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Where Do We Start?: Initiating a Practice-Based Teacher Education Program Around High-Leverage Practices

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Abstract
In recent years, there has been renewed interest in practice-based teacher education around the enactment of high leverage practices. However, there is little research detailing the perceptions of faculty members who must implement such programmatic shifts. Furthermore, researchers and educators alike continually call for a consistent language in teacher education. This qualitative study analyzed surveys from 13 faculty and staff members, and included interview data from seven of these participants to understand better teacher educators' beliefs and prior work related to this line of inquiry. Initial results suggest that despite practical concerns, participants were optimistic about high leverage practices. Furthermore, in contrast to deficiency narratives about teacher education, participants articulated sophisticated teacher preparation methods along these lines. Participants also desired programmatic coherence. Implications for this study are that program revisions to acquire programmatic change should emanate from a bottom-up process that honors the work faculty members are already doing.

Key Words: Practice-based teacher education, high leverage practices, preservice teacher preparation

Introduction

Our experiences as preservice teachers and graduate students in education were enriching. Like many education students, we learned about constructivist education theories of Jean Piaget and Lev Vygotsky; we reviewed class management strategies and created questions using Bloom's Taxonomy; we wrote lesson plans and even taught them in the field. We learned a lot that is traditionally taught about teaching. Yet, when we started our careers as teachers, we quickly realized that learning about teaching and growing in our teaching are two very different processes. Since we have both moved from the role of classroom teachers to teacher educators, we realized our teacher candidates, like us before, were learning a lot about teaching. Upon completion of our classes, we were unsure whether we had provided our teacher candidates enough feedback and opportunities to be confident they could enact these teaching practices effectively in classrooms. We are not alone. Teacher education has long been criticized for relying too much on generalized knowledge about a broad swath of educational topics, but lacking specific methods for ensuring teacher candidate (TC)

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preparedness for the first year of teaching (Green, 2014). Moreover, there is little research on how programs might address this challenge.

In recent years, there has been renewed interest in addressing this shortcoming by focusing more on the development of teacher practices, which consists broadly of enacting the work of the profession and may include a "professional learning community organized around a specific instructional system" (Lampert, 2010, p. 30). While there are competing and disparate conceptualizations of teacher practices, Grossman and McDonald (2008) argued that such enactments require teacher educators to shift "their attention beyond the cognitive demands of teaching, which have dominated the field for the past 20 years, to an expanded view of teaching that focuses on teaching as a practice that encompasses cognition, craft, and affect" (p. 185). Such teacher practice is more than "amassing strategies and activities" and requires that "teachers become serious learners in and around their practice" (Ball & Cohen, 1999, p. 4). This move to both develop grammars of practice and pedagogies of enactment through teacher preparation programs is often referred to as practice-based teacher education (PBTE; Grossman & McDonald, 2008; Zeichner, 2012). There are emerging bodies of research concerning these interconnected lines of inquiry, and we believe they offer a path which teacher educators might travel to prepare their teacher candidates more effectively. However, we understood that such efforts would be far more effective if teacher candidates experienced them across classes in our program. However, we were unsure how to proceed or whether our colleagues might travel with us on this journey. In this paper, we share our quest to find answers from our colleagues through a survey and interviews, but we hope our findings will offer implications for other teacher preparation contexts too.

We initiated this study because of our mutual interest in the emerging work around practice-based teacher education and high leverage practices and its implications for both teacher education and the department in which we worked. We initially discussed some of the related ideas with faculty members. However, we decided that no significant steps could be taken without understanding better what faculty members believed about practice-based pedagogies that utilized high leverage practices with the potential to improve effectiveness. Finding a dearth of literature on how education preparation programs (EPPs) move towards PBTE, we believed such a study could offer insights for other teacher educators similarly interested in this line of inquiry and practice. We therefore recruited faculty members from our teacher education department, and other faculty who worked with the same teacher candidate population to participate in this study which we hoped might inform future programmatic changes.

Theoretical Framework and Literature Review

While there are many conceptions of what constitutes a practice-based teacher education program and high leverage practices (O'Flaherty & Beal, 2018), we ground

this study in work by Pam Grossman and colleagues for both defining HLPs and pedagogies of enactment. First, Grossman, Hammerness, and McDonald (2009) defined high leverage practices as "practices that occur with high frequency in teaching" and include some combination of the following criteria:

- Practices that occur with high frequency in teaching;
- Practices that novices can enact in classrooms across different curricula or instructional approaches;
- Practices that novices can actually begin to master;
- Practices that allow novices to learn more about students and about teaching;
- Practices that preserve the integrity and complexity of teaching; and
- Practices that are research-based and have the potential to improve student achievement. (p. 277)

The University of Michigan's TeachingWorks (n.d.) identified 19 high leverage practices of the "fundamentals of teaching" that can offer a potential starting point for teacher educators and researchers (n.p.). Once teacher educators identify high leverage practices, they must then determine the pedagogies of enactment. To this end, Grossman (2011) proposed a method for implementation that involves three steps. First, teacher educators utilize "representations" of practitioners' work through videos, case studies, or artifacts. Second, teacher candidates "decompose" these practices by breaking down complex components of teaching into constituent parts using specific terminology (e.g., uptake as a discussion strategy for eliciting and interpreting students' understanding). Finally, novices work in situations that are approximations of teaching situations wherein they gain practice in various teaching activities. As we detail in the next section, this is not the only proposed pedagogy for teaching high leverage practices (e.g., Hiebert & Morris, 2012; McDonald, Kazemi, & Kavanagh, 2013). Yet, we draw on Grossman et al's framing of high leverage practices, the high leverage practices developed by TeachingWorks, and Grossman's pedagogical method as a lens through which to inquire into the beliefs and practices of teacher educators and interpret data.

