Exploring Students’ Conceptions of Research and Inquiry

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A. Research Narrative

1. Purpose of the investigation and research objectives

   The purpose of this study is to understand how graduate students in an introductory research methodology course (EDUC-Y520: Strategies in Educational Research) conceptualize “research” and “inquiry,” and to examine whether and how these conceptualizations might change as a result of participation in the course. By better understanding students’ conceptions of research at the start of the semester and changes throughout participation in the course, we hope to improve course delivery as reflected both in curriculum and pedagogy.

   Given our (four instructors who teach such courses) previous teaching experiences in this class, we have come to a consensus that students’ conceptions of “research” play a central role in how they approach learning in this course. For example, we have noticed there is a disconnect between students’ expectations regarding research and their daily (professional and personal) practices. Many Y520 students assume that doing research is irrelevant to their professional experiences (i.e. teaching, counseling, and higher education administration), which often greatly undermines their motivation in this class. We expect that at the most fundamental level, students’ life experiences and identity claims shape their understanding of what research entails and their motivation for learning. Furthermore, students often bring a “positivist-like” understanding of research to class and tend to hold to the idea that conducting research in the social sciences is all about experiments, control group, numbers and so on.

   During this course, students are exposed to a variety of different, even contradictory, ideas about what research entails, reflecting ongoing debates on the paradigms within the field of research methodology itself (Lather, 2006). It is thus crucial for us to understand how students make sense of diverging and competing notions about research. It is also pedagogically important for us as instructors to structure class content and pedagogy in ways that effectively facilitate student learning based on this understanding. All these reasons serve as the impetus for carrying out this study, which asks the following research questions: 1) How do graduate students in an introductory research methods course conceptualize the notion of “research”? 2) How does participating in this course shape students’ conceptualization and understanding of “research”? We will be collecting data from both face-to-face and on-line sections of Y520 in Spring and Summer 2013, with the possibility of collecting additional data in additional semesters.

2. Existing Scholarship

   There is a paucity of existing scholarship relevant to teaching inquiry courses. The empirical literature can be organized into two main categories: 1) effective pedagogical approaches and methods for teaching a research class, and 2) students’ and researchers’ general conceptualizations of the concept of “research.” The first category centers on pedagogical methods for teaching research methods classes in the social sciences. Examples include: “active cooperative learning” (Ball & Pelco, 2006), “student-centered approach” (Barraket, 2005), “student-centered tutor-led approach” (Edwards, 2004), “experiential and heterodoxical approach” (Hubbell, 1994), “problem method” (McBurney, 1995), “group project teaching technique” (Ransford & Butler, 1982), “learning by doing” (Takata & Leiting, 1987; Winn, 1995), and “mixed method approach” (Tashakkori & Teddlie, 2003).

   As a whole, authors of this scholarship argue for the merits of incorporating problem-based tasks and student-centered learning elements into research methods classes. Despite being pedagogically informative, however, these studies focus primarily on the logistics or outcomes of implementing these pedagogical methods. They are also predominantly grounded in the fields of psychology, sociology and political sciences. Issues surrounding how students and teachers
conceptualize “research” in the context of learning and teaching inquiry, as well as its intersection with pedagogical dynamics have not yet been specifically explored in those studies.

The second body of literature addresses how “research” is conceptualized from the perspectives of students, research supervisors and senior researchers. For example, Meyer, Shanahan, and Laugksch (2005) conducted a survey to explore how doctoral students conceptualize research and they identified seven categories of descriptions on such conceptualization. Two other studies examined research supervisors’ conception of research in general. Bill (2004) identified that university-based research and researchers are privileged in participants’ discourse. Kiley and Mullins (2005) investigated how research supervisors of doctoral students conceptualize research and how they perceive the relationship between their own conceptualization and those of their students. In addition, Brew (2001) also examined how established researchers conceptualize research from qualitatively different perspective. This set of studies is closer to the study we are proposing than the first category of research. Interestingly, this set of literature all comes from universities in Australia – we did not come across many studies conducted on this topic in the U.S..

