Eisenhart, 2005). Teachers enrolled in the course examine each issue from the perspective of various educational stakeholders, write weekly reflective responses to negotiated readings, prepare and deliver an oral presentation on a self-selected contemporary issue, and compile a reflective portfolio of selected pieces written for the course. One teacher comments:

To study issues that matter to me and my students with a superintendent of schools has been a unique and rewarding experience. I also think that it’s good for the person at the top to know what it’s really like for us as teachers on a daily basis. There’s a great give and take in our discussions.

Bringing Additional “Outside” Research to Bear on Classroom Practice

Candidates pursuing the Master of Education degree in curriculum and instruction select four seminars in teaching and learning from more than 30 available on a wide range of topics, including courses focused on specific content areas, pedagogy, classroom technology, literacy, curriculum, school issues and English language learners (see Figure 1). Study abroad opportunities are also available in New Zealand for literacy and in London, England for arts-in-education. Teachers select seminars to improve or enhance their practice in specific areas, and to broaden their content knowledge base. They are encouraged to intersperse foundation courses with elective seminars.

Elective seminars in teaching and learning are designed to immerse teachers in the research literature within a particular facet of classroom instruction and to provide opportunities for the concentrated study of pedagogical content knowledge in a given discipline (Shulman, 2002). In content area electives, for example, teachers may opt to focus on how to develop new curriculum within specific disciplinary contexts including mathematics, science, history and world language.

Pedagogically based courses allow teachers to examine specific practices for instructional differentiation, inclusion, and classroom management. Courses in

instructional technology assist teachers in integrating technology as an instructional tool, whether they are learning to blend technology with classroom instruction and school curriculum for the first time or whether they are ready to develop online curriculum or create desktop and web publishing opportunities for students. One teacher notes that:

The selection [of elective seminars] available really allows students to choose areas that interest them. I particularly enjoyed the computer courses because I have been able to apply the insights and ideas into my classroom on a daily basis.

Elective seminars focusing on literacy immerse teachers in a particular research base that they can explore within their respective classrooms as they learn to integrate reading and writing in the content areas, to teach grammar within the context of writing, to explore drama-in-education strategies, or to examine grade-level specific literacy practices and literature circles. One teacher reflects: "I learned to improve reading and writing opportunities for my students, to create a well balanced literacy environment, and to overcome personal obstacles of self assurance." Another adds:

I have learned that using drama in the classroom is an innovative way to increase student learning. The activities will allow me to build a comfortable atmosphere allowing for further curriculum exploration by students who may have been initially unengaged.

Within this elective series of seminars in teaching and learning, teachers engage in ongoing dialogue between best practices as suggested by their examination of the research literature and their own experiences as practicing teachers. As Cochran-Smith and Lytle (1993) remind us:

By conducting inquiry on their own practices, teachers identify discrepancies between their theories of practice and their practices, between their own practices and those of others in their schools, and between their ongoing assumptions about what is going on in their classrooms and their more distanced and retrospective interpretations. Inquiry stimulates, intensifies, and illuminates change in practice. Out of inquiry come analytic frameworks as well as questions for further inquiry. (Cochran-Smith & Lytle, 1993, pp. 51–52)

Here teachers reflect on their practice in-action (Schön, 1983, 1995) as they work to answer existing questions and consider new areas of inquiry for their graduate thesis, with an eye to conducting practitioner inquiry "in contexts that are of practical import, working on problems whose solutions help make things better and contribute to theoretical understanding" (Schoenfeld, 1999, p. 5).

Conducting the Thesis Study

The three-course thesis sequence depends upon the foundation courses and the elective seminars (see Figure 2). In "Curriculum development and action research", teachers often opt to expand upon lines of inquiry begun earlier in the program as they prepare an action research thesis proposal. Their research question frequently