While there is evidence that teachers prepared in teacher education programs are more effective than non-certified teachers, including candidates from highly selective programs like Teach for America (Darling-Hammond, et al., 2005), there are still concerns about whether teacher education programs leave too much up to chance, especially for first-year teachers (Ball & Forzani, 2011). While some claim that teacher education has lagged behind other professions, researchers are increasingly seeking to identify high leverage practices (HLPs) of effective teaching (Forzani, 2014), develop congruence in terminology (McDonald, Kazemi, & Kavanagh, 2013), and research effective methods of implementation (Ball & Cohen, 1999; Ball & Forzani, 2011).

Unfortunately, the complex work of teacher education has long resulted in disjointed work where the field fails to develop coherent lines of scholarly inquiry on

what teacher educators are actually doing in their classrooms to prepare effective future teachers (Grossman & McDonald, 2008). Moreover, Darling-Hammond (2006) contended that to be more effective, teacher education programs needed tighter coherence across courses and clinical work in schools for both teacher candidates and those teachers with whom they work. Goodwin et al. (2014) found that teacher educators often feel unprepared to apply a specific curriculum or pedagogy of practice in their preparation programs, and that their experiences are solely based on specialized content knowledge or prior teaching experience. For example, Lampert and Graziani (2009) argued for a system in which teacher educators structure experiences around a carefully chosen set of instructional activities. For them, these activities specify:

> "… how teacher, content, and diverse students would interact within work on authentic problems, how materials of instruction would be used, how the space would be arranged, and how the teacher would move around the room. These specifications serve as a stable and rehearsable backdrop for the dynamic work of responding to student thinking." (p. 493).

Such approaches generally align with those advocated by Grossman which we referenced in the previous section. Teacher educator practitioners and researchers have therefore advocated for a congruent pedagogy of teacher education (Darling-Hammond, 2005; Zeichner, 2012). Much of this research traces its roots to Shulman's (1986) concepts of pedagogical content knowledge and wisdom of practice, which sought to return focus to teacher pedagogies and practices. Along with teacher content knowledge, a teacher education pedagogy involves, "a knowledge of teaching about teaching and a knowledge of learning about teaching and how the two influence one another" (Loughran, 2008. p. 1180).

In addition to more general HLPs (e.g., TeachingWorks), educators have also, for example, identified HLPs for special education (Bettini & Jones, 2019; Maheady et al., McLeskey, 2017) and educators may also consider utilizing research and frameworks around, for example, culturally responsive pedagogies (e.g., Villegas & Lucas, 2007) to develop HLPs. Hiebert and Morris (2012) contended that evidence suggests that the U.S. should increase efforts to improve teachers by improving their teaching — particularly through annotated lesson plans and common assessments — rather than by recruiting more talented people or raising standards to enter the field. They believed it is through the work of creating a common set of educational activities that can be implemented, refined, tested, and adjusted in more controlled, common contexts that educators can grow in their craft. National standards such as the Interstate New Teacher Assessment and Support Consortium (INTASC) and the Council for the Accreditation of Educator Preparation (CAEP) are now moving towards teacher education pedagogies and assessments rooted in practice. However, Zeichner (2012) warned that these standards can leave much open to interpretation, and that they must be broken down

into meaningful activities and measurable actions. He further argued that creating a shared repertoire of teaching practices is "potentially a good development" even if there are legitimate questions as to how coherence could be achieved without reductionistic standardization (p. 378).

Researchers have increasingly studied how to enact practice-based pedagogies in individual classes, a critical aspect of programmatic reform, and have reported numerous barriers. Peercy and Troyan (2017) implemented a research self-study on how to engage in and reflect on practice-based pedagogies in a teacher education course. They found that engaging in the work of practice-based education is a very complex task that requires teacher educators to think in new ways about existing theoretical frameworks that guide teacher education contexts. In this study, the teacher educator's previous experiences and existing constructs were not enough to help novice teachers differentiate between learning about a teaching practice and enacting it. In another study, Neel (2017) redesigned a course so teacher candidates elicited student thinking utilized instructional assessments as a guide for instruction and by leading text-based discussions. However, there were numerous obstacles in the implementation. Teacher candidates expressed frustration, disillusionment, and confusion and "none of the TCs were actually enacting the practices in authentic ways but were instead, 'just going through the motions' to show us what we wanted to see" (p. 266). Teacher candidates also communicated a disconnect between the practice-based framework learned in methods courses and their "real world" field placement. Neel concluded that a high leverage practice approach to course redesign did not result in a linear process as complexity and tensions persisted. Similarly, however, Meuwissen and Thomas (2016) sought to encourage adolescents' thinking about complex historical concepts and conflicting evidence through a high-leverage social study teaching practices approach. Still, teacher candidates' efforts to enact such practices were often stifled or discouraged by the testing cultures and enduring approaches that already echoed in schools.