In our review of the current literature, we found only a few studies related to teaching graduate-level research/inquiry courses. It is clear that our current understanding of students’ conceptualization of “research” as well as the evolution of this conceptualization throughout the course of a semester is weak. Existing studies tend to focus on producers and future producers of research rather than students who will primarily be consumers of research after graduation. We also note many studies are descriptive or prescriptive in nature and not necessarily oriented towards taking action to change and improve teaching practices based on the results. These patterns affirm the need to carry out more student-centered action research in the domain of teaching inquiry courses that focuses both on student understanding and pedagogical innovation. This sets the stage for our project.

3. Significance and impact the study may have upon undergraduate or graduate teaching, learning and assessment

As a core course required for most of the graduate students in School of Education, Y520 plays a significant role in both exposing students to the fundamental principles of social science research and providing them with hands-on skills to conduct and consume research. In addition, discussions within the Inquiry Methodology Program point to significantly changing the delivery method of Y520 in the coming academic years. We believe that this study will therefore not only offer a platform for us as instructors to reflect upon and improve our own teaching practice, but will also benefit the forthcoming course reform. Moreover, implications will extend beyond Y520, since similar methodological courses are taught campus across a number of different social science disciplines.

Specifically, we anticipate a two-fold impact of this study. First, the research will reveal students’ baseline understanding of research. Using this baseline as a foundation, we can better frame the delivery of Y520. We see this as a particularly urgent need for Y520 students since they are mostly educational practitioners, typically having little or no exposure to social science research. It thus is important to frame the course in a way that enables them to connect research with their daily practice while simultaneously providing critical knowledge about methodology. Second, we hope that tracking changes in students’ understanding of the concept of research over time and reaching a better understanding of how changes occur (i.e., through critical teaching moments vs. other life experiences, etc.) will also help us adjust the course curriculum and choose appropriate pedagogical techniques. In other words, this data will help us better understand what is working about the course content and delivery methods, and what might be improved.
4. **Outcomes of the work and how they will contribute to the assessment of student learning at Indiana University**

Based on the first phase of this study, we anticipate three primary outcomes:

**Brown-Bag Dialogue.** The Inquiry Program engages in a Brown Bag discussion group that meets once a week. The researchers will share findings with the inquiry community for feedback and to report on student conceptualizations and implications for teaching.

**Course Reflection.** The findings will directly relate to the theoretical groundwork of the course, including better understanding the role assignments play in the development of students’ conceptualizations of research and inquiry. Specific assignments will provide researchers access to learner’s conceptualizations and this will make it possible to use those conceptualizations as a way to reflect on the course content and pedagogy.

**Report to Program.** The Inquiry program faculty has struggled with how to deliver meaningful learning experiences through Y520, and as mentioned above, faculty of the Inquiry Program are presently engaged in rethinking the instructional needs of the class. To facilitate this, a succinct report will be provided to the Inquiry Program Area presenting the results of the study. This report will include analyses enabling reflection on the curriculum and the learners. Analysis of data will provide the Inquiry program with a deeper understanding of student pre-conceptions of research and inquiry and will allow us to identify the conceptual challenges faced by learners. Analysis will also provide us with a deeper understanding of the ways in which class activities serve to promote learning, which can be utilized to develop course curriculum. We will also utilize this report as the basis for producing refereed journal articles and conference presentations.

5. **Research methodology**

We have designed this study as a critical action research project. Action research design blurs the traditional distinction between researchers and practitioners and effectively shortens the distance of the transformation from academic findings to teachers’ daily practice. In this study, we integrate practice and research, thus taking on a dual-role as both instructors and researchers. The research design is critical in terms that it is framed by the meta-theoretical framework provided by critical qualitative research methodology (Carspecken, 1996). It will also employ a series of techniques developed by critical methodologists for collecting and analyzing the data.

