AUTHENTIC INQUIRY: QUALITATIVE RESEARCH IN MULTIPLE LEARNING ENVIRONMENTS

Dr. Dorothy Valcarcel Craig  
Department of Educational Leadership  
Middle Tennessee State University  

Dr. Kyle Butler  
Department of Educational Leadership  
Middle Tennessee State University  

Dr. Paul A. Craig  
Department of Aerospace  
Middle Tennessee State University  

This study examined the perceptions, views, and processes of graduate students enrolled in four research courses which were delivered online, onsite, or through a cohort group. Participants included part-time graduate students enrolled in Masters and Specialist programs. Employing a qualitative approach to inquiry, the researchers utilized a framework of overarching questions in collecting and analyzing a variety of data. Data analysis employed the constant comparative method which enabled the researchers to code and categorize units. Findings indicate that student preferences changed as they engaged in research and developed research orientation. The concept of “the researcher’s apprentice” emerged as well as the adoption of a qualitative approach as the method of choice. The delivery method did not affect success as much as prior experience of students, course design, and course tasks.

As institutions of higher education move toward research-based practices, the need to integrate research strands into coursework at the undergraduate and graduate level increase. As a result, students enrolled in graduate programs that lead to research-based, practitioner-oriented positions are finding that program requirements include multiple experiences which focus on individual and collaborative research. However, many graduate students view the research process as an overwhelming task—especially those who are: a) enrolled in graduate programs as part time students, b) are employed full time, and c) are minimally familiar with the research process. The preparation, views, perceptions, and prior experiences of graduate students have a critical impact on their success as researchers. Nevertheless, research components are part of the graduate school experience. In addition, graduate students who are seeking Masters, Specialist, and Doctorate degrees—due to lack of required research at the undergraduate level—enter advanced programs with vastly different views of the research process. Professors teaching graduate level research courses are faced with the challenge of meeting the needs of students who represent diverse backgrounds with regard to research. Considering course requirements, graduate program demands, research skills, and IRB guidelines, the professor must design research courses that target the development of research orientation while blending relevant and practical assignments so that students become confident in their research skills and continue their inquiry beyond the course or program.
In addition, universities operating under a Carnegie classification of Masters’-L—which is below the doctoral research-based classification—typically enroll students who may not pursue terminal degrees. Instead the enrollment is driven by a need to complete coursework and/or degrees that will lead to salary increases, certification or professional licensure, or a specific job within a specialized field. In an attempt to meet the needs of a graduate student population which does not consist largely of full-time students, course delivery methods may include: a) onsite classes, b) online delivery, c) off campus cohort groups, and d) other means of distance learning combinations. The variety in delivery methods contributes to the challenge of assisting graduate students in developing the skills needed to engage in meaningful inquiry.

Overview of the Study

In an attempt to better meet the needs of such populations, the researchers determined that an examination of: a) current practice with regard to graduate-level research courses, b) delivery method, and c) student views and perceptions of research was needed. The first step in the inquiry consisted of a discussion of current practice and course requirements. Three university professors agreed to take part in the study in order to represent onsite, online, and cohort delivery methods. The professors served as practitioner-researchers in collecting data, analyzing data, and taking the stance as researcher-as-instrument. Participants consisted of graduate students enrolled in a Master’s level research course, a Specialist level advanced research course, a Master’s level course focusing on leadership, and a Specialist cohort leadership course that required students to conduct action research within their work-based settings. The participants were all part-time graduate students.

Due to the nature of the inquiry, a qualitative approach was needed. Overarching questions were developed and data sets aligned with each question in order to ensure and address triangulation. The study took place over a period of two academic semesters. During that time: a) the researchers interacted with the participants, b) assisted them in completing course tasks and activities, c) served as research mentors for the Specialist students as they conducted action research studies.

This study examined the current practice, process, discourse, and patterns that emerged as students completed graduate-level research course activities and conducted semester-long action research projects. Graduate student participants represented a number of programs including Specialist Curriculum and Instruction, Specialist Administration, and Master’s of Aerospace Education. A set of overarching questions framed the study. The overarching questions provided a focus and set the tone and theme. These included:

a. What preconceived views or perceptions of research are held by part-time graduate students enrolled in Master’s and Specialist level research courses?

b. What patterns—with regard to the inquiry process—would emerge as students engaged in required tasks, activities, and action research?
c. Which delivery method components—onsite, online, or cohort delivery—assist in developing research orientation, skills, and in facilitating the research process among graduate students?

**Review of Literature**

Depending on the source, there are a variety of general definitions regarding research and the research process. According to Gay, Mills, and Airaisian (2006), research consists of a systematic application of the scientific method in studying problems. Research, therefore, is based on the scientific method of: a) problem identification b) carrying out research procedures and activities, c) collecting data, d) analyzing data, and e) drawing conclusions based on the inquiry. Leedy (1996) adds the term, *understanding*, in describing research as a systematic process carried out to increase understanding of specific phenomenon in eight steps. These steps include:

1. Research originates with a specific problem or interest,
2. Research requires clear goals,
3. Research follows an outlined plan and set of procedures,
4. Research typically divides the main focus or problem into smaller sub problems,
5. Research is guided by a research problem, hypothesis, or set of overarching questions,
6. Research accepts critical assumptions,
7. Research requires a systematic collection of data and data analysis, and
8. Research—in many cases—builds on previously conducted research.

Basically, research methods may be grouped into quantitative or qualitative approaches. Quantitative methods require the researcher to utilize standardized, statistical measures, which facilitates comparison and statistical aggregation of data collected from a large number of participants. Qualitative measures enable the researcher to engage in an in-depth examination of a specific phenomenon or a specific group through fieldwork, observation, and multiple data sets, and critical analysis (Patton, 1990). When making method decisions, researchers must select the method that best suits the inquiry. Researchers consider structure, design, and data needed to inform the inquiry.