Similar to these researchers, many scholars have identified complexities, challenges, and concerns about movements towards PBTE and HLP. PBTE and high leverage approaches can also be overly reductive and fail to take into affect situational factors. Biesta (2007) argued that claims for evidence-based practice and practice-based education rely on shaky epistemological, pragmatic (e.g., education is very different from the medical profession from which these approaches are lifted), and professional foundations that can result in oversimplification, curriculum narrowing, and educator and researcher deprofessionalization. Moreover, Lampert (2010) pointed out that bounding a teaching event within a lesson, unit, or year with not only individuals but dynamic groups of students is challenging. It is therefore not surprising that there are vastly different conceptions of practice: practice as dualistic and in opposition to theory, a collection of competencies, preparation for future performance, or the carrying out occupational knowledge (Lampert, 2010). Other scholars do not necessarily advocate

that such movements require all teacher educators and teachers to abide by standardized and static grammars, practices, and pedagogies. Movements towards standardization of the profession have often been led by non-educators, partisan politicians, or market-driven corporate influencers and resulted in accountability-reform agendas that failed to improve the field while also narrowing of curriculum and deprofessionalizing teaching (Apple, 2001; Apple & Teitelbaum, 1986). Moreover, centering core practices risks pushing equity and justice practices to the periphery of teacher education (Barton, Tan, & Birmingham, 2020; Philip, Souto-Manning, Anderson, Horn. Carter Andrews, Stillman & Varghese, 2019). Instead, Mehta and Teles (2014) advocate for plural professionalism where educators determine what is appropriate to their contexts (e.g., institutions, demographics, cultures, subject areas).

While scholars have identified promise and pitfalls, there has been little research published that describes how to move a program from point A to point B. Peercy and Troyan (2017) stated, "despite a growing body of literature that focuses on the work of teacher educators, we know little about how they experience the growing demands to make practice more central to the work of teacher education" (p. 27). Some emerging studies discuss the potential and challenges of incorporating high leverage practices into practice-based teacher education program. However, most of these studies detail instances of a solitary practice within a single course or one-course revision within a teacher preparation program. For example, Mathewson-Mitchell and Reid (2017), initiated an action research project that studied how teacher candidates were able to enact two core practices – (1) eliciting and interpreting students' thinking through reading and literature and (2) explaining and modeling mathematics concepts as part of a single course offering. They found that over time TCs experienced, "a significant shift from a practice focus on the self, to a more explicit focus on the relationship to learners; from 'being' a teacher to 'doing' teaching" (p. 53).

The work of creating, developing, implementing, and evaluating the shift to practice-based teacher education is a laborious and complex work that teacher educators must engage in if we are to answer our research questions. The purpose of this study is to contribute to the emerging literature on initiating a practice-based teacher education program that utilizes high leverage and research-based practices as a foundation for a practice-based teacher education program. Specifically, the following research questions guided this study:

1. How do faculty understand high leverage practices?
2. To what degree do faculty believe high leverage practices can and should be implemented in a teacher education program?
3. In what ways have faculty incorporated high leverage practices in their teacher preparation courses within a PBTE framework?

Methodology

We conducted this study at a public, primarily female, and Hispanic-serving university in the southwestern part of the United States that serves approximately 15,000 students per year. The teacher education program includes both initial certification for undergraduates in elementary and secondary programs in addition to post-baccalaureate certification for individuals who already have obtained an initial undergraduate degree in their content area. Teacher Education faculty are departmentalized according to specialization areas. Content area and methods faculty teach courses outside of the education department. In contrast, teacher education faculty and faculty in the areas of special education, English as a Second Language, or Bilingual Education are housed within. We sent the survey instrument to all relevant faculty who teach preservice teacher candidates in some capacity.

Participants

We sent recruitment information to all faculty and staff members who had a relevant interest in developing future teachers as part of the EPP during the spring 2017 semester. Initial recruitment communication included a consent statement and corresponding survey about their experiences with preparing teacher educators. We selected department faculty who worked directly with teacher education through pedagogy courses (curriculum and instruction) and supporting faculty who teach the supplemental, content or subject-methods courses under the umbrella of their respective subject areas to receive the survey. Thirteen individuals completed both the consent and survey. The surveyed individuals included seven curriculum and instruction faculty, one certification director, four supplemental faculty, and one content area faculty.

Of these 13 participants, we selected the seven curriculum and instruction specific faculty members to participate further in the study by completing an extensive interview about their experiences. We selected these faculty members because we believed they were the most knowledgeable about current research and movements in teacher education and had the highest level of investment in studying/improving the program to better serve candidates for certification and their future practice. See Table 1 below for the demographic information for these participants.

Table 1.
Curriculum & Instruction Faculty Interview Demographics

Faculty	Rank	# Years in K-12	# Years in Teacher Ed.
1	Associate Professor	7	11
2	Professor	29	15
3	Associate Professor	4	12
4	Assistant Professor	6	7
5	Professor	10	19
6	Visiting Assistant Professor	6	12
7	Assistant Professor	9	5

Data sources

Participants completed a comprehensive survey regarding their beliefs about high leverage practices in general and the nineteen TeachingWorks HLPs specifically. The TeachingWorks HLPs (n.d.) served as a starting point because they were the most well-known attempt to identify potential high leverage practices. The survey included questions regarding participants' overall impression and value of HLP work, involvement with incorporating aspects of high leverage practices in their courses, their level of comfort teaching specific HLPs, and if/how their students had opportunities to practice implementing the HLPs in approximate teaching settings. The survey also asked participants to quantitatively rank statements along a Likert rating scale concerning past experiences and current beliefs.