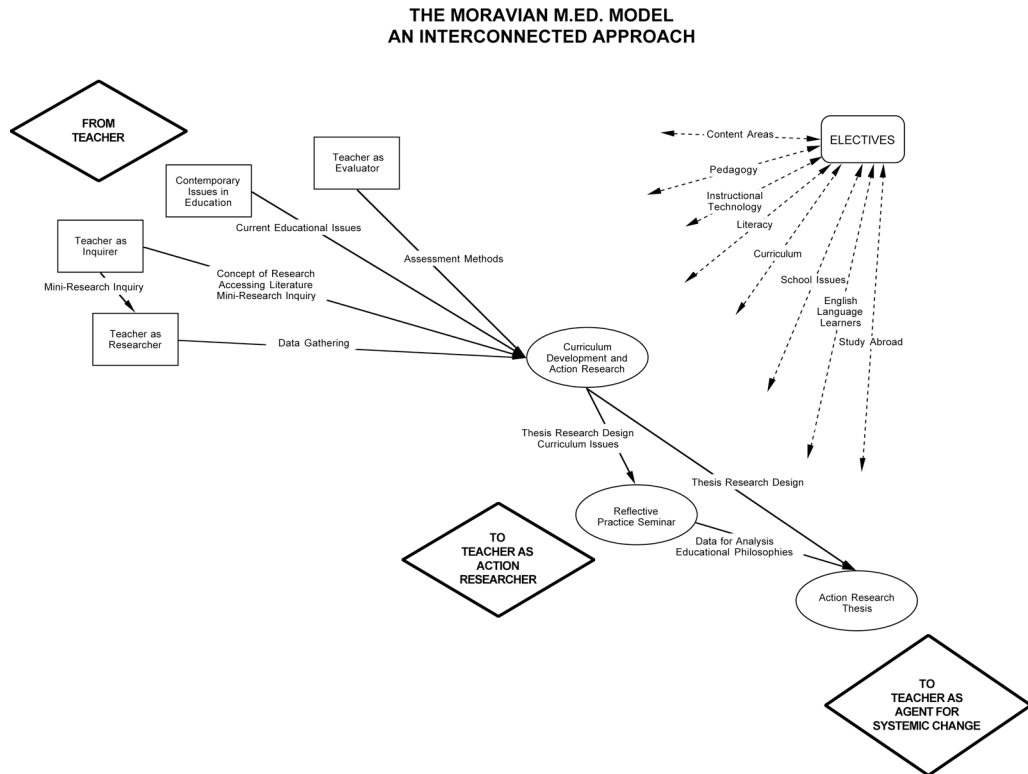


Figure 2. The Moravian M.Ed. Model: An Interconnected Approach

relates to the ones they investigated in “Inquirer” or in “Researcher”, though it may be a new line of inquiry, perhaps generated from discussions in “Contemporary issues”. Critical in question creation is locating pertinent articles and subsequent writing of a literature review, skills mastered in “Inquirer”. The design of their research methodology builds on data gathering experiences in “Researcher” and related instruments prompted by the assessment methods investigated in “Evaluator”. Ethical issues related to action research are re-examined as teachers prepare documents for research approval from the College’s Human Subjects Internal Review Board. While developing the thesis proposal, teachers examine current trends in curriculum (Ornstein, Behar-Horenstein, & Pajak, 2003) and discuss curriculum development processes (Connelly & Clandinin, 1988). Reading articles weekly about curriculum issues that affect classroom teaching, such as specific questions about the arts (Greene, 1995) and technology (Tapscott, 1999), and more global topics, such as caring (Noddings, 1995), character education (Kohn, 1997; Sizer & Sizer, 1999), critical thinking (Lipman, 1988), and creativity (Sternberg & Lubart, 1991), allow teachers to critique the concepts and recommendations presented, and then reflect on the relevance to their classrooms, curricula and research questions. One teacher preparing the thesis proposal explains the value this way: “The contemporary issues in curriculum and journaling about them seemed to

me thought-provoking. It made you think about what goes on and even why it might go on in your classroom and/or your building”.

Candidates begin data collection as they simultaneously examine a philosophical base for reflective teaching and learning in “Reflective practice seminar”. Teachers enact their self-designed data collection plans and document their practice in a field log in a process analogous to that experienced in “Teacher as researcher” and make their familiar practices strange to themselves (Geertz, 1973) through the writing of analytic memos that examine data through a series of progressive (Dewey, 1997a, b), dialogical (Freire, 2003), social constructivist (Vygotsky, 1978), and sociolinguistic (Delpit & Dowdy, 2002) lenses. They write to learn about their data along the way, utilizing a wide array of narrative conventions, including anecdotes, vignettes, layered stories, pastiches, dramas, and poems (Ely *et al.*, 1997; Richardson & St Pierre, 2005). Data are coded (Bogdan & Biklen, 2003) and then categorized in graphic organizers. Theme statements emerge as teacher researchers explain how the field log data contained within each category relate to the research question or sub-questions. One teacher comments: “I am well prepared to write the thesis after collecting, analyzing, and interpreting my data. This was an awesome experience”. Another adds: “I look more closely at my students and note their specific learning needs. I am a more reflective teacher as a result of conducting my study”.

