

Examining Perspectives of Faculty and Students Engaging in Undergraduate Research

Joy Myers
Amanda G. Sawyer
Katie Dredger
Susan K. Barnes
Reece Wilson

James Madison University

Abstract: This case study analyzes one research collaboration between faculty and undergraduates at a teaching-intensive university within a teacher education program working to expand opportunities for undergraduates to engage in meaningful research. It examines how researchers perceive the opportunities and obstacles associated with such research. Data included written and oral reflections and field notes of the project participants, members of the research group. The study offers insight into how one group of teacher educators embedded undergraduate research into an existing research project and the opportunities and obstacles that the faculty and students encountered. Faculty involved in this study perceived opportunities for technology support, honest conversations and thoughtful collaboration, authentic interpretation, debunking misconceptions, and for taking time. Undergraduates perceived opportunities to experience and understand the research process, to make new relationships, and to learn from others. Faculty perceived obstacles included the paperwork, the lack of basic methodological training, and the lack of academic writing experience on the part of the undergraduates. Obstacles that were perceived by the undergraduates included logistical issues such as transportation and lack of background information about their role in the project prior to the project start, project pacing, and their confidence in their own contributions to the group. Opportunities outweighed obstacles in this research endeavor. This collaboration became an exercise in reflective practice and continual learning and has implications for the undergraduates involved to see themselves as researchers as they continue their professional careers as teachers.

Keywords: undergraduate research, teacher education, preservice teachers

Introduction

As teacher educators, we often struggle to integrate research and teaching, sometimes leaving these tasks compartmentalized. As a result, our students do not see the connections between our research and teaching, nor do they understand what we do when we are not teaching (Slobodzian, 2014). This realization led to a desire to include undergraduate researchers (URs) in a summer data analysis workshop. During our week together, five faculty members and three URs worked to analyze data related to a study examining preservice teacher lesson plan inspirations. The focus of

this paper is to examine the faculty and URs' perceptions of the opportunities and obstacles associated with engaging in undergraduate research.

Literature Review

Studies show that offering research opportunities to undergraduate students in all disciplines yields benefits for growth and intellectual development (Craney, McKay, Mazzeo, Prigodich, & Groot, 2011; Osborn & Karukstis, 2009). Undergraduate research also encourages leadership, collaboration, and enhances students' written and oral communication skills (Ishiyama, 2002; Kuh, 2008). According to Mabrouk and Peters (2000), 98% of the 320 past and present URs they surveyed would recommend undergraduate research to their peers. Undergraduate research has also been shown to support student retention (Burns & Goldin, 2017; Eagen et al., 2013; Webber, Nelson Laird, & BrekaLorenz, 2013).

Some students see their lack of knowledge about research as an obstacle to engaging in undergraduate research. To best maximize their experience, Scheel (2002) and Toepfer (2009) suggest offering these students an introductory research class. Often these classes are only offered in the final year of programs, but are needed earlier if students plan to work with professors. Others argue supporting undergraduate students' understanding of research can best be facilitated by conducting research with them (Bauer & Bennett, 2003). The relationship between faculty members and undergraduate researchers is an important component of the undergraduate research experience (Craney et al., 2011), and for those that have an opportunity to conduct research with a faculty member it can be "a life changing experience" (Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007, p. 38).

Undergraduate research also offers opportunities for professors. Gentile (2000) summarized this point when he stated, "research with undergraduate students is in itself the purest form of teaching" (p. 80). Faculty who support URs often report an increase in the quality of their work life (Webber et al., 2013). Other researchers have found that engaging in undergraduate research with students combats faculty turnover and increases creative synergy (Allen, 2007; Lunsford, Baker, Griffin, & Johnson, 2013).

Faculty mentoring of students, particularly partnering in research, can present obstacles such as lack of time. With demands for grant-writing, publication, university service, and teaching, mentorship of undergraduate researchers may be challenging (Dolan & Johnson, 2009). Some universities, such as Purdue, are planning to link, at least in part, academic promotion and tenure decisions to whether faculty can show evidence that they are active mentors to undergraduates (Jaschik, 2015). This trend is concerning to some faculty who already feel time crunched. The time required to mentor URs, which is often not computed in faculty teaching loads, can be a drawback for faculty who participate. Zydney, Bennett, Shahid, and Bauer (2002) found that 50% of faculty surveyed noted that they were spending at least three to five hours per week supervising URs. However, if faculty find ways to link the work they do with URs to manuscripts they write, they may be able to reduce the typical teaching-research tug-of-war (Toepfer, 2009). When research is already part of faculty's agenda, it is just a matter of finding a research topic that interests both the faculty and the students.