Because there was no survey on the perspectives of teacher educators regarding high leverage practices existing that aligned with the study, we created a survey using accepted protocols in the field, including for Likert scale questions (Jansen, 2010). As opposed to the statistical survey of quantitative research which seeks to analyze frequency across populations, our survey centered in our qualitative interpretation sought to better understand context and differences of participants. Trustworthy methods were more appropriate than reliability and validity measures as we sought to ensure survey responses aligned with qualitative comments, interview transcriptions, meeting notes, and our reflective memos (Anney, 2014; Shenton, 2004). Triangulation of data sources strengthened credibility and thick descriptions offered insights that can be transferable to other contexts. A detailed coding process strengthened study confirmability and our detailed methods and survey inclusion should allow for increased dependability if other researchers seek to conduct a similar study.

We conducted follow-up interviews to further examine specific instructional

practices with integrating HLPs in course assignments, field work, and other practice-based learning opportunities. Interviews were conducted with a smaller sample of core teacher education faculty that worked particularly close in the preparation of teacher candidates and that directly taught generalized pedagogy courses closely aligned with the 19 HLPs). In the interviews, we asked our colleagues and each other questions centering around participants' understandings and practices of HLPs, including a HLP they identified as most relevant to their work and a common HLP on eliciting and interpreting students' thinking that we believed held promise across programmatic courses.

Data analysis

In addition to analyzing quantified Likert scale data, we recorded, transcribed, and checked interviews for accuracy. We uploaded written transcriptions from both the survey and interview data for analysis using NVIVO 11 qualitative software. We analyzed qualitative data through an interpretive lens that included line-by-line, iterative coding through the constant comparative method until saturation was reached and we were able to triangulate using multiple sources (Charmaz, 2014; Corbin & Strauss, 2014). We began by working to independently explore the data that included survey results, qualitative comments, interview transcriptions, meeting notes, and our reflective memos. We typed up memos as we analyzed survey data and after each faculty interview as a way to concisely capture important observations and early ideas about emerging findings and themes. We utilized an a priori approach in the early coding of the qualitative comments and interview data and constantly compared coding with memos as we matched data to the characteristics of HLPs and decompositions, approximations, and representations for the first and third research questions. Furthermore, we applied an axial coding scheme and constant comparative approach to identify repetitive themes in the data as we engaged in further coding of the data in these sections and for the second research question.

RQ1 - How do faculty understand high leverage practices?

To answer the first research question, we generated data from in-depth interviews with the seven teacher education specific faculty members. Each faculty member responded to the interview question, "what is your current understanding of High-Leverage Practices?" Interviews were transcribed from audio recordings and uploaded to NVIVO 11 for analysis. We used Grossman et al. 's (2009) definition of six characteristics of high leverage practices as the coding strategy to identify specific markers in faculty members' understanding of the term (listed in their entirety in the theoretical framework).

RQ2 - To what degree do faculty believe high leverage practices can and should be implemented in a teacher education program?

Data in this section were generated by analyzing quantitative and qualitative responses to our Google form Likert questionnaire. We asked our 13 survey participants to respond to a series of questions that gauged their overall perceptions of high leverage practices, their perceived value on including such practices in a teacher education program, and their thoughts on individual practices within the list. On the first part of the survey, we provided participants the TeachingWorks list of the 19 high leverage practices and asked them to respond to the question, "How important do you believe HLPs are to the preparation of preservice teachers?" using a Likert scale where "1" was deemed not important and "5" was very important (See Figure 1).

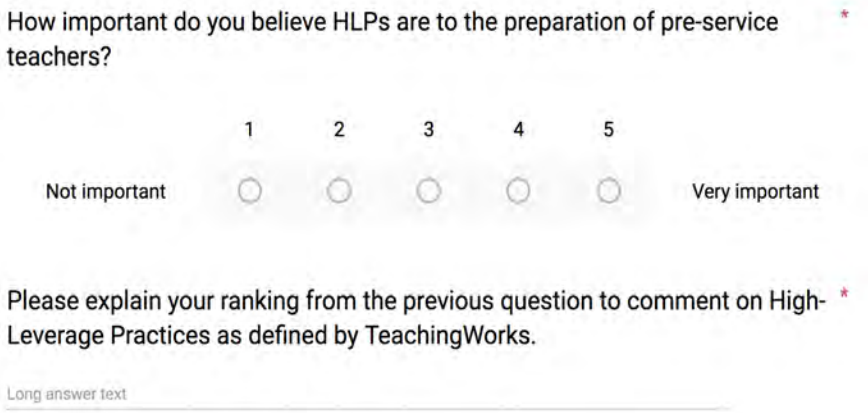

Figure 1. Part 1 Survey Example. This Figure Shows an Example of How the Survey Was Structured to Understand What Faculty Believe About HLPs in General.