Graduate research course content usually addresses methods, data, analysis, and structure. Given the role of any Institutional Review Board (IRB)—typically in place within the university environment—course activities and content present information regarding Human Subjects Training and general IRB guidelines in place. However, all too often research course curriculum does not address the prior skills and experiences of graduate students—leaving students feeling inadequate in their skills as researchers. Research course curriculum may not select the method that best suits the inquiry. Researchers consider structure, design, and data needed to inform the inquiry.

In addition, universities classified as Master’s-L as outlined in the Carnegie Classifications are faced with the challenge of delivering research coursework that includes: a)
rigorous standards, b) a variety of relevant topics, and c) tasks and activities that assist students in building and developing the general skills needed to conduct research within the work-based environment. In the text, *The Formation of Scholars: Rethinking Doctoral Education for the Twenty-First Century* (Walker, Golde, Jones, Bueschel, & Hutchings, 2008), the authors outline four themes that may be considered when revising doctoral education. These themes may also be applied to Master’s and Specialist programs and focus on:

- **Purpose** – Examine processes, tools, and opportunities for faculty and graduate students to apply processes and skills as scholars to their purposes and practices as learners.
- **Principles of Formation** – Development towards increasing independence and responsibility by integrating contexts and arenas of scholarly work with collaboration among faculty, students, and peers.
- **Apprenticeship Reconsidered** – Establishing a tradition of collaboration between the “faculty master” and the “student apprentice” as central experience within graduate programs.
- **Intellectual Community** – Creating environments which encourage the development of student scholars within the larger academic community.

In order to address the themes, students must become involved in coursework, tasks, and activities that encourage them to engage in self-study, inquiry, and collaboration. In turn, faculty must engage in collaborative inquiry in order to serve as mentors in creating an environment that includes the notion of *researcher’s apprentice*. In addition, Shulman (2000) suggests that faculty and universities focus on the concept of, *fidelity*. Four types of fidelity within the realm of scholarly activities include:

1. Fidelity related to the integrity of the discipline,
2. Fidelity related to the student learning and the commitment to teach and serve,
3. Fidelity related to society, community, and institution, and
4. Fidelity related to the professor’s identity and self of sense as a scholar and academic.

By focusing on the four types of fidelity, universities may better examine practice. With the examination of practice comes change an improvement. Universities across the United States are engaged in discussion regarding the blending of teaching and research. In reality, a strong program needs an integration of both teaching and research. Casper (1998) adds that universities must consider research and scholarly activities as traditional functions of academia. In addition, a dedication to the search for knowledge as well as a spirit of critical inquiry should be present in order to encourage student-conducted research. By examining teaching practices, professors may better address how to model research practices, thereby enabling the development of the researcher’s apprentice across programs. The idea of fidelity as related to academia is not a new concept as Boyer (1990) observed that scholarship is not complete unless it is disseminated and understood by others. By examining current practice and integrating methods and strategies that encourage graduate students to develop the skills needed to effectively engage in research, universities move toward improving practice and establishing programs that meet the demands of practice.
From a graduate student perspective, investing in a profession requires critically examining practice and conducting research in order to improve practice. By engaging in collaborative scholarly activities such as research as part of a program or course or presenting findings at a conference or meeting assist in building the skills needed to engage in inquiry on an ongoing basis. Graduate students may invest in their professions by presenting findings from their own research at professional conferences, seminars, or other related professional meetings. In general, faculty members agree. In a recent study examining research practices within graduate programs, faculty members were asked what factor would make potential graduates students most attractive for admission (Collins, 2001; Fagen & Wells, 2002). Common responses included research skills and research involvement. However, if skills are not developed and research is not encouraged it is difficult for graduate students to venture into the area of critical inquiry.

Considering all factors, improving an existing graduate research course is difficult if faculty lack information regarding: a) graduate student previous experience with research, b) graduate student views, perceptions, or level of comfort with the process, and c) level of research skill or research orientation. In addition, if graduate students do not see the research process as something relevant to their own work-based situations, there is little motivation to engage in systematic inquiry.

The Study

Based on the need to assist graduate students develop research skills while improving practice, the study examined the current practice, process, discourse, and patterns that emerged as students completed graduate-level research course activities and conducted semester-long action research projects. Graduate student participants represented a number of programs including Specialist Curriculum and Instruction, Specialist Administration, and Master’s of Aerospace Education. A set of overarching questions framed the study. The overarching questions provided a focus and set the tone and theme. These included:

1. What preconceived views or perceptions of research are held by part-time graduate students enrolled in Master’s and Specialist level research courses?
2. What patterns—with regard to the inquiry process—would emerge as students engaged in required tasks, activities, and action research?
3. Which delivery method components—onsite, online, or cohort delivery—assist in developing research orientation, skills, and in facilitating the research process among graduate students?
4. What information gleaned from the inquiry would assist professors in revising coursework in order to improve practice?

Three professors served as the researchers throughout the inquiry. Two are faculty members in the Department of Educational Leadership. One is a faculty member in the Department of Aerospace. All three are employed by a state university of almost 23,000 students located in the southern region of the United States. The university classification—as identified by the
Carnegie Foundation for the Advancement of Teaching—is currently Master’s –L, which was the classification at the time of the study (Figure 1). The researchers represented three programs—all of which require students to complete either a Master’s level course or an advanced research course (Table 1).

Figure 1. *Overview of Research Site*

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Instructional Program</td>
<td>Bal/SGC: Balanced arts and sciences/professions, some graduate coexistence</td>
</tr>
<tr>
<td>Graduate Instructional Program</td>
<td>CompDoc/MedVet: Comprehensive doctoral (no medical/veterinary)</td>
</tr>
<tr>
<td>Enrollment Profile</td>
<td>VHU: Very high undergraduate</td>
</tr>
<tr>
<td>Undergraduate Profile</td>
<td>FT4/S/HTI: Full-time four-year, selective, higher transfer-in</td>
</tr>
<tr>
<td>Size and Setting</td>
<td>L4/NR: Large four-year, primarily nonresidential</td>
</tr>
<tr>
<td>Basic</td>
<td>Master’s L: Master’s Colleges and Universities (larger programs)</td>
</tr>
</tbody>
</table>

Notes:

Graduate program classification is based on fewer than 50 degrees.