In “Action research thesis”, their final semester of study, degree candidates work with a faculty advisor and a cohort of five other teacher researchers in an intensive writing workshop environment to pen the research thesis. They begin by creating an initial table of contents and drafting plan (Wolcott, 2001) as they extend their understanding of how to lead their own writing, revising, and editing processes (Elbow, 1998). Workshop sessions focus on such topics as writing for an outside audience, explaining the research methodology, writing up and integrating a review of salient literature, explaining the analysis of data, exploring narrative forms, and interpreting research findings. Teachers display trustworthy action research data; support colleagues in their analysis, organization, and write up of data; and go public with action research findings by defending the written thesis before a self-selected committee of three educators—the faculty advisor, a colleague already holding an advanced degree, and a program instructor. Final copies are bound and added to the College’s Education Curriculum Materials collection and may be accessed online at: <http://home.moravian.edu/public/educ/eddept/mEd/index.htm>.

Profiling the Program’s First Degree Completers

Of the first 47 teachers to receive the College’s M.Ed. degree, more than half report their primary teaching assignment in elementary schools, with 23% teaching in middle schools, 17% in high schools and 6% serving in a professional staff development capacity. Ninety-five per cent are female, and 95% report their race as White or Caucasian. Three-fourths report teaching more than five years at the time of degree conferral, and candidates took an average of three and a half years to complete degree requirements, while also teaching full time.

More than half of the program's graduates pursued a teacher action research agenda exploring some facet of engagement and achievement in literacy. Primary-level studies focused on integrating the study of reading and writing into children's free exploration and play, writing to learn in mathematics, and supporting the needs of struggling readers and writers. Intermediate-level literacy studies explored the implementation of new classroom structures, including reciprocal teaching, peer tutoring, literature circles and authentic writing experiences. Secondary literacy studies examined curriculum design inspired by Csikszentmihalyi's flow theory (1997), student-centered homework assignments, drama-in-education practices and reflection in process-based writing.

The remaining studies explored research agendas in arts education, mathematics, metacognition, social sciences, science, special education, teacher mentorship, and world languages. A complete roster of titles with abstracts written by the teacher researchers may be accessed online at: <http://home.moravian.edu/public/educ/eddept/mEd/index.htm>. The action research thesis studies completed by the program's graduates range from 81 to 220 pages in length, with a median of 118. Teachers referenced, on average, 32 published documents, with a low of 16 and a high of 56.

When analyzing the more than 400 classroom action research studies conducted by teachers in the Madison, Wisconsin school district, Zeichner (2001) found that teachers set out to improve their practice, better understand their practice, promote equity, and change the conditions of their practice (p. 277). All of the thesis studies that we report on here documented analogous changes teachers made to foster greater student engagement and achievement. We examined our teachers' studies in relation to the *technical*, *practical*, and *critical* categories of teacher action research that Kemmis (2001) identifies. While most of the pilot studies conducted in "Teacher as inquirer" or "Teacher as researcher" are essentially *technical* in nature for their orientation "towards functional improvement measured in terms of its success in changing particular outcomes of practice," we find that the *practical* classification best reflects our graduates' investigations aimed at "understanding and changing themselves as the subjects of a practice (as practitioners) as [much as] changing the outcomes of their practice" (p. 92). Unlike Kemmis, however, we found many studies in which teachers set out with a *practical* orientation but became *critical* or *emancipatory* as their cycles of reflective practice led them to "arrive at a critique of their social or educational work and work settings" (p. 92), and became teachers as agents for systemic change. Notably, 70% of thesis studies involved an examination of student agency and ownership as teachers relinquished some facet of traditional control and empowered students through the creation and implementation of new student-centered social structures. In the studies we identified as being most overtly *emancipatory*, students served as co-researchers and curriculum developers, and teachers took action against what they viewed as oppressive school structures both within and outside of their classrooms. One teacher explains: "I have become a more active part of the education community. I am more confident to share my findings and now believe that changes can be made to better education".

Evaluating Graduate Teacher Education

Following the successful oral defense of the thesis and submission of the final document to the college library for cataloging, all degree candidates completed a program evaluation survey, which began by asking them to respond on a five-point Likert scale to a series of 11 statements (see Table 1). Every question was rated strongly agree or agree by at least 85% of the teachers. Ninety-four per cent of the total replies were rated strongly agree or agree, and just 1% of total replies were rated disagree or strongly disagree. In their overall evaluation of the program in this section of the survey, 40 candidates gave a mean response of 4.5 or higher out of 5 on all 11 questions, with an arithmetic mean of 4.7 for all of the degree candidates' responses (see Table 2).