Once we established generalized perceptions of the HLPs, we replicated each practice and provided a brief explanation of the practice using the TeachingWorks terminology and descriptions for the second part of the survey. We asked participants to use a similar Likert scale to rank their agreement with statements about the practice in three areas: 1. The importance of this practice in teacher education; 2. Confidence to teach the practice; and 3. Agreement on whether or not teacher candidates have opportunities to implement the practice in approximate settings as part of coursework. Candidates repeated this pattern of responses for all 19 of the HLPs. This time, the Likert Scale corresponded to the statements: Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), or Strongly Disagree (SD). We also provided a short qualitative comment section at the end of each HLP section for faculty to further elaborate on their responses to the third item in the survey section. Figure 2 illustrates the repetition pattern of the survey that was copied for each HLP:

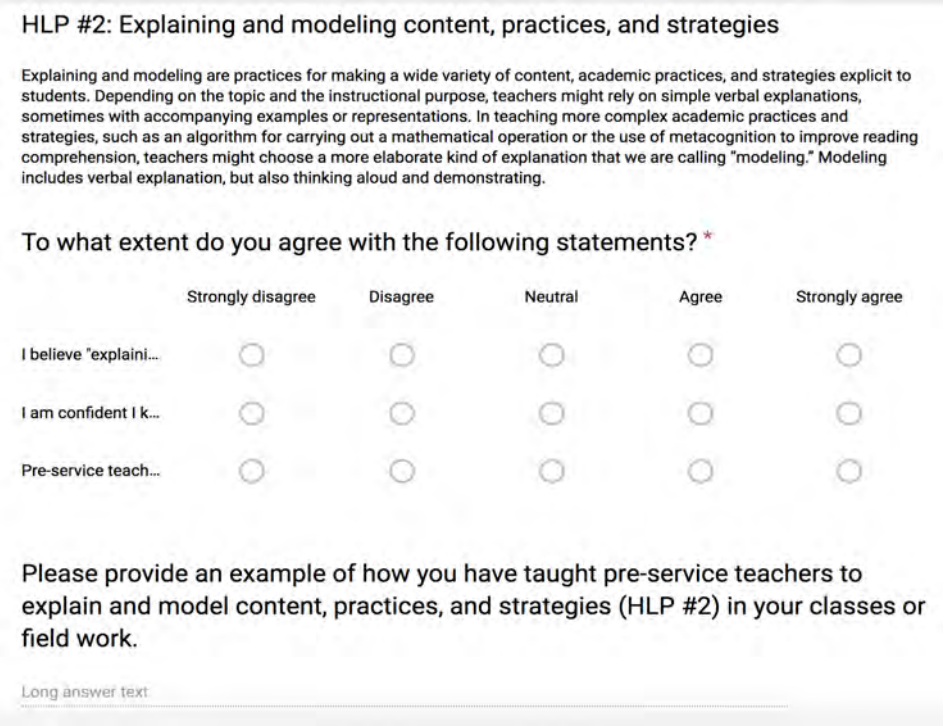

Figure 2. Part 2 Survey Example. This Figure Shows an Example of How the Survey Was Structured to Understand What Faculty Believe and Practice About Individual HLPs.

We used an axial coding approach to break down and analyze qualitative responses on the open-ended comments for each question and then used the constant comparative method to highlight areas of repetition that generated consistent themes from the data (Charmaz, 2014; Corbin & Strauss, 2014). Initial codes generated from the survey included themes such as the development of a common language, faculty practices, implementation barriers and challenges, lack of field experience applicability, and potential benefits. These themes were seen in the survey comments, interview transcripts, and reflective memos/notes regarding our research meetings for triangulation purposes. Through our coding, we identified several themes regarding the belief structure regarding high leverage practices as a central organizing theme of a practice-based teacher education program.

RQ3 - In what ways have faculty incorporated high leverage practices in their teacher preparation courses within a PBTE framework?

To answer this research question, we first asked interview questions that targeted one or more practices of particular interest to individual faculty based upon the sur-

vey responses. For instance, one instructor responded specifically to the practice of teaching candidates to interpret the result of student work (HLP #17) was especially relevant to the existing goals and learning objectives of the undergraduate course she taught. We generated interview questions to probe faculty members' current teaching practices and how these adhered to guidelines of practice-based teacher education in line with our study. To further examine how faculty were using these practices, to probe deeper into their understanding, and to learn about how they were actually implementing these practices with TCs, we asked additional questions such as:

- What do you see as core techniques or strategies for teaching this practice?
- Do students have opportunities to witness or observe teachers in action regarding this practice?
- What artifacts of teaching (videos, teacher lesson plans, observations, case studies) do you use in your courses?
- Do students have opportunities to understand/analyze/practice the content learned from these artifacts? How? If not, would you be willing to do so?
- How do you know students are able to enact this HLP before leaving your class?

