Efficacy of Research Curriculum in Educator Preparation Programs

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The purpose of this study is to examine the perceptions of advanced program master’s degree teacher candidates of the impact of a research-based capstone project.

Capstone projects as a requirement for program completion exist in many disciplines. What these projects entail varies widely; but in general, the purpose is to provide the degree candidate with an opportunity to complete a performance-based activity that shows learning across courses in a program of study. At the master’s level these projects tend to be research projects that may or may not require the writing of a thesis to report on the research.

Teacher education programs, either at initial licensure or advanced levels, are focused on improving practice. Preparation programs often do not emphasize developing teachers as researchers, although this may be changing with the current emphasis on data-driven decision making. Including in a preparation program courses and projects that are oriented toward research methods can be seen as as being in conflict with other program goals and in competition with other courses that are viewed as being better focused on helping all P-12 students learn (Honigsfeld, Connolly, & Kelly, 2013). Frankel, Wallen, and Hyun (2015) believe engaging in teacher research activities may be a poor use of teacher time and expertise. Consequently, research-based capstone projects, if seen at all in teacher preparation programs, are less likely to include comprehensive reports of a research study.

Alternatively, Cochran-Smith (2005) states that teachers need to be able to conduct research about their own practices and programs. She suggests that the individual’s research is improved
based on the quality of the research preparation that the completer received in his or her teacher educator program. Examples of research integration in education master’s programs cover a wide range of strategies. Perhaps the most rigorous is the approach used in Finland’s teacher preparation programs. Westbury, Hansen, Kansanenm and Björkvist (2005) report that all new Finnish teachers must complete a four-year master’s program in one of eight university teacher preparation programs; these include the completion of a research thesis. The intent is for students both to understand the research basis for the work they are doing and to be able to conduct their own research. In most cases this research work is based in practice teaching experiences over a two-year period of time.

In an example in which the focus is more on candidate reflection, Brown and Benson (2005) describe a culminating Capstone Exhibition in which candidates make oral presentations demonstrating knowledge of theories and practice in addition to knowledge gained through action research projects.

Measures of the benefits of capstone projects are diverse. Boyd, Lankford, Loeb, and Wyckoff (2009) provide evidence that research capstone projects in EPPs are correlated positively and significantly with P-12 student outcomes in the first and second years of teacher careers in New York schools. Perry and Imig (2010) have found that research capstone projects are demonstrating that they contribute to practitioner learning and that they provide a vehicle for understanding complex educational problems. McKinney and Day (2012) suggest positive benefits in the completion of capstone projects including “understanding and competence in doing a research project, interpersonal competence and confidence, and a sense of ownership and pride in the project” (p. 153). Van Zeer, et al. (2006) discuss the positive link between teacher research and teacher leadership. Warren, Doorn, and Green (2008) found research experiences
impacted teachers’ sense of personal identity and their relationship with the school. They discuss that after research experiences teachers are more likely to serve as a catalyst for change.

From this range of potential benefits of capstone projects, it appears that, more generally, teacher self-efficacy may be improved. An examination of the possibility that teachers may gain a measure of self-efficacy around using research entails both looking at teachers’ beliefs of their ability to complete or use research strategies in their work—research efficacy— but also one should examine teachers’ beliefs about whether that ability will translate into a positive impact on their classroom or school—outcome expectancy (Bandura, 1994).

Methods

All of the respondents in this study were enrolled in the School of Education in a small, liberal arts university in the Pacific Northwest. The university has master’s degree candidates in a college of arts and sciences and four professional schools.

The 44 respondents had recently completed a 36-credit hour Master of Education teacher leadership program. They were licensed teachers in cohorts on the main campus, in a satellite campus in Edmonton, Alberta, and in a residency program for teachers working in Catholic schools throughout the northwest, including Alaska. The number of years the respondents had been teaching varied between 2 and 18 years.

The capstone project they had all completed was a research-based investigation into a topic of the candidate’s choosing that was conducted in the classroom or school where the respondent worked. In their program they completed two, three-semester hour research methods courses—one qualitatively oriented and one quantitatively oriented. After these first two courses, the capstone project was completed as a three-semester hour project during which they worked
independently with the guidance of a faculty research advisor. The reports on these projects were completed in a five-chapter APA form and were from 30 to 40 pages in length.

Data were gathered in two forms. The first set of data were from master’s candidate reflections on their experience during their program. These data were generated from three prompts related to the program as a whole, with one prompt focused specifically on the research component of their program. The prompt for the research component was,

*In what specific ways have you learned to use educational research? Describe ways these skills contributed to your ability to analyze and improve your own practice and the environments in which you work.*

Candidates were also required to complete a reflection about a required formal research presentation to the faculty of their school. Although the reflection included a summary of the presentation and the questions they were asked at the end, the responses analyzed in this study were from the prompt *What did you learn from giving the presentation.*

Data were analyzed iteratively. First cycle coding included in vivo and descriptive strategies (Saldâna, 2013). Second cycle coding was carried out as axial coding. The observed coding categories and exemplars were reviewed by two authors to check that the categories were comprehensive and inclusive.