Slobodzian (2014) argues that the ultimate goal of research at the undergraduate level in schools of education is to develop future teachers who not only appreciate the value of research, but who also will become actively involved in research efforts themselves in their teaching career. "In doing so, the teachers act as agents of change and promote progress in the field of education"

(Slobodzian, 2014, p. 47). Furthermore, undergraduate research provides opportunities for preservice teachers to enhance their understanding of the relationship between educational theory and practice (Levy, Thomas, Drago, & Rex, 2013). In addition, it has the potential to lay the foundation for successful pursuit of a graduate degree by providing a taste of what it means to engage in research.

Studies show that in comparison to the natural sciences, there are fewer opportunities for undergraduate research in the social sciences and humanities (Seymour, Hunter, Laursen, & DeAntoni, 2004). Although it is beneficial for teacher preparation programs to engage students in research, it is not standard practice. In fact, students majoring in education are notably underrepresented in undergraduate research programs (Manak & Young, 2014). It is essential for teacher education programs to find ways to incorporate this practice into the curriculum as they to prepare future teachers. Thus, the purpose of this study was to specifically understand how faculty and students in a teacher education program perceive the opportunities and obstacles associated with engaging in undergraduate research.

Methods

To investigate the perceptions of faculty and URs as they engaged in a summer data analysis workshop, we utilized a case study design (Stake, 1995). We chose case study as the methodology because it best assisted us in answering the research question by focusing first on the experiences of the URs and their perceptions of the opportunities and obstacles associated with engaging in undergraduate research. Then we shifted our focus to the faculty and their perceptions. The bounded system was the summer data analysis workshop. Our data sources included observations, surveys, and self-reflections.

Participants

The selection of the undergraduate researchers was done in three parts. First, we met and determined what characteristics we wished the undergraduate researchers to exhibit. After determining the characteristics, such as being interested in technology, we created a survey on Google Forms as a way for the undergraduates to apply to be part of the research project. Participants were asked to identify their year of college, program of study, and dates they would be available for the research, and to write a short essay explaining why they would like to conduct research with us.

We distributed this survey to members of our own classes as well as a university undergraduate organization. After reading the seven responses to the essay, as well as knowing some of the students personally after having them in our courses, we selected three students that we believed would be the best candidates from the group. Because we were using advanced qualitative data analysis software Nvivo, we needed the participants to be comfortable using technology. Since the workshop was only three days, the participants also needed to be motivated and efficient workers. The students who were accepted are given the pseudonyms, Eileen, John, and Vivian. Table 1 highlights characteristics of each participant.

Once the participants were selected, we contacted all applicants to inform them of either their acceptance or to thank them for their application. The participants we accepted were required to take the Collaborative Instructional Training Institution (CITI) Social/Behavioral Research training required by our university.

Table 1. Participant characteristics

UG researcher	Program of study	Outstanding qualities	Personal description
Eileen (Junior)	Special Education	Had high scores in one of the instructor’s classes. When she did not understand the material, she sought out assistance either from her instructor or her classmates. Self-motivated student	Eileen strives to curate immense resources to best enrich her teaching and build a strong teacher identity.
John (Senior)	Middle Education	Although not the top student, consistently showed an eagerness to incorporate technology into the classroom. Expressed interest in becoming an information technology support specialist in public schools Works for Apple part-time job, so he was familiar with Macintosh computers	John has experience with incorporating technology effectively into classroom instruction by ensuring that it is value added and not diminishing student engagement. He plans on pursuing a career as an Instructional Technology Resource Teacher post his graduate level career.
Vivian (Senior)	Inclusive Early Childhood Education	Works well with others Respected the ideas of her peers even if she disagreed with them Strong writer	Vivian has experience with students with special needs, as well as typically developing children and plans to be an educator of both in one classroom.

Once the participants were selected, we contacted all applicants to inform them of either their acceptance or to thank them for their application. The participants we accepted were required to take the Collaborative Instructional Training Institution (CITI) Social/Behavioral Research training required by our university.

Five faculty researchers made up the other part of the research team. The faculty, four female and one male, ranged from two to fifteen years of college teaching experience. Of the five faculty members working on the study, two of them had worked with URs before, but not at this university.