Table 1. Student responses to program final evaluation questions ($N = 47$)

Question	Strongly agree or agree	Neither agree nor disagree	Disagree or strongly disagree	Average rating
1. I am able to access, understand, and apply key research findings in education.	45	2		4.7
2. I am able to document my practice and make changes based on systematic inquiry into my own teaching.	45	2		4.8
3. I am a trustworthy teacher action researcher.	46	1		4.9
4. Teacher action research benefits my teaching and my students' learning.	41	6		4.7
5. The Moravian M.Ed. program has helped me to become a more reflective practitioner.	42	4	1	4.6
6. The Moravian M.Ed. program has helped me to become a better writer and more effective communicator.	41	5	1	4.6
7. I usually worked at least 4 hours/week outside of class in preparing/studying for each course.	47			5.00
8. I usually worked at least 6 hours/week outside of class in preparing/studying for each course.	47			4.9
9. I worked hard in the Moravian. M.Ed. program.	47			5.0
10. In general, M.Ed. courses were well taught.	40	5	2	4.3
11. I discussed my M.Ed. coursework outside of class with other students.	45	1	1	4.6
Average				4.7

Table 2. Student overall rating (N = 47)

Overall rating	Number of students
5.0	15
4.9	10
4.8	2
4.7	5
4.6	2
4.5	6
4.2	1
4.1	1
3.9	4
3.7	1
4.7	Average

The survey then asked respondents to indicate those aspects of foundation courses, elective seminars, and thesis courses that they would like to see continued and/or improved upon in the future. They were also asked to indicate how they had changed as a result of their graduate course of study. We coded each of the responses made and then compared and contrasted responses with the same and similar codes. What emerged is a series of theme statements that shed additional light on participants' experiences with the graduate teacher education as inquiry model. Theme statements are presented in italics, followed by explication, and where useful, direct quotation from the participants.

Learning is interconnected between and among courses. Teachers report needing to think outside the conventional boundaries of single course requirements and assignments as they are called upon to interconnect learning from foundations and elective courses in the development, implementation, and write up of their teacher action research thesis. Here teachers note the need to save all work done in any given course, because that work is likely to be integral to success in future courses. One teacher suggests that more emphasis needs to be placed on "keeping the materials and even the notes taken for further use". Another reminds those who follow to "keep a list of each author encountered and what was important in his or her text since this is crucial to the literature review". Teachers cite the importance of actually doing teacher action research in foundation and seminar courses as being important both for thesis preparation and for changing how they think about their teaching and their students' learning.

Graduate education coursework is and should be demanding, as long as challenges are clearly and consistently linked to classroom practice. Teachers report being positively and productively challenged from their first courses in the program, where they initially learn about research paradigms and key theoretical perspectives. One

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teacher comments, "This program is not for the weak of heart. The teacher needs to be motivated and put in the extra time and effort. This effort will be rewarded by the many things learned in the program". Another adds, "There are no 'dumbed down' classes. You learn about your own teaching and that is exponentially more helpful than what I've seen in some other graduate education programs". A few teachers do not perceive a practical value for what they termed a "statistical emphasis" in "Teacher as evaluator".

A commitment to meaningful graduate teacher education requires a substantial investment of time, a precious commodity in the lives of already over-burdened professionals. Teachers report devoting increasing amounts of time to their teacher action research from the mini study they do in "Teacher as inquirer" to the pilot study they complete in "Teacher as researcher" to the three-semester thesis sequence. While all teachers report that the program requires this investment of time to be successful, their response to doing so lies along a continuum from those who are completely satisfied with this investment to those who report that the time demands are excessive. In recommending the program to colleagues, one teacher notes, "I would tell them that it is practical and worthwhile due to the action research. However, they need to be prepared for a tremendous amount of work". Another explains, "It is only through hard work and constant reflection that I can be the educator I am most proud of". One teacher, though, indicates being a "poorer instructor with less patience" while completing the thesis. Several graduates report that despite how they have been transformed by the teacher action research process, they would be reticent to recommend the graduate program to already time-strapped colleagues.