In addition to asking each faculty member about a specific practice, we identified a common practice to analyze. We did this so that we could compare current teaching with an HLP of choice and look for any patterns among a common HLP. We chose HLP #3 - eliciting and interpreting student thinking based on the responses to the surveys; this was an area where there appeared to be a lack of coherence since eight participants ranked it as very important, four ranked it as important, and one respondent was neutral. We also chose this practice in the likelihood that instructors would already be incorporating this HLP into their courses. We analyzed the responses to our interview questions using Grossman's (2011) pedagogies of enactment framework. In this framework, Grossman maintains that teaching is a complex practice that, "should move away from a curriculum focused on what teachers need to know to a curriculum organized around core practices, in which knowledge, skill, and professional identity are developed in the process of learning to practice" (Grossman, Hammermess & McDonald, 2009, p. 274). Teacher educators can facilitate meaningful opportunities to fine-tune such skills through experiences with representations, decompositions, and approximations of teaching practice (Grossman, 2011).

Analysis of the qualitative survey results, interview question responses and typed researcher memos, revealed numerous examples of practices that instructors were using in their teacher education classes aligned with our study questions. Several teacher educators provided detailed examples of efforts to move teacher candidates towards mastery and skillful teaching that included Grossman's (2011) decompositions, representations, and approximations of practice. We organized findings into several cases

according to the type of practice participants shared with us.

Findings

Our analysis of data has yielded preliminary answers to our research questions, including several sub-themes that emerged during our inquiry concerning the beliefs and practices of HLPs of teacher educators in our program. We have organized our initial findings around the three research questions and relevant sub-themes within each of those questions.

Finding 1 - Faculty generally understood high-leverage practices as being core instructional strategies that are steeped in evidence, enhance student learning, and are important for novice teachers to master.

Results from the NVIVO analysis indicate that faculty members did not specifically identify all six of the shared characteristics when generating their own definitions of high leverage practices. Most frequently, faculty members identified with the practices as being important to the profession of new teachers, most aligning with the third and fourth characteristics - practices that novices can master and that lead to a deeper understanding of their students and teaching. Terms such as, "novice understanding, first- and second-year teachers, beginning teachers, and first year of teaching" were often used to outline high leverage practices (N=5).

Secondary to identifying HLPs in novice contexts, was the indication of these practices as being cross-curricular and research-based to affect long-term student achievement. One faculty member shared, "[HLP research creates] a true, lasting impact upon (sic) students' learning that we hope will transfer and be sustained across all their years of development that actually lead to a more intentional effort on how they will remain a lifelong learner and contribute to society." There was little mention of HLPs as practices that occur in high frequency or practices that preserve the integrity and complexity of teaching. Faculty members appeared to select more basic terms when defining HLPs and the words, "best practices or good teaching practices" was frequently seen in the interview responses as all (N=7) interview participants used this terminology in some capacity. Additionally, several faculty members referred to HLPs as more of a collection or compilation of practices through terminology by putting together for the first time much of the instructional lingo that educators use to describe commonly regarded teaching strategies. The following participant quotes illustrate some of these points:

> *These are good teaching strategies. My understanding, is that [it is] what we know to be good teaching strategies, maybe just boxed a little differently. Or maybe put together for the first time. I don't know that I've seen all of these listed together as, 'here's what you need to be doing.' So, maybe we've gathered them all up and said, here's what you can do [sic].*

> *My current understanding is what I would consider among other collections of best practices. But as we've recently come to learn, they are more high leverage than just looking at best practices as, 'these are really just great things to do in your classroom'.*

In general, faculty participants demonstrated a basic working knowledge HLPs as a central core for preparing novice teachers in the work of education, although specific terminology was not necessarily verbalized in their responses.

Finding 2.1 - Faculty members agreed that the inclusion of high-leverage practices in a teacher preparation program is important; however, each practice varied greatly upon current or previous teaching contexts.

Overall data from the first part of the Likert scale survey reveals that all (N=13) participants indicated that HLPs were important or very important to the preparation of preservice teachers. The quantitative data in this section is shown in Figure 3 below.

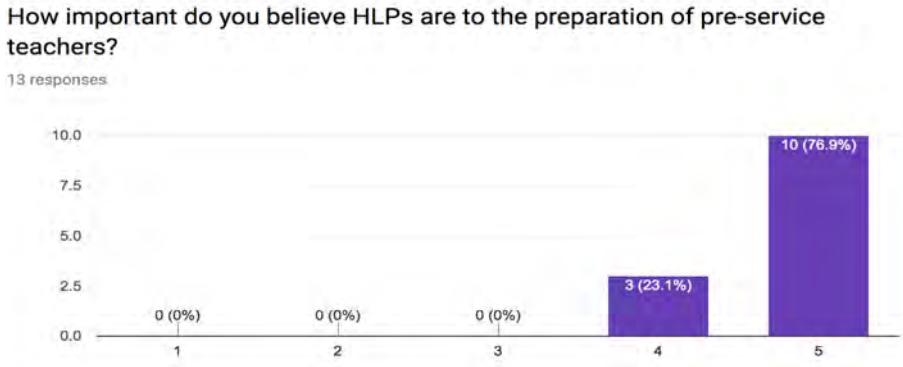

Figure 3. HLP Importance. This Figure Illustrates Faculty Responses Regarding the Importance of HLPs in a Teacher Preparation Program.