Undergraduate program classification: the percentage of majors is within 5 points of a category border (professions direction).

Size and setting classification: the percentage of students in residence is within 5 points of the category above.

*Adapted from The Carnegie Foundation for the Advancement of Teaching (2007)*
Table 1. *Researchers and Courses*

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Program</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researcher #1</td>
<td>Education Specialist</td>
<td>Research Block*</td>
</tr>
<tr>
<td></td>
<td>Curriculum &amp; Instruction</td>
<td>SPSE 7010</td>
</tr>
<tr>
<td></td>
<td>Specialization in Technology &amp;</td>
<td>Educational Research Methods</td>
</tr>
<tr>
<td></td>
<td>Curriculum Design</td>
<td>Fall Semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPED 6790</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Individual Directed Research</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring Semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.0 credit hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Eight students enrolled in both SPSE 7010 and FOED 7610</td>
</tr>
<tr>
<td>Researcher #1</td>
<td>Master’s in Education</td>
<td>SPSE 6140</td>
</tr>
<tr>
<td></td>
<td>Curriculum &amp; Instruction</td>
<td>Teacher Leadership for School Improvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall Semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0 credit hours</td>
</tr>
<tr>
<td>Researcher #2</td>
<td>Education Specialist</td>
<td>SPSE 7190</td>
</tr>
<tr>
<td></td>
<td>Administration &amp; Supervision</td>
<td>Professional Field Experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring Semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0 credit hours</td>
</tr>
<tr>
<td>Researcher #3</td>
<td>Master of Science in Aerospace</td>
<td>AERO 6610</td>
</tr>
<tr>
<td></td>
<td>Master of Aerospace Education</td>
<td>Research Methods</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall Semester</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0 credit hours</td>
</tr>
</tbody>
</table>
Participants

Participants included graduate students enrolled in one of four programs—the Master’s in Aerospace Education, Master’s in Education/Curriculum & Instruction, Education Specialist/Administration, or Education Specialist/Curriculum & Instruction/Technology & Curriculum Design. Participating graduate students submitted signed consent forums and agreed to engage in course activities, tasks, and conduct action research as determined by individual course requirements. Most of the participants were part-time students with a majority employed as full time classroom teachers. At the time of the study, four participants were also graduate assistants (Table 2).

Table 2. Overview of Participants by Course Enrollment

<table>
<thead>
<tr>
<th>Course</th>
<th>Number / Gender</th>
<th>Status</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Block</td>
<td>10 / Females</td>
<td>Part time students</td>
<td>8 / Teachers</td>
</tr>
<tr>
<td>SPSE 7010</td>
<td></td>
<td></td>
<td>2 / Administrator</td>
</tr>
<tr>
<td>FOED 7610</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPSE 6140</td>
<td>9 / Females</td>
<td>Part time students</td>
<td>9 / Teachers</td>
</tr>
<tr>
<td></td>
<td>2 / Males</td>
<td></td>
<td>1 / College Coach</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 / Grad Assistant*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Also employed outside of the university</td>
</tr>
<tr>
<td>SPSE 7190</td>
<td>7 / Females</td>
<td>Part time students</td>
<td>13 / Teachers</td>
</tr>
<tr>
<td></td>
<td>7 / Males</td>
<td></td>
<td>1 / Administrator</td>
</tr>
<tr>
<td>AERO 6610</td>
<td>4 / Females</td>
<td>Part time students</td>
<td>5 / Employed in Aviation Industry</td>
</tr>
<tr>
<td></td>
<td>4 / Males</td>
<td></td>
<td>3 / Grad Assistants*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Also employed outside of the university</td>
</tr>
</tbody>
</table>

Total Participating Graduate Students: 43
Methodology

Egon Guba (1978) describes qualitative research as a “discovery-oriented” process that minimizes investigator manipulation of data and setting and which places no prior constraints on what the outcomes of the research will be. The discovery-oriented process was at the heart of the study and reflected the intent of the inquiry. The inquiry required multiple processes and two research contexts. The multiple processes included: a) structuring and conducting the actual study, b) assisting graduate students in conducting research, and c) examining processes in order to improve and revise coursework. The two research contexts included: a) professor-researcher inquiry and b) graduate student inquiry. The intent of the professor-researchers was to examine a student research processes from the acquisition of beginning research skills to the completion of student-conducted projects. Emerging patterns, themes, and categories would be used to inform the inquiry and in addressing coursework.

Due to the nature of the inquiry, the researchers determined that a qualitative approach was needed for the overall method. This decision was based on the five features of qualitative research as defined by Bogdan and Biklen (1998). These features include:

1. Naturalistic – qualitative research requires the researcher to spend considerable amount of time within the research setting interacting with the environment as well as with participants. The onsite involvement enables the researcher to experience the situational milieu in order to establish meaning and understanding. This was established through: a) prolonged engagement in the onsite environment, b) prolonged engagement with cohort groups, and c) prolonged engagement via one-on-one interactions with the professor in the online environment.

2. Descriptive Data – Qualitative methods require the collection of descriptive data. Data consist of words, diagrams, pictures, artifacts, etc. Data may also consist of transcripts, fieldnotes, personal documents, or records. The data are collected in an attempt to address all things within the studied situation in order to later create a rich, descriptive picture of events. This was accomplished through the systematic collection of multiple forms of data including student products, field notes, discussion forum responses, interviews, survey response, and related artifacts.

3. Concern with Process – A qualitative approach demands that the researcher be concerned with process rather than product. The qualitative emphasis on process matched well with the focus of inquiry in that the researchers intended to study the research processes utilized by graduate students.