Context of the Workshop

During our summer workshop, we followed a traditional, short-term and task specific model of undergraduate-faculty research (Multhaup et al., 2010). In this model, the student supports a professor's current research agenda and the faculty member serves as a mentor to the student, demonstrating proper research techniques and guiding the student as he or she completes a series of tasks that supports the bigger research endeavor.

The major research task for the URs was to work with faculty to analyze the data. They met with us for three consecutive days. On the first day of the summer workshop, the five researchers and three URs focused on getting to know each other, learning how to use the qualitative analysis software, and reflecting on coding strategies. The faculty first modeled how to determine codes in the data. The URs watched this process and as they became more comfortable, they shared their coding ideas. The second day we focused on looking across the data, encoding everything consistently using the classification nodes constructed by the URs. During the last day of the workshop, we concentrated on what we learned from this investigation. To ensure that everyone's ideas were valued, the first ten minutes of each session focused on everyone reading through the data and coming up with their own conclusions. Next, everyone in the group shared what they found and we compiled central themes used to describe the lesson plans we were examining.

Data Collection and Analysis

The data sources for examining the experience of faculty and undergraduates conducting research together included written reflections from the URs before beginning the three-day workshop, observational field notes from faculty, and a final reflection from the URs and faculty members. The first reflection prompt asked the URs to reflect on what they knew about research, describe any previous experience with research, explain their knowledge of specific research methodologies, and share any concerns they had as well as what they hoped to gain from the experience. The field notes captured conversations and interactions between faculty members and URs. The final reflection asked the URs to share what they now know about research, if they would want to continue to work with professors on research, their thoughts about the connections between teaching and research, the most challenging and rewarding aspects of the project, and advice for future undergraduate research endeavors. The faculty were asked to reflect and share their thoughts about the experience.

The case study analysis was inductive and occurred in two phases. In phase one, we read and open-coded the field notes and the students' and faculty's reflections (Stake, 1995). The process of analyzing the first set of data was complex, given the variety of contexts in which the observations took place, such as during formal whole group discussions and during spontaneous informal interactions between individual faculty and undergraduates. In stage two we specifically focused on how each UR perceived the opportunities and obstacles associated with engaging in

research. The researchers collaborated to validate the findings through joint coding and reliability tests among the reflective responses.

Findings

This section highlights the findings related to our present research question: How do faculty and students in a teacher education program perceive the opportunities and obstacles associated with engaging in undergraduate research?

Faculty Perceptions

Prior to beginning this project, the faculty felt excited for this new endeavor but they knew that a few things needed to be in place so that it would be successful. These strategies included providing a daily agenda, scheduling an expert to train the team on how to use the data analysis software (NVivo), and planning who was bringing in snacks each day. At the end of the three days, faculty reflections revealed several opportunities and obstacles when incorporating URs into their current research endeavors.

Opportunities for technology support. We knew that John enjoyed technology, however, we did not expect the level of technology support that he and the URs offered. For example, during a conversation he told Joy and Katie that the night before he had watched forty-four minutes of YouTube videos on how to code using Nvivo so he would be prepared to support our efforts. Joy, who had not used the software before either, had not even thought about watching tutorials ahead of time. Thanks to the extra effort on John's part, he was able to support several of the faculty members when we began coding with the software. Reece shared, "I was amazed at how quickly Eileen became proficient in using the coding software. She added the coding information efficiently and accurately as faculty working alongside her shared thoughts regarding project data." The URs became so familiar with the software that the faculty started going to them for assistance as to how to change a code or to collapse one into a parent node.

Anticipating that we would have more questions about the software, we had planned on having a faculty Nvivo expert visit us again on day three of our work. However, by the time she arrived, John had taken the keywords we had created and used them to code the remaining data. This was quickly transformed into a document that allowed everyone to observe the codes and construct their own ideas about the findings and implications of this project. The technology support offered by the URs was an unexpected opportunity for faculty to sit in the seat as learners rather than instructors.

Opportunities for honest conversations and thoughtful collaboration. Several of the faculty reflected positively about the opportunity to have open conversation with the URs. Susan shared, "I appreciate their honesty and the level of comfort that they are exhibiting after just this short period of time." She credited this openness to the intentional language we used starting on the first day, our attempts to include the URs in our conversations, and invitations to share their thoughts.

Typically, we work with preservice teachers who have a clear career path in mind, unlike freshmen who are undeclared majors or undecided in a pre-professional program of study. Several faculty remarked about enjoying the opportunity to talk to John who was still exploring career options that combine his interest in technology and education. Engaging in conversations with John and the other URs reminded us that students are open and receptive to our ideas about ways

to combine their talents and interests into something that would be professionally challenging and enjoyable.

