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Headaches and Humility: Introducing Preservice Teachers to Undergraduate Research

Abstract

For some teacher educators, the singular goal of teacher preparation is to license new teachers, not develop critical thinkers. This lack of thinking beyond lesson plans, course standards, and classroom management to explore high impact practices – such as undergraduate research – leads to the deterioration of the education field and limits preservice teachers' understandings of their own curricular and pedagogical practices. This article is a poetic reflection – through headaches and humility – on how 157 preservice teachers (PTs) made connections between curricular research and practice. The article also addresses steps taken by a teacher educator to ensure their success and mechanisms to overcome preservice teachers' (as well as other teacher educators') perceptions that educators do not need research skills.

Keywords

Undergraduate research, teacher preparation, poetic inquiry

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Introduction

When I told former colleagues I was redesigning an introduction to curriculum and pedagogy course to include undergraduate research (UR), they looked at me like I was a mad man – half curious as to how it would all turn out and half confused why I would ask preservice teachers to conduct research. As my personal goal in teacher preparation is to push my students to contextualize not only “how” to create a lesson, but also the “why” behind their choices, embedding UR into the teacher education course allows preservice teachers (PTs) to choose a singular curricular and/or pedagogical practice and investigate it thoroughly. This in-depth exploration of a question opens opportunities to enrich PTs’ critical understanding of the curricular choices they will make in their future classroom. UR provides a platform for PTs to critically engage with an idea, explore its roots in research, examine the multitude of perspectives around a single research question, and thoroughly answer “why” they make the educational choices they do.

Unfortunately, for some teacher educators, the singular goal of teacher preparation is to license new teachers, not develop critical thinkers. This lack of thinking beyond lesson plans, course standards, and classroom management to explore high impact practices – such as undergraduate research – leads to deterioration of the education field and limits preservice teachers’ understandings of their own curricular and pedagogical practices. Thus, this article is a poetic exploration – through headaches and humility – on how 157 preservice teachers made connections between curricular research and practice, and addresses steps taken by a teacher educator to ensure their success and mechanisms to overcome preservice teachers’ (as well as other teacher educators’) perceptions that educators do not need research skills.

Undergraduate Research

Morales et al. (2017) explain, UR opportunities “have become a national focus in higher education” (p. 538), as previous research articulates UR “develops critical thinking, creativity, problem solving, and intellectual independence” (Council on Undergraduate Research, 2022). However, Laursen et al. (2012) acknowledge that while hard on faculty, undergraduate research is good for students. In fact, faculty who engage in UR often struggle with a “limited amount of time” to focus on research, stress of “mentoring” students during the research and writing process, among the other assignments completed in regular coursework (Allyn, 2013). Furthering these frustrations for teacher educators, is the scarcity of opportunities and time for undergraduate research. Although there are benefits, research in

teacher preparation programs is not part of standard practice, (Myers et al., 2018), and college students often are resistant, believing the stereotypes that research is conducted in a laboratory, not a classroom (Klingel & Erbes, 2012). Thus, the mindset that teacher preparation programs should not prioritize or conduct undergraduate research perpetuates a self-imposed narrowing of intellectual thought.

I acknowledge undergraduate research with/in a teacher education program faces many obstacles: 1) aforementioned “attitudinal barriers to undergraduate research and inquiry learning provisions in initial teacher education” (Dobozy, 2012, p. 44); 2) frustration among students who lack understanding of the purpose or a feeling of overwhelm from the experiments, (Yu & Kuo, 2017); and 3) time constraints due to coursework and work with children, (Manak & Young, 2014). These systemic and personal struggles perplex the landscape of UR in teacher education programs; however, I argue that if we are to develop critical thinking skills among preservice teachers, who in turn develop critical thinking skills of their own students, we must move beyond barriers and increase curricular studies for all future teachers.

Poetic Inquiry

My objective as a teacher educator is to expand PTs’ understanding of their field of study as well as themselves, thus I came to use poetic inquiry to appreciate the often-emotional realities of engaging in UR. Leggo (2005) offers: “Poetry is a way of knowing and being and becoming” (p. 442), hence creating poetry from the emotive words expressed by preservice teachers allows for authentic voices to come forth. Furthermore, poetic inquiry allows researchers to think both creatively and empathetically, finding connections between the data, researcher, and participants (Grimmett, 2016; Ridenour, 2020). And, as the formation of poetry from data is a “performative act, revealing researcher/participants as both masked and unmasked, costumed and bared, liars and truth-tellers, actors and audience, offstage and onstage in the creation of research” (Prendergast, 2009, p. xxiii), I turn to poetic inquiry to understand my role as teacher educator, mentor, and actor in the process of creating space for new curricular practices and understanding PTs’ responses to those processes.