4. Inductive – Qualitative methods require the researcher to inductively analyze data. There is no hypothesis or preconceived ideas regarding outcomes. The process of data analysis involves examining bits of data, coding, and categorizing. Without assumptions, this was accomplished through a systematic analysis of each data set by separating the information, looking for emerging themes, and re-assembling the data sets into coherent, integrated chunks.
5. Meaning - The establishment of meaning is critical to the qualitative approach. Researchers are required to approach the inquiry in an open manner so that they may uncover and determine the *participant perspective*. Through examination of emerging themes, patterns, and categories, the researcher triangulates data to inform the inquiry. An inductive approach to the study was accomplished through careful analysis of the data sets and identification of emerging categories through coding.

Embedded within the study were the processes used to complete action research projects conducted by graduate students. Two of the classes required students to: a) complete Human Subjects Training, b) submit a proposal for IRB approval, and c) conduct a study relevant to the practicing environment. Given the time constrictions, the researchers decided that the graduate students participating in the study would conduct action research projects. This decision was based on the characteristics of action research and its relevancy to the work-based environment. As a research method, action research may take a qualitative stance in that it is recursive or cyclical in nature—meaning that it does not initiate from an initial question to the formulation of data collection, analysis, and conclusion. Instead, due to the practitioner-based nature of action research, the process may begin with a set of overarching themes or questions and progresses in a manner that recognizes emerging patterns, multiple forms of data, and ongoing analysis leading toward an informed plan for improving practice. Perhaps the most unique aspect of action research is that those within the working environment evaluate the situation from the “inside,” therefore gaining authentic data and first-hand information.

Noffke and Stevenson (1995) suggest that there are multiple definitions of action research due to the nature of the process. Perhaps the most unique aspect of action research is that the process encourages “experts in the field” to examine and evaluate classroom situations from the “inside,” therefore gaining authentic data and first-hand information. Teachers who engage in action research are true researchers in that they:

- Share a knowledge base that is common to their profession,
- Are aware of the standards of their practice,
- Understand the differentiated roles within the profession,
- Are fully competent to make professional decisions with regarding to improving their own practice, and
- Engage in continuous reflection in order to improve classroom practices in general (Meyers and Rust, 2003).

Returning to the overarching questions, the researchers identified specific data sets that would assist in informing the inquiry. A triangulation matrix was utilized in the alignment process. The matrix was revisited during data analysis in order to ensure triangulation (Table 3). Beginning in the fall, data were collected on a weekly basis or as determined by course activities and tasks. Researchers kept field journals and recorded ongoing entries as well as reflective entries. Data were originally organized based on overarching questions. During data analysis, data sets were re-organized during the coding and categorizing process.
Table 3. *Triangulation Matrix*

<table>
<thead>
<tr>
<th>Question</th>
<th>Data Set</th>
<th>Data Set</th>
<th>Data Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>What preconceived views or perceptions of research are held by part-time</td>
<td>Beginning of Semester Perceptions of Research</td>
<td>Researcher field notes</td>
<td>Discussions (onsite, cohort, and online)</td>
</tr>
<tr>
<td>graduate students enrolled in Master’s and Specialist level research</td>
<td>Survey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>courses?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What patterns—with regard to the inquiry process—would emerge as students</td>
<td>Student artifacts gathered throughout the</td>
<td>Researcher field notes</td>
<td>Student research-related products</td>
</tr>
<tr>
<td>engaged in required tasks, activities, and action research?</td>
<td>study</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ex: triangulation matrices, student-</td>
<td></td>
<td>Ex: IRB proposals, consent forms, assent</td>
</tr>
<tr>
<td></td>
<td>constructed surveys, interview</td>
<td></td>
<td>forms, research letters, and final papers</td>
</tr>
<tr>
<td></td>
<td>instruments, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which delivery method components—onsite, online, or cohort delivery—</td>
<td>Communications: Student discussions (onsite,</td>
<td>Student participant post-project surveys</td>
<td>Assessments of student progress as researchers</td>
</tr>
<tr>
<td>assist in developing research orientation, skills, and in facilitating</td>
<td>cohort, and online) and email messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the research process among graduate students?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Research Procedures*

The study began with a pre-semester analysis of current content and course requirements in place and as part of the course outlines for: a) AERO 6610, SPSE 6140, SPSE 7010, FOED 7610, and SPSE 7090. The researchers determined that the following revisions were needed:
• AERO 6610 / Introduction to Research Methods – The course focuses on specific methods, developing research tools, research processes, and evaluation of research. Application activities were integrated into all units of study. These activities required students to engage in individual and collaborative tasks such as designing and implementing surveys, analyzing field notes, designing overarching questions, identifying data sets, and completing triangulation matrices. The course is the first graduate level research course required in the Aerospace programs, therefore, students did not complete individual action research projects. However, data were collected after students completed application activities.

• SPSE 6140 / Teacher Leadership for School Improvement – The course, which focuses on leadership within a variety of educational settings, mentoring, and professional development, is taught entirely online. Due to the existing course content, the researcher determined that a unit focusing on action research would be beneficial. An in-depth action research unit of study was integrated into the course requirements. Students completed Human Subjects training, developed research proposals which reflected a self-identified problem or issue within the work-based environment, and completed action research projects. Findings were reported in a formal paper as well as in an IRB Final Report.

• SPSE 7010 / Educational Research Methods – The course is an advanced research course and part of the research block for the Education Specialist degree in Curriculum and Instruction with specialization in Technology and Curriculum Design. The course is taught entirely online as part of an online program. Course material includes an in-depth study of research methods. Students engage in a variety of application activities as well as engage in daily interactions via an online Discussion Forum which focuses on specific research topics within the unit of study. Students are required to complete Human Subjects Training and develop proposals for IRB approval. The course is completed during the fall; however, students enroll in the second course in the research block, FOED 7610, the following semester (spring) in order to complete individual research projects.