Working with the URs also provided the faculty an opportunity to collaborate, some for the first time, with students. Reece shared, “The URs were deep thinkers and offered substantive ideas as we developed codes.” Susan added that she truly enjoyed the wonderfully rich discussions with the URs about how data can fit into more than one category.

Opportunities for more authentic interpretations. Katie shared that she liked working and talking with the undergraduates because it kept everything authentic. She reflected, “The undergraduate students were able to connect how we constructed thematic codes with elements from their own lives. They compared coding to tagging on Facebook which made the learning process meaningful and easier to understand.” Susan talked with Eileen about how challenging it is to join the data together without losing the richness of the individual remarks made by others. “I enjoyed hearing the ways she described the commonalities that emerged from the data in the authentic language of the generation of people we were studying.”

Collaborating with the URs offered a fresh way of looking at the data since we were examining the selection of resources by their peers, preservice teachers. Their insights helped us to understand the participants in the research project better. Vivian, John, and Eileen all shared personal examples of how and why they used some of the internet resources the preservice teachers in our study used. The UR’s thoughtful explanation of why some preservice teachers rely heavily on internet resources (the research question we were examining) furthered the faculty’s understanding and since the URs had an equal place at the discussion table, our interpretations of the data evolved further because we considered their perspectives as well.

Opportunities to debunk misconceptions. The faculty also remarked that conducting research with the undergraduates allowed them to rethink previous impressions held about students. Sadly, some of us who have worked with undergraduates for a long time have come to expect these students to have little initiative. However, the opportunity to work with the URs during the three-day workshop taught us that when undergraduates are motivated, more can be expected from their performance. The URs came in wanting to learn more about research, and they were the driving force for much of the coding process. Amanda shared, “The URs demonstrated to me that even though they might not know something, such as the computer program, they were willing to learn and demonstrate that learning in short period [of] time.” On the last day, Amanda was excited about our progress and wanted to stay later. John volunteered to join her saying, “I have nothing else to do today.” This is just another example of how the URs constantly discredited some preconceived notions of undergraduate students.

The faculty also appreciated the opportunity to share with students the other aspects of being a professor. As Katie explained, “We are showing them what we are doing in addition to teaching and making the connection between research and practice explicit. We are pulling back the curtain.”

Opportunities to take time. All of the opportunities the faculty experienced were in part a result of the three consecutive days we spent with the URs. “Thoughtful collaboration takes time and I really thought that the opportunity to have an intensive work environment made for a productive think tank,” shared Katie. During a typical semester, with teaching several courses, supervising practicum experiences and/or student teachers, and providing professional development to local schools, faculty typically have little time. The summer workshop gave us time to be more relaxed and the URs seemed to follow this approach. As we worked together, we found that repeating and explaining for the benefit of the URs benefitted us as well because we

were able to calibrate our expectations and clarify our definitions. Because the data were already collected, we were able to use the three days to fully explore data analysis with the URs. In addition, the time spent together convinced some faculty to consider inviting students to collaborate on future research. Susan said that working with URs, “will no doubt bring a more authentic voice to my discussions about what my undergraduate students are teaching and learning in my classroom and in their own future classrooms.”

Obstacles. One of the largest obstacles, according to one faculty member, was the actual preparation process. Although the URs all signed up prior to knowing they would be compensated for their time, Joy felt that being paid for their work also made them feel like a valued and equal member of the team. However, to get paid the URs had to complete five different forms. In addition, they had to conduct the human subjects research training on CITI. Thus, before we even met with the students, they were given tasks to complete that were time-consuming and tedious.

We quickly realized that data analysis is hard to do without some fundamental understanding of the methodology. Reflecting on our three days together, we now know that it would have been helpful to have the URs do some reading on the chosen methodology before the workshop. That being said, the students picked up quickly on coding and at times we had to ask them to slow down their thinking/coding so the faculty could catch up.

In addition to being new to coding, the URs were also new to academic writing. On the third day, we all chose a section of the paper to begin drafting. Vivian especially felt vulnerable and shared that she did not identify as a strong writer and worried that she was going to be very slow. Susan reassured her by saying that she too was a slow writer. The faculty believed that these were only minor obstacles compared to all of the opportunities they experienced working with the URs.

