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Undergraduate Action Research: Using Best Practices to Assess Student Learning

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I have been teaching undergraduate research since 2003 at a small university. The research courses span over two semesters whereby candidates work with a university supervisor and a supervising teacher to research and design an intervention during one semester. They then implement and assess the intervention in the second semester while student teaching. Candidates choose a "best practice" based on their field of interest and supported by the School Improvement Plan at the school they are working in. During the student teaching, candidates implement a best practice, gather data, evaluate it, and make recommendations about their findings. I have found that the course not only prepares candidates for understanding the students they are teaching better, but it also teaches them what it means to be a professional.

Background

UNCA has been an undergraduate research institution since 1987. It is a licensure only institution as well. This means that all candidates major in a field of study and take courses for licensure in one of 18 licensure programs. Middle grade licensure candidates major in one of four areas (math, science, language arts, or social studies) and take coursework in a second area. They must take Praxis II in their second area of concentration so that they will be considered "highly qualified" by the state. Their program consists of 27 hours of education coursework plus the second area coursework. Three of those hours are a research methods block. The first hour takes place the semester before they study teach. The additional two hours are part of the student teaching semester.

In the past five years, candidates have participated in a student teaching exit survey with the Department Head to share their perceptions of their overall experiences of the licensure program. In addition to the interviews, they fill out surveys that indicate courses most and least beneficial, suggested improvements, comments about what we do well, and now we have added a comfort level survey with regard to parents, assessment, technology, and diversity. These data are used to guide and influence curriculum development. One of the more consistent comments on the least beneficial course has been the research methods block. (It is referred to here as a block because candidates have the same professor for two semesters.) In contrast, all of our candidates

are "comfortable" or "very comfortable" with assessing students.

Two years ago, one of the research instructors started giving a survey to identify the benefits of the research experience to candidates after they finished their research presentation. (All candidates present the results of their research at an Undergraduate Research Symposium, held on campus every semester.) They found that candidates had a much more favorable report of their research once it was finished and they had had the opportunity to share their results.

With these two issues in mind (least useful, and more favorable replies after the presentation), I decided to approach the class differently. Instead of talking about research and research methods, I presented the curriculum through the lens of assessment and knowing who the children are, and knowing whether what is happening in the classroom is making a difference. I used the same material, I just looked at it through a different "lens". The results of this approach follow.

Undergraduate Research at UNCA

Undergraduate candidates at UNC-Asheville engage in action research by taking two courses. They ask, design and answer questions which are specific to a classroom and seek to arrive at solutions which can be used to evaluate and improve teaching and learning (McGlinn, 2005). I began studying the current co-hort last spring after presenting action research as a means of assessment. Their first semester course involved choosing a topic, collaborating with their cooperating teacher, reviewing literature about their topic, and planning a methodology. We used Sagor's (2000) action research book. Candidates used peer editing, wrote and rewrote introductions, researched, wrote and re-wrote reviews of literature, and I worked with them one-on-one to design their study. At the end of the semester I asked candidates to reflect on how or if their view of research changed from the beginning of the semester.

Results. Ten members in the class responded to the question. I asked them how their view of research had changed and then I coded their responses to look for similarities. Eight of the ten candidates indicated that their view had changed. Six of the participants shared that they viewed research in a more positive light. They said, "It is more personal than my previous experiences;" "I find myself reading the research for pleasure," and "I like it." "It is more interesting," and "I am not as intimidated as I was." Two members responded with, "It's what you [are supposed to] do," and "I see this as a new way to look at research." This notion of professionalism and inquiry indicated a different view from how they first perceived research. My favorite comment was, "it [research] will be used instead of created." These responses suggest that approaching research as an assessment process could influence their perceptions of research.

This semester the same candidates are student teaching. I am their instructor for the second research course. During this semester they have implemented and are now analyzing the results of at least three different instruments that they used to examine their question. I have presented simple strategies for displaying data, and have met with them individually to show them how to analyze survey data, how to present grade data without running a t-test, and how to code anecdotal notes and interview data. Analyzing surveys, grade data, interview questions, and anecdotal notes has given them insight into the attitudes of their students, how their students have responded to interventions, and has given them a taste of research. They have also had the opportunity to share their experiences with candidates who are in their first half of the research block. This week they are peer-reviewing one another's Section IV, presentation of data.

Now that they have implemented their study and are seeing results, I asked them to reflect again on how their view of research had changed.

Results. Twelve of the 15 members of the class responded to the anonymous question, "What is your view of action research since you have been doing your research project?" Their responses ranged from loving it to finding that it is too much work. Table 1 indicates the breakdown of their responses.

Table 1: Candidates' Responses to Implementing Action Research During Student Teaching (N=12)

"I love research." n=4
"I see the value of it." n=3
"I have struggled with it." n=5
"It is too much work." n=3

There were three responses to being too much including: "publishing and reporting is a lot of extra work, I would rather participate in casual reflections;" and "it's a lot of work;" and "it has been very difficult to keep up with considering all the other things we have to do."

A second group of comments reflected candidates who struggled with the process: "It is important however, it is difficult to do and keep up with." And, "I wasn't able to give it the attention it deserved;" "The methodology put demands on my time that I would have rather used elsewhere;" and "It is hard to analyze lots of data." One other response was, "It was very useful, but I feel overwhelmed by the amount of data I have produced." These responses suggest that some candidates may have chosen data collection that was too time consuming to their regular day.