• SPSE 7190 / - This course is a core requirement for the Education Specialist degree in Administration and Supervision. The course is offered off-campus as students enroll in cohort groups and attend class at remote locations. The structure of the course requires students to attend class sessions—delivered in workshop format—on Friday nights and all day Saturday. Students who enroll in this particular cohort class are either practicing teachers or administrators employed in rural public school systems. As a result, the researcher determined that an action research component was needed. Students enrolled in the class completed Human Subjects Training, prepared proposals for IRB approval, and conducted action research studies from beginning to end.

Once the semester began, all students enrolled in the four targeted classes completed and submitted consent forms. Next, each student completed an online Perceptions of Research Survey (Figure 2). Although only two of the four classes were offered entirely online, all
researchers involved in the study had access to the D2L course delivery system. The survey was designed by the researchers and uploaded to each course shell. Students received instructions—either face-to-face or online—regarding how to complete the survey.

Figure 2. *Perceptions of Research Survey*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel confident in my skills as a quantitative researcher.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel confident in my skills as a qualitative researcher.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am usually good at identifying a problem, issue, or concern that leads me to further inquiry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have trouble identifying relevant problems, issues, and concerns related to my work environment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Although I am good at identifying problems within my work environment, I have trouble getting started with research beyond initial problem identification.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research is an important part of my current position as it helps improve practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am routinely engage in formal research within my work environment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I frequently collect and analyze data for research purposes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prefer to conduct research individually.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I prefer to conduct research collaboratively.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that all parties involved in a teaching/learning environment should engage in some type of research.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that the main purpose of research is to improve practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that the main purpose of research is to identify causal conditions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that the main purpose of research is to prove a hypothesis or to test something for effectiveness.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The main purpose of research is to study specific phenomena in order to inform and provide insight.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What role does research play in your current work environment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where does research fit in your current work environment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who typically conducts research?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What does research consist of in your current work environment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In your opinion, who should be involved in research?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Based on the last question, please provide an explanation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What are your research interests?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What should the purpose of research be within your current work environment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have previously conducted research and present findings to colleagues and supervisors.</td>
<td>Y</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have previously conducted research and presented findings at professional conferences.</td>
<td>Y</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If “Yes” to the two previous questions, please describe the study, data, and audience.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Survey responses were collected electronically, organized, and stored for later analysis. As units of study progressed, students completed assigned tasks and related activities. The researchers collected data on an ongoing basis through the semester. As data were collected, each researcher organized and stored the sets for analysis. Student artifacts such as proposals, papers, and research materials were collected and organized according to overarching questions. Discussion forum postings were saved and organized based on the unit of study and discussion focus. Each researcher kept a field journal and recorded entries throughout the study.
Data Analysis

In order to prepare for data analysis, all data collected were examined initially and then re-organized and aligned with the corresponding overarching questions. Copies were made of all original artifacts, papers, forum postings, and other related materials. Patton (1990) suggests that when working within the realm of qualitative methods, researchers must engage in epoche. Epoche is a process that requires the action researcher to reflect and remove any biases, views, perceptions, and assumptions regarding the research environment, interactions, and related activities prior to engaging in the analysis process. Epoche assists the researcher in looking at the data with a fresh viewpoint. By consciously setting aside imposing factors, the researcher is able to critically analyze the data thereby prompting valid, informative, findings and conclusions. Once the researcher engages in epoche, the analysis may begin. Typically, data analysis in a qualitative action research study is inductive as opposed to deductive. Inductive analysis involves collecting data to inform inquiry. There are no predetermined ideas regarding the action research.

Strauss and Corbin (1990) suggest three approaches to analyzing qualitative data. The approaches range from low-level analysis and interpretation to high-level analysis and interpretation. The lowest-level is similar to the work of a journalist—as data are collected with little analysis involved. Results are reported on face-value based on data only. The second level, recognizable reality, involves collecting data and engaging in analysis for the purpose of describing events, interpretations, and meanings. The last and highest level of analysis and interpretation involved building theory based on an intricate analysis of data collected over a period of time. The analysis requires the researcher to engage in the constant comparative method of analysis. The method entails coding with a simultaneous comparison of each unit of data in order to determine and derive meaning. The result is the development of a grounded theory based on meanings derived from the analysis (Glaser and Strauss, 1967; Maykut and Morehouse, 1994; Strauss and Corbin, 1990).

The researchers followed the process of analysis outlined by Maykut and Morehouse (1994):

Step 1 – Organizing the data – creating an organization system as data are collected
Step 2 – Initial coding – assembling and aligning the data with overarching questions
Step 3 – Unitizing the data – copying and organizing
Step 4 – Discovery – Discovering emerging themes and categories
Step 5 – Defining the categories with attributes / writing the rules of inclusions
Step 6 – Exploring patterns and relationships across data sets

In addition, the researchers relied on the three basic coding processes suggested by Corbin and Strauss (2007). First data were broken down. Open coding was used to initially categorize the units. Next, the data were coded selectively. Each unit was assigned a core category and compared to other units, which were assigned different categories. The researchers further examined the data units with regard to relationships among categories.
Last, axial coding was used to realign the data in order to derive meaning and identify any connections between categories.

Findings and Conclusions

Clandinin and Connelly (2000) suggest that stories illustrate the importance of learning and thinking narratively as one frames research puzzles, enters the inquiry field, and composes field texts and research texts. In order to provide a rich and thick description of what took place, the following findings are organized by: a) overarching questions and b) categories that emerged as a result of data analysis (Figure 3).

Figure 3. Overarching Question #1 Triangulation

Overarching Question #1 / What preconceived views or perceptions of research are held by graduate students enrolled in Master’s and Specialist level research courses?