Student Perceptions

During the three-day workshop, we co-created a space with the URs that was safe for everyone to share their thoughts. The benefit of this safe space was made clear to the faculty after we read the UR’s honest final reflections. In the next section, we share their thoughts on the opportunities and obstacles associated with engaging in undergraduate research.

Opportunities to experience and understand research. The URs explained that from this experience they developed an unexpected passion for research and the research process. For example, Eileen explained, “I learned countless things from this experience but the one I will treasure most is the spark to pursue more research opportunities.” The URs demonstrated their dedication to the research on the first day of the workshop by working through lunch time to calibrate the codes across computers. This example shows how their enthusiasm about the research process even trumped their need to take a break for food.

In addition, the URs developed an appreciation for teacher research and the possible use of it in their future careers. John generated the following equation: Teaching + research = better education and shared how he felt strongly about actively participating in the construction of new knowledge. Eileen shared:

I am a firm believer in research playing a huge role in teaching. I understood the need for the day to day research of tests and questions but now I see the importance of looking at large picture items and applying them to myself as a teacher. It is research that allows teachers to be curators and find what works for them and find their teaching philosophies

and so I think without research we are limiting the field of education to the ways of the past.

The URs enjoyed the opportunity to understand and experiencing research during our three days together. In addition, John felt a sense of urgency for the need to, “unpack the research to better teaching.” Eileen made the connection between research and herself when she stated:

I believe the knowledge gained from the research not only benefits the public but it benefits me as well. I have learned so much about myself as a learner, preservice teacher, and as a researcher that I will carry with me into the future.

Opportunities for new relationships. The URs also constructed new relationships during the three days. This benefit was evident as they became more comfortable with the faculty and with each other, joking, laughing and talking. Vivian explained, “I really liked feeling like my ideas were valued and that I added to the importance of the findings in the study.” Eileen stated that, “having 5 professors value my opinion was very rewarding.” By openly expressing a want and need to involve the URs and the faculty in the development and construction of ideas, we built relationships, demonstrating a respect for each other. John explained, “It was rewarding to be able to bring in a different perspective. They valued what I had to say. I feel like working with my professor on a different level allowed me to become a more reflective thinker for the future.” Overall the URs felt that a new type of relationship was built with professors as a result of working alongside them rather than doing work for them as part of a class.

On the last day, Eileen suggested that we end our time together by playing the game we played on the first day, Two Truths and a Lie, since it had been so fun learning details that way about each other. This example shows that even though our time together was coming to an end, the URs felt vested in the relationships we had begun to build and wanted to learn more about us and each other.

Opportunities to learn from others. The URs noted in their reflections an appreciation for the many opportunities to learn from others during the workshop. Some students, such as Eileen, actually gained knowledge from analyzing the data. The URs also expressed how much they learned from working with faculty and their peers. John shared that he plans to take an important understanding he gained from the experience with him as he explained that he learned that by “engaging with different opinions, we can improve group understanding which leads to a better end product.”

Learning from others is not always easy and the URs saw the faculty and themselves engage in several productive struggles. For example, during the break following one of our discussions, John and Eileen created a hierarchy of nodes on a piece of notebook paper to clarify their understanding. Taking the initiative to create a concrete model of our discussion reminded all of us that research is messy and complicated. Eileen said it best, “I found it interesting that we all understood the research questions yesterday but half way through today we had to stop and refocus and after talking we had a different mindset.”

In the end, John admitted that he put more effort into this, the data analysis, than into anything last semester. Although Amanda disagreed (as John had been in her course), Katie countered that perhaps this experience is more meaningful because of its authenticity. John agreed by saying this (working with teachers and technology) is what he really wants to do in the future.

The opportunity to learn from others over the three days shaped how the URs felt about themselves, each other and the faculty.

Obstacles. The URs experienced several obstacles including transportation and miscommunication. First, because we chose to meet with the URs the week before summer school officially started, there were no busses running. For Vivian, who lives off campus and does not have a car, this was an issue. The first day Joy gave her a ride and then the next two days Eileen gave her a ride. Transportation issues may have impacted how many students applied to the summer workshop because they may have known there were no busses to campus the days we planned to meet.

The URs also identified that they had limited knowledge of exactly what they would be doing during the three-day workshop. Eileen shared, “More information prior to the first day would be beneficial. The extra knowledge may spark extra confidence therefore removing some of the learning curve.” Vivian added that not knowing what they would be doing made her feel, “like I had a lot to catch up during the first meeting in order to be a helpful component to the process.” John admitted that he did not even remember the overarching question being introduced.