A third group of responses indicated that candidates valued the experience. "Action research looks for ways to improve your teaching and the quality of my students' learning" was one response, and "Action research held me accountable to use specific forms of assessment." A third response was, "It allows you to see the direct impact of what you are trying to learn or teach."

The most fun to read were the responses that indicated that some candidates have been inspired: "It has been wonderful," and "It is so much more helpful," and "It's a great feeling to know that I may be doing something to influence how others learn." Finally, one candidate said, "I have enjoyed it and I think it's a great way to see my impact on student learning."

Conclusions

Collecting data over time as these candidates develop as professionals suggests that action research benefits some candidates and frustrates others. I believe my role as a teacher is to now determine how to work with those who were frustrated compared to those who had no problem implementing their studies. Action research is a different way of approaching research and assessment. As educators of future teachers we need to find ways to create experiences that will prepare our future teachers for assessing their impact on student learning.

I believe those of us who prepare middle level teachers need to consider making the field placement experiences of our candidates deeper by implementing a sustained assessment experience. Based on our experiences of working with undergraduates in a three hour (spread over two semesters) course, I suggest the following considerations while creating an undergraduate research course.

First, start with a team of planners to research what has been done and how it will fit into your own program. You may be tempted to attach undergraduate research to an existing course. I have found that the experience, though better than nothing, is usually watered down. If we want our undergraduates to be leaders in the field of education, we must prepare them for leadership experiences. Those of us who teach undergraduate research meet

every semester to reflect on the experience, and we add more resources to our undergraduate handbook. We have had lively discussions on the differences between qualitative research, quantitative research, and action research. We have shared articles and discussed whether or not to use a textbook. We all use the same scoring rubrics, we all use peer evaluations, and we all meet with our candidates individually to help them with their projects. At the end of each semester we reflect on the quality of our students' presentations, share activities we do in the class, and update the handbook so that all the candidates are getting a similar experience. We work as a team, modeling for our candidates colleague collaboration.

Second, our students struggled with APA formatting and the difference between a research study and a study that references research in the first semester. Because of this, we decided to propose a plan of action across all licensure programs. This year the education faculty implemented APA and research studies in all our education classes. We believe that this focus will prepare our candidates so that by the time they reach the methods block, they won't have to learn these skills. This semester I saw students in two of the research classes (including mine) struggling with ways to display data. After meeting with each of my students, I took a summary of our approaches and shared them with another research class that was having similar problems. The summary data from our class will be helpful to others. We will be brainstorming ideas of how to help our candidates with this at the end of this semester.

Third, my colleagues and I have found that when candidates choose a similar intervention this provides them with a focus group to share research, methodology ideas, and reflection. Three math candidates are all looking at grouping in the classroom and its affects on motivation and academics, two candidates are looking at the impact of involving parents. I did group my students according to their licensure fields. One of our struggles is that candidates may tend to keep reviewing the same strategies. As a group of professors, we are trying to help them "get outside the box" by looking at common topics through different lenses. However, study skills, note taking skills, and higher order thinking skills are very important strategies that our candidates want to research.

Fourth, candidates must have the presentation experience. All of the candidates have been able to analyze their data and are presenting the results of their studies at the Undergraduate Research Symposium. (Research projects are presented in fields other than education at this time.) Afterwards we celebrate the completion of their licensure program. Our university values undergraduate research, but we as educators need to value the efforts and experiences our candidates are participating in. By sharing our research, we are modeling best practices of professional development. I have taken my students to conferences to present their data and it adds to their own professionalism. Completing an undergraduate research project is much more in-depth than sharing our projects. I believe that undergraduate research will help train our future leaders in education.

Final Thoughts

Sagor (2000) describes action research as an empowering experience. He talks about the value of action research in guiding teachers as well as schools in improving learning of children. Engaging in this type of systematic reflection about teaching is also one of the five core propositions for accomplished teachers according to the National Board for Professional Standards (PBPTS, 2005). In addition, the authors of *This We Believe* (2003) state the importance of knowing the students in a classroom and using best practices to make a difference in their lives. Furthermore, classroom research meets our state Core Standard 5: "Teachers are reflective about their practice; teachers analyze the impact of teaching on student learning" (NCDPI, 2005). And while NMSA (2005) supports teaching candidates about planning, teaching, and assessment, they do not specifically challenge middle level educators who are preparing middle level educators to engage in action research as a reflective

practice. I believe we must prepare undergraduates to become leaders in their fields and I believe that teaching undergraduates to conduct action research will serve them and their schools well.

The following studies are being conducted this semester:

Does grouping influence students' attitudes and grades?

Do the strategies of Love and Logic influence students' behavior in a classroom?

Does the use of multimedia impact students' understanding and retention of material?

Do math journals impact students' problem solving skills?

Does the use of paintings increase students' writing skills?

Does the use of learning styles increase students' motivation and increase their grades in a science class?

Does the teaching of study skills impact students' grades?

Does the Active Word Choice impact students' enjoyment of vocabulary and grades?

Do parent activities increase students' participation in the classroom?

Does mentoring increase students' participation and grades?

Most of the studies take place between two and six weeks and involve one strategy. Most of the studies use a pre- and post survey and grades. Some use journal writing.

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