The teacher action research process produces a commitment to student engagement and achievement. Teachers report growth in their ability to access information from the research literature, to systematically study their teaching and their students' learning, and to make specific changes that lead to demonstrable improvement in student achievement and engagement. They indicate positive change in their confidence, self-knowledge, teaching practices, and personal standards. They also discuss the importance of learning how to examine their practice through literature-based action research, and how to use both insider and outsider knowledge to meet the needs of their students. One teacher explains: "The M.Ed. experience has made me more reflective of my teaching practice. Although before [I completed the program] I would consider whether a lesson/teaching practice went well, I am now more systematic and thoughtful in my reflections." Another says: "I am more curious about what occurs in my classroom and now I have the tools to use research to change what is happening".

As individual teaching practices change over time, how teachers think about teaching also changes. Rather than making one-time changes in their practice, graduates report being transformed by the teacher action research process in their transition from

teachers to teacher action researchers and teachers as agents for systemic change. Through their reflection during prolonged engagement in interconnected courses, teachers gained insights that moved their research agendas from Kemmis' (2001) *technical* orientation to *practical* direction and, for many, to *critical* or *emancipatory* levels. One teacher explains: "I have certainly become much more reflective about my teaching. I learned a lot about myself—some good, some bad. I know that I will continue to use action-research techniques in my classroom to benefit my students." Another says; "I am now able to do the difficult task of looking at my teaching practice honestly and making the necessary adjustments and changes". Demonstrating the shift in classroom power dynamics, still another explains: "I allow my students the opportunity to choose things on a regular basis. My students now truly have a voice in our classroom on a daily basis". Importantly, all of the thesis documents share the narratives of educators providing multiple opportunities for their respective students to become more engaged in their work and to demonstrate clear achievement. Teachers suggest that colleagues who follow them in the M.Ed. program will find success by accepting the challenge to make meaningful changes in classroom practice, using the teacher action research process to try new teaching methods, and preparing for time-consuming work that will ultimately prove to be useful.

Implications for Change in Graduate Teacher Education

We agree with Levine (2005), that it is incumbent upon all graduate programs designed or re-designed for education professionals to possess a rigorous curriculum, high academic standards, expert faculty, multiple opportunities for practitioner research, appropriate degree conferral, and, of course, high scholarship. Based upon the experiences of our program's first 47 graduates and the broader call for reform in teacher education, we offer the following propositions:

1. We believe that teacher action research must be central to a professional development model that intends to foster the transformation from teacher to teacher action researcher to teacher as agent for systemic change. When the courses in the program are interconnected, teachers become immersed in ways that lead to this empowerment and transformation.
2. We believe that teachers need the opportunity to study their own practice in the context of the research findings from a variety of disciplines and from multiple theoretical perspectives. High academic standards within the professional development program must be linked clearly to student engagement, student achievement, and a commitment to social justice within specific classrooms, schools, and communities.
3. We believe that while teachers must be empowered to develop their own meaningful lines of inquiry, they must also be required to document the impact of their actions on student engagement, student achievement, and social justice. The results of teacher action research inquiry need to be available for public and professional scrutiny, hence providing a strong evidentiary warrant.

4. We believe that teachers need guidance, mentorship, and support from professors, teaching colleagues, and school administrators and also need and deserve ample time to think metacognitively about their practice as they devote increasingly more of their own limited time to gathering data, analyzing that data and making changes to their practice in response to these data.
5. We believe that as more minorities and traditionally underrepresented populations are encouraged to seek teacher certification, these teachers must have access to graduate teacher education that encourages and supports their action research process.
6. We believe that it is incumbent upon those who oversee graduate education programs to connect the curricula of those programs directly to the learning of students and teachers within actual classrooms. Where the curricula do not provide evidence of promoting student achievement, engagement and social justice, they require revision to suit the needs of the constituents they serve.

Teaching under the best of circumstances is incredibly challenging work. To transform one's practice in the context of becoming a reflective practitioner is even harder.

Stenhouse wanted teachers to help students to struggle with difficulty, to enjoy the challenge of things that are "hard", and to feel that if they struggle with meaning, then they are gaining: failure is avoiding the struggle. (Rudduck, 1995, p. 8)

Teacher educators and the institutions of higher learning that employ them must put an end to Levine's (2005) aptly titled "race to the bottom" and mentor teachers to struggle with the inevitable challenges they will encounter when making the transformation from teacher to teacher action researcher to teacher as agent for systemic change. Of course, the struggles for all involved will not be easy, but they must be embraced, for we cannot fail in our efforts to promote student engagement, student achievement, and social justice. The stakes are simply too high.

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