Additionally, “poetic inquiry offers a dialogic space for meaning making that is both personal and shared, multi-faceted and fluid” (MacKenzie-Dawson, 2018, p. 7), and this multi-layered perspective is key to understanding what occurs in my classes as well as what steps I would need to improve my use of UR with PTs. Apol (2017) explains poetry allows for “opportunities for listening, understanding, processing, and responding to others” (p. 73), which, as a teacher educator, I must embrace. If I, or any other teacher educator are to learn from our

own teaching – to de/construct personal observations of what it means to prepare teachers for their careers – we must be willing to listen, understand, and process how PTs respond to what they experience.

Embedding UR into a course

To be fair, it is tricky work to align a semester-long research project alongside other curricular requirements; however, combining the two – using one to explain the other – allows for a rich, meaningful understanding of the process. I start immediately – in my initial, welcome to class email, I asked PTs to come to our first class with a list of five curricular and/or pedagogical questions they are interested in exploring. During weeks 1 and 2, as I investigated PTs' prior knowledge of curriculum through reflective practice discussions/activities, we also explored PT-written research questions and worked to determine a final question for inquiry.

Once each student determined their research question, I created professional learning communities (PLCs) across the three sections of this course, which allowed students to interact during the research process with others who were examining similar questions. During weeks 3-5, when PTs were working on a literature review, I encouraged (but did not require) PTs to share sources they found. This cooperative approach helped lessen the burden of locating existing research, while also providing an opportunity to discuss the ideas they were reading in the literature.

Weeks 6 and 7 focused on data collection. Using university-approved IRB protocols, PTs had the option of collecting data: 1) using their peers as participants; 2) locating local in-service teachers who would be willing to act as participants; or 3) a combination of PTs and in-service teachers. I highly encouraged and most PTs chose to use their peers as participants using PLC-created confidential Qualtrics surveys. This process not only allowed students to collect data, but it also opened the opportunity for all the PTs to express themselves on a variety of curricular/pedagogical issues. With 81 PTs in the fall semester and 76 in the spring, this range of questions asked in PT-written surveys instruments itself incorporated nearly the entirety of state standards for the curriculum and pedagogy course, again clearly linking course learning objectives to their research.

Weeks 8-10 focused on writing results and discussion. Conversations about data – making connections to teachers constantly collecting data from students informally – offered quite rich discussions about pedagogical practices for the course. As I already use an arts-based approach in my classes, offering artistic options for nearly all my assignments outside of UR, I introduced PTs to three inquiries for writing their results: poetic, visual, and narrative. PTs then

chose which of these inquiries they wanted to use to convey their data. In addition, I purposefully aligned class discussions and the article discussion section to examine the future impacts of curriculum for classrooms, ensuring PTs understand those connections for their own research project as well as research in general.

Weeks 11 and 12, PTs focused on methodology. Since the class is not an educational methods course, I provide a detailed outline as well as sources for writing about their choice of inquiry. Each article I provided for reference had been chosen to not only explain the method of inquiry but focused on teacher education and explored curricular issues. This weaving of references with course objectives synthesized learning about methods of inquiry and course standards simultaneously.

The remainder of the semester was utilized to write an abstract, introduction, revise and peer-review. The peer-editing specifically opened avenues for discussions in class as PTs used their classmates as reviewers. Additionally, requiring multiple peer reviewers ensures PTs are reading their own work as well as those of their peers, which enriches their curricular/pedagogical understandings. In truth, due to the structure of UR, PTs read more analysis of educational questions and content articles than I would typically require in a teacher preparation course without embedded UR. The addition of UR to the course increased the rigor and critical thinking about curriculum and pedagogy exponentially.

Results

The following results are written from data collected in instructor-written anonymous Qualtrics surveys conducted over the course of the two consecutive semesters (previously described) as a means of understanding, guiding, and learning from students regarding their undergraduate research experiences. These surveys explore the initial thoughts of PTs prior to starting their research, a check-in point halfway through the process, and a final survey to reflect on their experiences.

After coding 455 open-ended survey responses, poems were formed from major concepts. All poetry words/phrases/lines derive directly from written responses provided by the 157 PT-participants. The following three poems represent the three instructor-written surveys, covering: 1) PTs' initial thoughts on research in teacher preparation; 2) feelings, struggles, and realizations throughout the process; and 3) PTs' final perspectives on their end product. Only grammar and punctuation changes were made for clarity and flow within each poem.

Poem 1: "How Do You Know that This is True?"

Research is –
ever-changing; discovering, learning,
facts, proven studies, reliable information,
exploring new ideas and sharing them.

No one likes a teacher who refuses
to change with the times.
Must stay up to date –
adapt, always changing.

Preservice teachers should learn from mistakes;
shouldn't take everything as the law,
when they step into schools and classrooms.
Research and find for themselves.

Research is what continues
to allow education to grow.

Poem 2: "I Did All of That?"

Beginning

It was so scary at first,
it seemed like a daunting task.
I was hesitant to be confident.
I was stressed, nervous at first.