Participant responses in part two of our survey confirmed findings reported in part one, with a high level of faculty agreement with the individual HLP practices as important and vital components of a teacher education program. Table 2 illustrates the quantified responses to our survey in relation to each individual practice. In the first category, the vast majority of participants responded that they agreed or strongly agreed with all 19 practices as important practices in the preparation of preservice teachers. The only two exceptions to this were HLP #3 eliciting and interpreting student thinking and HLP #19 - analyzing instruction for the purposes of improving it. Both of these HLPs included one neutral ranking. Practices that had the highest rankings included: #2 explaining and modeling content, #7 reinforcing student behavior, and #10 building relationships with students.

Table 2.
Likert Rating Survey Results on HLPs

HLP	Importance of Practice					Confidence to Teach					Students Practice				
	SA	**A**	**N**	**D**	**SD**	**SA**	**A**	**N**	**D**	**SD**	**SA**	**A**	**N**	**D**	**SD**
1 – Lead group discussion	6	7	0	0	0	2	8	2	1	0	2	6	2	2	1
2 - Explain and model	11	2	0	0	0	4	8	1	0	0	4	6	1	2	0
3 - Elicit student thinking	8	4	1	0	0	4	6	3	0	0	2	7	2	2	0
4 – Diagnose content domain	4	9	0	0	0	1	8	3	1	0	0	4	5	2	2
5 - Norms and routines	8	5	0	0	0	5	7	1	0	0	2	6	2	2	1
6 - Adjust instruction	9	4	0	0	0	3	9	1	0	0	2	6	3	2	0
7 - Reinforce behavior	11	2	0	0	0	4	8	1	0	0	2	6	4	1	0
8 – Classroom Routines	9	4	0	0	0	5	7	1	0	0	3	5	2	2	1
9 - Manage small groups	8	5	0	0	0	5	6	2	0	0	2	6	4	0	1
10 - Relationships	11	2	0	0	0	6	5	1	0	1	2	5	3	2	1
11 - Parent conferences	10	3	0	0	0	6	6	1	0	0	2	5	3	2	1
12 - Student background	8	5	0	0	0	3	10	0	0	0	1	6	5	1	0
13 - Set learning goals	10	3	0	0	0	5	6	1	1	0	3	5	3	2	0
14 - Design lessons	9	4	0	0	0	6	6	1	0	0	3	6	3	1	0
15 - Check for understanding	10	3	0	0	0	5	7	1	0	0	3	7	3	0	0
16 - Formal assessments	10	3	0	0	0	4	7	2	0	0	0	4	4	5	0
17 - Interpret student work	10	3	0	0	0	6	5	1	1	0	4	3	2	4	0
18 - Provide feedback	10	3	0	0	0	5	6	1	1	0	0	5	4	4	0
19 - Analyze instruction	5	7	1	0	0	4	4	3	2	0	4	4	3	2	0

Further examination of the faculty survey responses indicated a gradual decrease in agreement in confidence to teach and/or opportunities for students to implement these practices. As indicated in the third and fourth category columns of Table 2, participant agreement with confidence to teach the practice and/or faculty inclusion of the practice within coursework gradually declined so that more participants responded with the neutral, disagree, and strongly disagree categories. In order to analyze some of the potential contributors to this decline, we relied on a qualitative analysis of the open-ended survey comments.

Although all survey respondents generally strongly agreed or agreed that all HLPs were important, faculty members appeared to express less confidence to teach the HLPs that were not part of the courses they had experience teaching. This is particularly true when we asked participants whether they provided opportunities for teaching candidates in their courses to enact the HLP. For example, referencing diagnosing common patterns of student thinking in a particular subject domain (#4), one faculty participant was unsure she could, or would, teach it by saying, "I'm not sure that I have covered this or how I would even teach students to diagnose common patterns, especially since I am more of a generalist rather than content-specific." Such responses were common and speak to issues programs may face in determining how, and which, HLPs fit within the scope and sequence of programs.

Alternately, faculty members (N=10) expressed a higher level of agreement with at least one practice if the practice was directly related to the course content they taught in current or previous experiences (supported by the qualitative comments). In other words, if a faculty member taught a specific course that they believed aligned with a particular HLP, they tended to agree more strongly with the corresponding practice. This, in turn, also generally indicated a higher confidence level and reported instance of teacher candidate practice within the course. For example, one faculty member wrote the following statement in the open-ended section for HLP #3 (eliciting and interpreting student thinking) while ranking this practice as strongly agree in all areas:

> *In my assessment and instruction class, we spend time analyzing teacher questions by reading an article about the common mistakes that teachers make when asking questions (asking too many low-level questions, answering their own questions, accepting wrong answers, etc.). TCs watch a video about spiraling between low to high level questions and then apply the learning by coming up with hypothetical questions for a lesson. TCs also have to observe a teacher in their field observations by writing down questions that the teacher asks and then analyze the level, wait time, difficulty, behavior, etc. TCs write a 1-2 page reflection about what they learned from the observation.*

In another example, a faculty member ranked HLP #7 (reinforcing student behavior) as strongly agree in the importance, confidence, and TC practice categories. The qualitative comment included with the survey response helps to clarify the ranking:

> *In the past, I had students videotape a lesson they teach in their field placement. We analyze it after the fact and look at ways they handled off-task behavior as well as reinforcing positive student behavior.*

It is important to note that on the survey and later in the follow-up interviews, we specifically used language that distinguished instructor practice from student practice. In other words, in this section we were not only interested in whether or not the instructor was teaching students about the practice. Rather we wanted to know specifically if and how teacher candidates had opportunities to enact the practice through approximation settings. We felt this issue needed to be clearly delineated in the survey to address what we were attempting to uncover about teacher educator and teacher candidate practice.