**Results**

Although there is some overlap between the responses to the two prompts, in general the responses code separately into categories related to the use of research from the question on how they learned to use research and categories related to interaction with other faculty members from the question on what they learned from the presentation.

**In What Specific Ways Have You Learned to Use Educational Research?**
Two predominant themes appeared in these responses. First, many of the respondents felt that having had these research experiences would improve the work they did in their schools. It was stated explicitly by three of the respondents as *it will make me a better teacher*. More generally, many of the respondents talked about using research as they made decisions in their schools and classroom. Typical comments related to this theme included:

*I have challenged myself to continue to support professional decisions I make in my classroom with research.*

*Using educational research has allowed me to do my own research on the topics I teach, instead of depending on textbooks.*

*Now that I have solid evidence on what works or what doesn't, I can take action based on it.*

Associated with this idea of improving the work that teachers and administrators do, eight of the respondents indicated that they were now more confident in the decisions they make in their classrooms and schools.

The second theme that appeared from the Using Educational Research prompt concerned evaluation of initiatives that came from administration at any level. Teachers and school level administrators are cautious about external mandates. Typical comments in this theme included:

*If a new initiative or project is being implemented it is important to have data to support the decisions that we are making to support if we should continue.*

*Our ability to determine the validity of a project is essential to deciding if the idea is worth implementing or eliminating within our schools.*

*This course taught me to analyze the information carefully in order to ensure that what I am being told is actually supported by data.*
As teachers we are consistently exposed to and encouraged to try new initiatives in our classrooms and schools. Before I would take the information given to me at face value and wouldn’t necessarily dig deeper into the ‘why’ behind this program. Now I have the skills needed to bring up and support questions and concerns that I may have.

What Did You Learn From Giving the Presentation?

The What Did You Learn prompt generated responses that focused both on personal growth and on a changed understanding of the environments in which the respondents worked. Categories in these areas included difficulty in presenting, research methodology, and sharing with colleagues.

First, many of the respondents were struck by the difficulty in presenting to their colleagues.

The presentation also taught me the importance of organization and practice. I was quite nervous beforehand, and I wished I had reviewed it a few more times before giving my final presentation to my audience.

Given the feedback on my presentation, I know that I have some work to do on the presentation before I can feel fully confident in it.

Before presenting this information I was worried about talking about this project with others, especially about presenting in front of a larger group.

More specifically, a number of respondents discussed the need to explain research methodology to their audience.

The teachers I was presenting to had no idea what “significantly strong” p values meant… Sometimes we have to adjust our data and our information to a simpler form to our audience in order to get our point across.
I learned how to explain the data analyses we performed in Microsoft Excel to others who are not familiar with it. I realized this is a difficult task!

I thought it pragmatic to present the material from a researcher’s point and then define any language through verbal, face-to-face interaction. It was harder than expected to remove myself from the research process I have been enveloped in for the last 10 months. Additionally, not all my colleagues are up-to-date with research concepts and terminology.

A large portion of the teaching population run their classes off of the subjective rather than the empirical. Often times, this subjective assessment has basis or connections with scientific and research basis although that is usually realized after the fact.

Consistently the respondents discussed the importance of sharing with colleagues.

I especially liked the fact that it sparked conversation with all of us about what we can do as a school to improve student learning.

There is a real need for continuing education, professional development, and inter-staff sharing of ideas and best practices.

We should continue to discuss what we are doing in our classrooms and continue to look at the research in order to make mindful, data driven decisions.

I look forward to having further discussions and talking about successful practices and challenges in engaging staff.

It’s important for all of us to evaluate how and why we teach in addition to what we teach and it seemed that my presentation was able to spark that in many of my coworkers.

**Conclusions**

In Bandura’s (1994) terms the respondents discussed an increased ability to complete tasks or use research effectively. They discussed this as both improving their own practice in
classrooms and schools and also as being better able to evaluate mandates imposed on them externally. They also discussed achieving outcome expectancies or their ability to reach goals in their work particularly with their faculty colleagues. Of particular note is the frequency with which the respondents discussed how the activity of sharing research emphasized the need for faculties to discuss their own work with each other.

This work is consistent with McKinney and Day’s (2012) observations of participants’ feelings of interpersonal competence and confidence, and a sense of ownership and pride. Additionally, many of our respondents discussed how they hoped to continue using their understanding of research to help their schools improve suggesting Warren, Doorn, and Green’s (2008) findings of teachers with research experience becoming a catalyst for change.

This is a small study and it only addresses the perceptions of practicing teachers who have participated in a comprehensive research experience as part of an advanced preparation program. In our initial preparation programs candidates also complete classroom-based research projects and this work would naturally extend to those teachers as well in the future.

We see these results as reinforcing the value-added nature of helping teachers become researchers in their own right. Including research capstones in preparation programs extends the abilities of these teachers beyond solely being able to conduct a research study. It helps them to become better teachers both in their classrooms and as part of the educational communities in which they work.

References