Analysis of three data sets—survey response, researcher field notes, and discussions reveal the following themes regarding views and perceptions of research:

1. Theme #1: “It’s All About the Numbers” – Response to survey items indicate that—although only a few students were currently engaged in research—an overwhelming number indicated a high degree of confidence conducting research that involved quantitative methods. Open-ended survey items support this with comments such as:
...as teachers, we look at test scores all the time
...we use the scientific research-based method for instruction
...I have to collect data on scores each month
...research consists of testing a hypothesis
...during research, you use statistics
...my principal and I number crunch and create spreadsheets

(Perceptions Survey / Student Responses to Open-Ended Items)

This theme was repeated in student discussions during the first few weeks of the semester. An analysis of student discussions—during online forums and onsite discussions—indicate that students feel confident in conducting quantitative research. Many felt that because they—as teachers—work with data in the form of test scores, that this process involved some type of quantitative research. The theme was also repeated in field notes recorded after class sessions, observations, or after facilitating online forums. Last, many participants who were also practicing teachers shared that they were required to use scientific research-based methods in reading, language instruction, and math instructions. The overall perception of the concept of research was that research consisted of: a) identifying a problem, b) developing a hypothesis, c) collecting numeric data, d) conducting a statistical analysis, and e) reporting findings.

2. Theme #2: “Now, That’s a Problem” - Response to survey items indicate that—although all participants felt that they could easily identify problems, issues, and concerns within the practicing environment, the participants did not feel confident in moving forward with inquiry. For example, responses to survey items as well as open-ended items reveal a high degree of confidence with problem identification. However, when those responses were compared to open-ended responses regarding level of confidence in moving from problem identification to research design and implementation, most participants indicated that “formal research” had yet to be conducted. In addition, although some participants indicated that they did not engage in research, the open-ended responses of the same participants presented a picture of contradiction. Student responses:

...I have suggested some ideas for improvement, but have not conducted research
...I have yet to do a formal research project
...I only do informal research for myself in my own classroom
...I have never been involved in a formal study
...I have not conducted a study or presented findings yet
...formal research is not an everyday thing for me
...none – I upload boxes at UPS
...I don’t do any research – I’m too busy testing students and analyzing test scores
...I only examine methods and then try those to see which will be most effective
...I review different materials and books and then test those to see what works

(Perceptions Survey / Student Responses to Open-Ended Items)
It should be noted that although the majority of responses fell into the category of “no research yet,” there were several participants who indicated that they had conducted some type of research. Student responses:

…I did a paper on the future threats to the Florida Everglades
…I presented an Action Research project to university students and faculty
…I conducted a survey on the effectiveness of the Mass Communication graduate program web site
…I presented a workshop on team teaching to faculty – data were observations, journals, and interviews
…not a formal study, but I examine video breakdown and quantitative analysis on a weekly basis

(Perceptions Survey / Student Responses to Open-Ended Items; Discussions)

This theme was repeated in student discussions both online and onsite. Researcher reflective field notes reveal similar patterns in student perceptions. Most students felt confident in problem identification. However, although some were conducting research they did not feel confident that they were indeed engaging in inquiry. At this point in the analysis, the researchers identified a sub theme within the larger theme. The sub theme and attributes follow:

Sub theme: “I’m a Researcher?” – Based on data collected, the researchers identified the sub theme due to the contradictions in responses. The participants were identifying relevant problems and were engaging in inquiry. However, due to their perceptions of research as consisting of a study involving quantitative methods—most did not recognize themselves as researchers nor did they seem to realize that research did not necessarily have to consist of numerical data and statistical analysis. According to Craig and Patton (2006) this unrecognized, unrealized concept may be termed, research orientation. The participants at this point did not have confidence or skills needed to utilize their own research orientation, therefore, they did not see themselves as researchers conducting research within the work-based environment.

3. Theme #3: “Waiting on the World to Change” - Of the three themes that emerged as a result of data analysis related to overarching question #1, Theme #3 is perhaps the most interesting and intriguing. In response to survey items and discussion topics regarding the purpose of research, most participants felt that the main purpose of research was to improve practice. The theme was repeated in several survey items as well as in open-ended response offered by participants. A comparison of both survey items and open-ended responses yielded the same information confirming the views of participants that research is conducted to make improvements and change current practice. Student responses:
Research is very important in my work environment. It helps to improve conditions. It helps to solve problems. We can study an issue, try things out, and make improvements. I use methods that other colleagues have tried out. If they hadn’t done that I couldn’t improve my teaching. Research shows where teaching needs to be improved. Research invites the task of improvement. The findings result in changes for the better. Research helps me improve my classroom environment and increase rigor.

(Perceptions Survey / Student Responses to Open-Ended Items; Discussions)

Related to the concept of “research to improve practice,” participants were asked who they felt should be involved in research. Overwhelming, the responses indicated that everyone and anyone should be involved. To further explain, student responses in discussion forums as well as on open-ended items which asked who should be involved in the process repeatedly included the following words and phrases:

anyone; everyone; all those involved; all those affected; academia and people involved; teachers and principals; students, parents, and teachers; all parties; all of us; faculty and staff; the school community; anyone who has a ‘stake’

(Perceptions Survey / Student Responses to Open-Ended Items; Researcher Field Notes; Discussions)

However, given the perceptions voiced (Theme #2) participants—who do not feel that they themselves are researchers—are somewhat suppressing their skills as researchers and taking a backseat in effecting change. Researcher reflective field notes support this concept. Although the responses indicate that “anyone and everyone” should be involved in the research process, the participants do not include themselves as researchers. Hence, the title of the theme.

Analysis next moved to Overarching Question #2. Data sets were aligned and examined for triangulation purposes (Figure 4). The researchers systematically analyzed the data sets, coded, and re-examined looking for recurring patterns. Last, themes, categories, and attributes and rules were defined. It should be noted that due to the nature of action research, participants who engaged in the process did not follow a uniform set of steps. Although an action research project was to be conducted to meet course requirements, students completed the assignment differently as defined by course requirements and guidelines. Projects were very unique and individualistic based on: a) course requirements, b) student-designed projects, c) practicing environment, and d) student interests.
Figure 3. Overarching Question #2 Triangulation

Overarching Question #2 / What patterns—with regard to the inquiry process—would emerge as students engaged in required tasks, activities, and action research?