When the research article was first introduced,
I was really overwhelmed
and felt very helpless;
my most challenging class.

Check-In

I feel a little nervous;
a little overwhelmed.
Nervous, nervous, nervous –
a little nerve racking.

I am feeling pretty good.
Truthfully, I am really excited
to begin conducting my own research.
I feel pretty good.
Overwhelmed.

Tired and nervous.
Nervous, nervous, nervous –
I have no idea of what I'm actually doing,
a little uneasy, stressed.

Completion

I feel great!
I can't believe I did it.
Relieved to finally be done;
a huge relief.

I feel like it falls in between
the best thing
I've ever written
and the worst thing.

Not very confident,
pretty exhausted;
like it wasn't good enough.
Not great.

I feel proud –
like all of the hard work paid off –
accomplished;
some of my greatest work.

My research article has
become my baby.

Poem 3: "After all, Education Students Cannot Write"

I didn't know –
format, data collection, methodology –
I honestly did not know anything.
So, that was something new.

I learned how to make a solid argument,
how research is structured,
what went into writing a paper like this;
I learned how to write professionally.

Writing – is a lot of work –

manageable, so take your time,
 be passionate about the topic.
 The process takes time.

Discussion

The three poems showcased in this article demonstrate significant issues facing UR in teacher education programs: 1) The extent to which PTs are effective at making connections between research and practice; 2) Methods teacher educators use to ensure a successful UR experience with their preservice teachers; and 3) Strategies teacher educators employ to overcome perceptions that PTs do not need to write professionally. All three issues derive from the central idea that UR challenges preservice teachers' own beliefs about education as well as expands their depth of understanding of their own career field.

First, in the poem, "How Do You Know that This is True?", many PT-participants link what research is and how it relates to their preparation for becoming teachers, but how well do they make connections to course curriculum taught in conjunction with the research? Honestly, this was a struggle in my first semester teaching UR. While I would continually remind PTs they are addressing a curricular and/or pedagogical issue in their research, PTs often would lose sight of connections between course lectures and research, while struggling with the writing process. One way in which teacher educators can help PTs is to ensure their inquiry is "a problem of practice," where PT asks themselves: "What am I worried about?" (Slobozain et al., 2016, p. 43). Focusing on this direct, linear relationship provides students with inherent buy-in on the research and writing process, leading to more PT success.

Second, as the poem "I Did All of That?" demonstrates, PTs articulate complex and varied emotions throughout the research process. Toepfer (2009) asserts: "Restricting the process to a single semester is ideal in order to provide students with feedback but it does narrow the window for discussing the process with students" (p. 23). Thus, creating a succinct timeline for the research process, which intentionally gives students room to breathe when needed, is imperative. Overloading PTs with research, readings, and other assignments inundates them, which leads to rejection of the process. For students to know they are being successful, they must feel as though they are keeping up and doing well. Regular check-ins and breaking the article into formative assessments (e.g., literature review, results, discussion) assists PTs learning this process for the first time.

The third poem, "After all, Education Students Cannot Write" (whose title comes from a PTs own self-reflection about teacher education), demonstrates that many students see research as "an ominous term" (Klingel & Erbes, 2012, p. 101), which leads to an "I can't do that" mindset. The most important aspect of

UR in my classroom has been my realization that I must be a cheerleader for PTs, for the better I got motivating students, the better their results. My job as a teacher of UR is to bolster confidence, squash fears, and stand alongside PTs embracing professional writing. When PTs “feel they belong to the culture of people who actively read and conduct research to improve their practice, teacher educators enable new teachers to take the challenge of improving student learning into their own hands” (Frager, 2010, p. 207).

Teaching UR in a teacher education program is headache-inducing, humbling work. It is not easy to make changes in how to visualize teacher education, even though I believe it betters my students’ understanding of their own career field. It is constant work to uplift my students, while also keeping the negative voices of others at bay. Too many times other teacher educators would insinuate UR was beyond preservice teachers, not needed in their studies. This mindset clearly infiltrated my students, and I had to encourage them, while also battle the naysayers around them.

As we slowly emerge from isolation and remote learning to a post-pandemic world, educational stakeholders must re/envision what it means to be an educator. This reconfiguration of what it means to be a teacher must center on developing professionals who are experts in both curriculum and the curricular theories that underlie their practices. Furthermore, if we are to revitalize teacher education programs to develop critical thinkers, not just teacher licensees, then high-impact practices, such as undergraduate research, need to be situated as prominent features within education programs. In my class, PTs demonstrate they are capable of undergraduate research, but I have learned it is the teacher educator’s role to reinforce curricular connections. This happens by ensuring PTs see vital connections between their practice and the underlying knowledge from which it comes, while also providing flexible structure to writing that embraces beginner PT-researchers, and act as emotional support for PTs who are clearly “nervous, nervous, nervous.”

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