In addition to more information needed prior to beginning the workshop, the URs shared that during the three days there were moments of confusion. Vivian remembers, “Sometimes discussions were too fast paced. It takes some time for me to digest the ideas of others and then add my own ideas.” Eileen echoed these feelings when she shared, “I felt as though I censored a lot of what I said. I waited for someone to say something similar to my idea and then piggyback off that rather than always saying what came to mind from the start.” The URs reflected that they became more comfortable as the experience progressed, but there were certainly moments of insecurity during the three-day workshop.

Discussion

Our findings clearly demonstrate the opportunities of working with URs outweighed the obstacles. One of the unforeseen opportunities that resulted from this partnership was dismantling the misconceptions we had of each other. We did this through building relationships with each other, thus lessening the academic divide between our traditional roles of professor and student. Second, since the URs were similar in age to the individuals’ whose data we were examining, they were able to give fresh perspectives that were otherwise unseen. Although money was used as a way to express our appreciation of the URs time, that little incentive was not the driving force for their hard work. The URs were genuinely interested and excited about the learning process. Despite some minor obstacles with transportation and logistics, the experience was positive and enlightening to all involved.

For our first attempt at incorporating undergraduate research into our teacher education program, we followed the traditional model of students joining a project that supports professors’ current and ongoing research agendas. However, with the success of this endeavor and as we think about next steps, we are open to undergraduates seeking support from professors for research projects that they themselves initiate. Currently, this option is only available to Honors Program students in our program.

Implications

Typically, most undergraduate research takes place outside of the time professors and students spend together in class (Multhaup et al., 2010). Students and faculty are busy people and with only so much time during the typical university calendar, working together in the summer

might be one way to create space for engaging in undergraduate research within teacher education programs or other programs of study. Next, we highlight ideas for future research and thoughts to consider before incorporating undergraduate research into your program.

We recognize that one of the limitations of this study is the small sample size and do not suggest that our findings are generalizable. Examining what a larger number of students know about undergraduate research would guide faculty in addressing students' misconceptions about research. Manak and Young (2014) suggest that faculty must draw students' attention to the inquiry-based scholarly experience already present in many courses that require students to create a case study, collect or analyze data, and share their findings with peers. Helping students recognize they are already doing or have done pieces of research may help make the idea of undergraduate research less overwhelming for some students. In addition, faculty need to share their conceptions and methodologies of undergraduate research with colleagues (Manak & Young, 2014; Levy et al., 2013). By doing this we can foster best practices and promote successful models of undergraduate research in programs across the country. Reflecting on our three days together, we should have taken more time on the first day to explain inquiry and the role it plays in teaching. In addition, having the students read a short piece on methodology prior to beginning our week together would have been helpful.

We strongly encourage all faculty who want to engage in undergraduate research with a group of students to take time to build community. We found it essential during our summer workshop with the URs to share the agenda each day, use icebreakers such as Two Truths and a Lie to get to know each other, develop group norms, and provide snacks in a comfortable environment. Doing these things helped to create a space where everyone felt comfortable and thus our time together was productive.

In addition to building community, we recommend that faculty and URs engage in reflection each day. On the first and third day, we asked the URs to write individual reflections. However, everyone reflected verbally several times each day and then at the end of each day we took turns sharing big takeaways. This sharing time allowed each member of the team to be an active and accountable participant.

If possible, we recommend offering URs opportunities to continue to work on the project and/or with the professors. For example, on the last day of the summer workshop the faculty offered the URs an opportunity to be co-authors of the manuscript based on the data they helped analyze. John was the only student who chose to do this, but we made it clear that we respected the others' decision not to continue working with us.

Conclusion

As teacher educators, we see that this joint endeavor with the URs was a step toward understanding for all those involved. The faculty had an opportunity to learn alongside students and listen to their thoughtful perceptions. The students not only gained research experience, but they expanded their thinking of the role of research in their careers as future teachers. We hope that by going beyond merely exposing the students to research, and actually getting them involved in the process, they may be more likely to engage in educational action research once they have their own classrooms. Reflecting on practices and engaging in inquiry about those practices not only will inform their teaching, but it also will help them better meet the needs of their students by bridging the gap between research and practice in the field of education (Frager, 2010; Price & Valli, 2005). Although our time together was short, it is clear that this model has the potential to develop

preservice teachers who approach classrooms with a researcher's mindset making instructional decisions based on empirical data. Examining perceptions of the opportunities and obstacles experienced by faculty and URs is one way those in higher education can further support these practices in their particular programs.

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