The analysis of data began with an examination of student artifacts collected throughout the study. Artifacts included: a) course application assignments, b) student-designed research tools such as interview instruments and surveys, c) sets of overarching questions, and d) triangulation matrices. The artifacts collected were all part of course activities and related tasks. Next, the researchers conducted an analysis of student research-related products. The products included: a) Human Subjects Training, b) any related communications such as questions to the professors, c) consent forms, d) assent forms, e) cover letters, f) IRB proposals, g) final IRB Reports, and h) final research papers. Last, an analysis of researcher reflective field notes was completed. The analysis procedure followed the same steps as previously described. The following findings are offered.

1. Theme #1: “The Researcher’s Apprentice” – Artifacts consisted of items collected as a result of application activities related to course content. An analysis of student artifacts and completed course tasks reveal that most students were apprehensive in tackling research-related activities such as designing surveys and interview instruments. Although most students were operating at a high level of technological literacy, many were reluctant to utilize online resources such as Survey Monkey (www.surveymonkey.com) for assistance when constructing surveys. An assignment requiring students to design an interview instrument for open-ended interviewing yielded a majority of instruments which included closed, yes/no items. In addition, the low level of confidence was revealed in the large number of questions posed to the professors. This was more apparent in the online
courses. The participants—for the most part—wanted assurance and guidance relying to a large degree on the expertise of each professor. Most participants did not “venture out” or take any risks when designing instruments such as surveys and interview instruments, but rather, waited for affirmation from the professor before finalizing.

When designing overarching questions as an application tasks, most students experienced difficulty in forming questions that reflected an overarching nature. For example, many overarching questions were selected from the previously designed survey instrument. Given the nature of a Likert Scale-type survey, the questions were not appropriate nor could they be considered, overarching. When asked to revise the overarching questions, most participants repeatedly asked for guidance from the professor.

Identifying data sets to inform overarching questions was equally difficulty for most participants. Difficulties included: a) identifying appropriate data sets to inform the questions, b) omitting the possibility of using field notes, and c) using the same sets of data for all questions even when not appropriate.

However, once the professors realized that the participants needed additional guidance, course activities were revised to include additional examples selected from each professor’s personal research. Although examples selected from online sources, textbooks, and conference sites were used, the addition of personal research selected from professor-conducted studies assisted the participants with completing course activities. Researcher reflective field notes support this theme. The concept of the researcher’s apprentice defines the theme due to this phenomenon.

2. Theme #2: “Apprenticeship Continued…” – As the course progressed and students completed tasks and units, they began to gain a better understanding of the research process as well as methodologies. Participants enrolled in three of the four classes completed Human Subjects Training (HST). Questions were recorded and HST certificates were collected. The understanding and skills participants developed as a result of completing tasks and units were applied when developing research proposals for IRB approval. The researchers gathered research-related products which assisted in informing the inquiry. During analysis of the products and field notes, several patterns emerged.

Researchers recorded field notes as students completed HST. The training was completed via online modules and testing. Many students experienced difficulty making sense of the information and relating the information to their own situations. For example, HST consists of an in-depth discussion of previous cases and studies involving human subjects, testing, and medicine. Participants began viewing the training modules and then stopped to ask questions regarding why the training was necessary. Although all completed the training many did not make the connection between the training and their own research.

An analysis of processes participants utilized while developing their research proposals for IRB approval reveals that most participants had a hard time distinguishing between consent and assent forms. In addition, many experienced difficulty when writing cover letters stating that the difficulty came from the fact that the terms used in the template
would be confusing to parents who would be asked to read the letter and sign the consent forms. Developing assent forms was equally difficult. One participant explained that kindergarten students would not “get the concept” of the research. Participants progressed to the point where they were so caught up in designing consent and assent forms that they forgot that a proposal was also needed.

Using the university template for IRB proposals, many participants did not make needed changes in terms nor did they—on first attempt—include any information regarding the method they intended to employ for their studies. Additional assistance was required on the part of professors who began to serve as the “expert researcher” to the researcher’s apprentice again. Examples were needed; however, most participants wanted examples designed by the professor. The confidence participants illustrated in the expertise of the professor was very high and very surprising. In general, IRB proposals went through multiple draft stages before finally being submitted for approval. This process was similar when submitting the IRB Final Report. However, the final research papers were well-organized, well-written, and followed a typical format for presenting findings. The papers went through one draft before the final papers were submitted.

When asked what would assist participants in completing future proposals, the overwhelming response was, “examples, examples, examples.”

Overall processes and patterns included:

Need for personal examples supplied by the professor.

High degree of reliance on professor expertise.

Display of mistrust of the IRB process as many participants voiced a concern that their proposal would be denied because they were “just teachers” and not scientific researchers.

Need for several drafts to build confidence.

Specific clarification regarding consent and assent forms.

Encouragement throughout the process and affirmation that the work, research idea, and skills were valid.

One additional finding that is of importance is that a majority of participants—as the proposals were developed—determined that a qualitative approach best met the demands of the inquiry. This is in contradiction to Theme #1: “It’s all about the numbers” identified in the analysis process for Overarching Question #1. Participants at the beginning of the semester—prior to completing any units of study—viewed research as quantitative in nature. After completing units of study focusing on both quantitative and qualitative methods, most proposals revealed that qualitative methods were needed to facilitate the inquiry. The researchers determined that the change in views on the part of the participants might have been encouraged by additional knowledge of research methods
and application of the methods to personal action research studies which take place in practitioner-based settings where a wide variety of data are available.