We will collect the data primarily through archived class discussions and student assignments from both face-to-face and online sections of Y520. This includes formal course assignments, in-class discussions (for the face-to-face class) and online postings in the Oncourse forum (for the online sections). We will also conduct individual interviews, approximately one hour in length, using a semi-structured interview protocol. We will record these interviews and transcribe them for analysis.

Our initial analyses will consist of open coding of written course materials and interview transcripts, using open coding techniques. We will utilize the qualitative data analysis software package NVivo to enable collaborative coding and analysis. Meanwhile, we will also utilize critical research techniques such as meaning field analysis and validity horizon analysis (Carspecken, 1996) on some excerpts of the data so that we will not miss rich background meanings of the data. Our analysis as a whole will focus on identifying and further analyzing emergent themes related to students’ understanding of research/inquiry, how their understanding evolves, and in what sense they connect this understanding to their educational practice.

6. **Means by which you will measure the success of your project.**

The goals of the project are to understand student conceptions of research and inquiry and to understand how these conceptions develop through the engagement in the Y520 course activities. These goals will be measured in the following ways:
• An article accepted for publication in a peer-reviewed journal or research conference where the judgment of peers on the analysis addressing both research questions will indicate scholarly success.

• An outline for the reform of the class and a new text relevant to the reform, particularly attentive to the theoretical development related to student conceptions of research and inquiry. This outline will be reviewed by colleagues in the field for feedback.

• Completion of all required products in the conduct of the study (including report to faculty).

• Researchers will reflect on the research process with the intention of contributing to the Scholarship of Teaching and Learning. Researchers have not yet had an opportunity to fully explore the Scholarship of Teaching and Learning, but we intend to investigate the inquiry process itself in ways that should contribute to the SOTL body of literature.

7. **Dissemination of results**

   We plan to disseminate the results of this study in a variety of ways that demonstrate the relevance of our inquiry to multiple circles. Dissemination of the results within the “local” community, such as submitting a report to the program, initiating Brown Bag dialogues and conducting course reflection, have already been mentioned in Part 4 of this narrative. In addition, we intend to disseminate our results in several forums related to the Scholarship of Teaching and Learning (SoTL). These include SoTL events at Indiana University-Bloomington, as well as submission of a paper proposal to the International Society for the Scholarship of Teaching and Learning (ISSoTL) 2013 conference in Raleigh, North Carolina, which at least one of the investigators will attend. The 2013 conference theme, *Critical Transitions in Teaching and Learning*, resonates particularly well with our study, which not only investigates student learning but also exemplifies an opportunity for building partnership and collaboration among instructors in reflecting on approaches to assessing teaching outcomes. Based on feedback in SoTL and other forums, we intend to submit a manuscript for submission at a SoTL-oriented journal, such as *College Teaching*.

   We also hope to disseminate the results of this study beyond the SoTL community. Tentatively, we plan to present results of this study at the 2014 *International Congress on Qualitative Inquiry* and will submit a manuscript for publication in a journal focused on methodology (e.g., *International Journal of Qualitative Studies in Education*). Ultimately, we would like to use this project as the foundation for producing a new textbook oriented towards the teaching of graduate-level introductory research methodology courses.

8. **Reflective teaching practices**

   As a group, all investigators of this study have been engaged in a variety of reflective practices since this study was first conceived. These practices relate to this project, specifically, but also more broadly to our individual and collective efforts as instructors of Y520.

   As instructors of this course, our reflective practices so far have included the following:

   • Individual reflections on our own conceptualizations of research and assumptions regarding research/teaching research, as well as a group discussion on these written reflections

   • Individual reflections on our own expectations and pedagogical assumptions regarding teaching Y520, as well as group discussions and comments to one another on these written reflections

   • Individual reflections on our perceptions regarding learning objectives for Y520, both at the overarching course level and in terms of specific objectives for each topic covered in the class, and group discussions about these individual reflections.