Finally, analysis moved to Overarching Question #3. Data sets were aligned and examined for triangulation purposes (Figure 5). The researchers systematically analyzed the data sets, coded, and re-examined looking for recurring patterns. The focus of the overarching question required a careful comparison across data sets collected from: a) onsite participants, b) online participants, and c) cohort participants. The researchers examined each data set with regard to the type of delivery as well as level of course and course requirements. The analysis procedure followed the same steps as previously described. The following findings are offered.

Figure 5. Overarching Question #3 Triangulation

1. **Theme #1: Making the Connection** - After careful analysis of the data sets, the researchers compared information across delivery modes. Although the delivery modes were distinctly different, the researchers determined that there is not one mode better or more effective than another when teaching a research course. Rather, curriculum must be altered and revised in order to address the characteristics and issues unique to: a) student enrollment, b) student prior experiences with research, c) student perceptions and views of research and d) course content. A well-designed research course that reflects applicable information and which encourages the development of research orientation is the key to student success as researchers. The connection between course content, relevancy, and research orientation is critical.
However, there are specific issues related to each delivery mode that the researchers identified as a result of data analysis.

Online Delivery - The absence of face-to-face in the online environment required the professor to devote additional time and hours in effectively responding to numerous individual email messages from participants. The online participants needed regular encouragement as well as professor empathy with regard to the fact that they were not full time students and that—within each individual school—there were other research obstacles. These obstacles included: a) administrators who did not think research was important, b) central office structures that delayed approval, c) time constraints, d) reluctant parents, and e) personal responsibilities. Participants expressed a concern regarding the number of problems identified within the work-based setting. Many developed lists and prioritized the lists selecting the top priority for course action research and saving the others for later research. In addition to obstacles identified by participants, many who employed qualitative methods had difficulty managing the amount of data collected. This led to difficulties when conducting analysis. However, the participants who employed qualitative methods shared that they enjoyed the research and had intentions of conducting subsequent studies. The level of excitement when sharing findings was high—indicating that participants finally reached a level of confidence in them as researchers.

Onsite Delivery – Onsite delivery was a traditional class which met once each week for three hours each session. The participants were graduate students—each facing a research-based thesis project required for graduation. The participants were eager to learn about research methods, however, tentative and unsure of themselves about how to get started. The professor spent a large degree of time encouraging the students that they could become researchers and that research in itself was more than just a graduation requirement. Many of the participants did not realize that research was an important part of their chosen field of aviation. Most of the students had never seen a research report which presented findings from a study conducted with a strong aviation focus. Participants were quite relieved when they discovered that research could actually be a tool to assist in solving problems in a field that they have great interest in. Course textbook was a non-aviation research text. This required the professor to provide examples of how each method could be utilized and applied to the field of aviation. The professor integrated published research reports from scholarly journals featuring aviation research to relate standard methodologies to aviation applications. As a result, the students became more comfortable and even excited about conducting their own research since they saw a direct relationship to their field of study.

Cohort Delivery – Although participants met face-to-face, they experienced similar problems that the online participants experienced. The cohort participants were all teachers, therefore, facing the similar concerns and obstacles as the online participants.
Discussion and Suggestions

For those embarking on the “teaching research” journey, attention must be given to: a) making content relevant, b) student prior experiences, c) delivery, and d) application. When designing a research course, careful selection and development of course material is critical. Based on the study, the following suggestions are offered:

1. Prior Knowledge - Consider prior research experience of students. Entertain the thought of implementing a pre- and post-course needs assessment survey to determine the level of student confidence and skills. Use the information to align lessons with student needs.

2. Student Perceptions – Student perceptions and views will affect the development of research skills and research orientation. By providing relevant and applicable examples reflecting a variety of research methods in different situations assists students in re-examining their preconceived perceptions and views. Engage students in meaningful discussion in order to exchange ideas. The interaction and examples help students develop new schema regarding research and research processes, therefore, enabling them to make better decisions regarding suitable and appropriate methods.

3. Course Content – All too often the content contained in graduate level research classes is non-applicable and theoretical. Novice researchers—who emerge as the researcher’s apprentice—have difficulties applying the theory and connecting the information to their individual work-based environments. Consider curriculum design and how it relates to integrative connectivity with regard to research and practitioner settings. Infuse the course curriculum with applicable activities designed to meet: a) the needs of the program and c) the needs and interests of the students.

4. Delivery – A well-designed course does not depend on the delivery mode in order to be successful in assisting students develop targeted skills and competencies. By addressing student experiences, student perceptions, and course content, the research course professor is better able to present and deliver an enriching, relevant experience. Using these three components and integrating ongoing opportunities for students to engage in rich and varied discourse ensures success and encourages the researcher’s apprentice to emerge as a strong researcher.

In general, participants exited each course with the idea that research was within their realm of possibility. In addition, participants now viewed research in on a larger scale instead of the narrowly held entrance views that research consisted basically of quantitative methods. Last, as a result of the inquiry participants felt that research was a tool which could easily be utilized to make a difference and improve practice. Research was no longer a concept that was impossible, uninteresting, and unachievable—but rather—research was now something that could be utilized to facilitate positive change and improvement.
References


Contact Information:

Dr. Dorothy Valcarcel Craig  
Professor of Education  
Department of Educational Leadership  
PO Box X-147  
Middle Tennessee State University  
dvcraig@mtsu.edu  
[http://www.mtsu.edu/~dvcraig](http://www.mtsu.edu/~dvcraig)

Dr. Kyle Butler  
Associate Professor of Education  
Department of Educational Leadership  
PO Box 91  
Middle Tennessee State University  
kbutler@mtsu.edu  
[http://www.mtsu.edu/~kbutler](http://www.mtsu.edu/~kbutler)

Dr. Paul A. Craig  
Professor of Aerospace  
Department of Aerospace  
Middle Tennessee State University  
p craig@mtsu.edu  
[http://www.mtsu.edu/~pcraig](http://www.mtsu.edu/~pcraig)

MTSU IRB Approval: 08/23/07  
Protocol #08-019