   Through our discussions, we have succeeded in coming to consensus regarding our objectives for Y520 as a course as well as objectives for teaching about different content area
topics, such as ontology/epistemology and objectivity/subjectivity in research. Further reflection has enabled us to decide upon readings, activities, and assignments that we feel will help us best meet those objectives during the Spring 2013 and future semesters during which we teach this course.

As we begin the Spring 2013 semester, we are engaging in ongoing reflection to jointly reflect upon our experiences utilizing new tools for teaching this introductory research methodology course. We plan to continue reflecting as a group throughout this and future semesters, and have discussed possible approaches for creating a structured forum where Y520 instructors (who change from year to year) can engage in joint reflection and learning on a continuing basis.

References:


B. Budget narrative

During our first year conducting this study, we anticipate costs to total slightly more than $2000. These costs include the following:

- NVivo (qualitative data analysis software): NVivo is available at a discounted rate through IU at a rate of $75/year for students. Barbara Dennis, principal investigator, already has access to this software. Thus, student access is needed for the 3 co-investigators. Total cost: $75*3 = 225

- Transcription costs: We plan to pay for the transcription of approximately 10 interviews collected with former Y520 students. We anticipate that interviews will last approximately 30-60 minutes (average length: 45 minutes). At a cost of $1/minute, transcribing 10 interviews will cost a total of approximately $450.

- Graduate assistants: Funding from a SoTL research grant will be utilized to help support work of the three graduate investigators on data analysis during Summer 2013, at a rate of $500/graduate investigator. Total cost: $500*3 = 1500.

- We intend to send at least one investigator from this project to the 2013 conference of the International Society for Scholarship of Teaching & Learning in Raleigh, North Carolina. Anticipated costs for this conference include registration ($200, estimated based on the 2012 ISSoTL conference); housing ($180, estimated at a rate of $60/night for 3 nights); and travel ($250, estimated flight cost). Total cost = $630.

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>NVivo software</td>
<td>$225</td>
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<tr>
<td>Transcription costs</td>
<td>$450</td>
</tr>
<tr>
<td>Graduate assistant funding</td>
<td>$1500</td>
</tr>
<tr>
<td>Conference funding</td>
<td>$630</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$2805</strong></td>
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C. Research plan and timeline

Over the coming year, we plan to collect our initial set of data and conduct analyses that we will use to inform future semesters of Y520 instruction. Since Y520 is taught during every semester (including summer), our data collection and analyses processes will overlap and inform each other in an iterative manner.

Our research timeline during 2013 and 2014 is as follows:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Spring 2013</td>
<td>• Initial data collection from 3 sections of Y520</td>
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<tr>
<td>Summer 2013</td>
<td>• Data collection from 1 section of Y520</td>
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<td></td>
<td>• Preliminary analysis using data collected during Spring 2013 semester</td>
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<tr>
<td></td>
<td>• Revision planning for future Y520 semesters</td>
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<tr>
<td>Fall 2013</td>
<td>• Data collection from multiple sections of Y520, based on revisions made during Summer 2013 semester</td>
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<tr>
<td></td>
<td>• Continued analysis based on data from Spring and Summer 2013 semesters</td>
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<tr>
<td></td>
<td>• Revision planning for future Y520 semesters</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>• (Possible) data collection from multiple sections of Y520, based on previous revisions</td>
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<tr>
<td></td>
<td>• Analysis and write-up of results from Spring, Summer, Fall 2013 semesters</td>
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<tr>
<td></td>
<td>• Submission of materials for publication</td>
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<tr>
<td>Summer 2014 and onwards</td>
<td>• Continued data collection and analysis based on Y520 teaching during these and previous semesters</td>
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<tr>
<td></td>
<td>• Continued revision of Y520 instruction based on previous analyses</td>
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