Finding 2.2 - The organization of a practice-based teacher education program around HLPs would facilitate the development of a common language, align the program to existing standards, and would ensure graduates receive the knowledge and skills needed for effective teaching through a spiralin curriculum.

Faculty members identified several potential opportunities when asked about implementing a practice-based teacher education program organized around HLPs. First and foremost, participants viewed HLPs as a way to identify and organize a teacher education program around a common goal and language. For example:

> *I think putting a name to it [the teacher education program] is definitely a good thing. I think getting this on our matrix, so we can know where we're going to address each HLP is good.*

Another present element in this quote is the perceived alignment of the current teacher education program with existing State and National Standards that govern teacher preparation. In several examples, faculty shared the importance of creating a program aligned with current governing standards and how the HLPs would naturally fit into this oversight, seen in the following quotes:

> *I think a lot of these are already correlate with some of the Texas and INTASC standards that we teach for the Pedagogy and Professional Responsibilities certification exam [PPR]. They're also aligned with the Texas Teacher Evaluation and Support System (T-TESS), in the domains and dimensions. I think they're comprehensive, and I think they're very much in line with what we're already doing. But I think this would be something that*

> *we, as a program, can really look at, to maybe focus on one or two, and really research the impact of these. We're already doing them, in a roundabout way, but in terms of the depth, we could definitely go deeper with them.*

> *There are 19 of these of these practices. In addition to these practices, we have other kind of overlays and interfaces with the standards required by the [state] which we can assume for the most part are complementary to these high level practices.*

Another discovery revealed a prevalent goal of preparing future teaching candidates for the classrooms they will inevitably encounter. Faculty repeatedly shared their optimism with HLPs as a way to provide a common curriculum and a set of teaching strategies that future teachers would need to successfully navigate their first years of teaching. For example,

> *I'd say that we would be better off thinking of what we would like our students to know and be able to do by the time they leave our program and what makes our program different and unique. Let's really champion something that's new and innovative and have that drive everything else.*

Finally, the spiraling nature of the curriculum across classes was one way that faculty aimed to provide this common teaching skill set. HLP integration was not seen as the sole responsibility of one course, or one faculty member, but rather a programmatic decision that ensured all students, regardless of the course or course instructor, would receive instruction in these important teaching strategies.

> *[Students] should see these in a spiraling nature, and say, "I got exposure to this when I was in this class, but I saw it again when I was in this class, and it started to make more sense, and then I saw it again." I think the more we can spiral it and keep hitting on any of these that we have the opportunity. I don't want to give the impression that it's extra on top of what I do, it's finding where this is in what we already do, but putting a name to it.*

As seen in these vignettes, faculty perceived several potential benefits toward the inclusion of HLPs as the central foundation and organization of a practice-based teacher education program. Existing alignment with standards, the use of a common language, and the assurance of providing graduates with a common core of teaching experiences was of particular value.

Finding 2.3 - Perceived challenges toward implementing a practice-based teacher education program around an organized set of HLPs included the time, effort, and structure needed to implement such a program.

Faculty members shared several concerns about faculty buy-in among all program

stakeholders and ensuring that instructional alignment did not require one course or instructor to implement all 19 HLPs at once. In other words, faculty members expressed the need for collaboration and continuity along the entire program and not in a single course or experience. This is seen in the following quote from a faculty interview response:

> *I think the number one challenge is time. Number two is feeling good about limiting it to one or two practices a year. Because I think, from reading the literature on it, all those practices are necessary for a teacher to be highly effective. But obviously, it will be a challenge to weave them throughout the program, so that by the end, students have them, or at least have been exposed to them, rather than trying to have it be a drive-by in one or two courses.*

These findings echoed sentiments shared in our second finding around the importance of course alignment and spiraling to ensure that HLPs were sprinkled throughout the program. Faculty consistently shared that HLP implementation could and should not be the sole responsibility of one course or one faculty member, and that such implementation would indeed take extensive time and effort to be effectively introduced across the program.

Finding 2.4 – HLP implementation was limited through a lack of field experience, supervision capabilities in the field settings, or not knowing how practices taught in the preparation setting transferred to classroom practice during the teachers' induction year.

While faculty shared several existing practices correlating with existing HLP implementation (see in Research Question #3), they also shared hesitations about how the practices were extended into field experiences, including student teaching and practicum experiences. Instructors discussed how they often were unable to hold teaching candidates accountable for implementing practices in field-based experiences due to the limitations that exist in these settings. Because campuses and cooperating teachers often hold the power in these placements, TCs have inconsistent experiences. Candidates are often unable to try out new teaching strategies in their field placements due to a variety of factors such as scheduling, standardized assessment expectations, and cooperating teachers' unwillingness to yield control. The student teaching semester was cited as the prime time for TCs to practice their newfound knowledge in core teaching practices; however, faculty members were unaware of how these practices were identified and evaluated in these settings. These points are illustrated in the following examples:

> *Well, they've [Teacher Candidates] had opportunities to practice [HLP #10] in class. They're all beginning, preservice teachers. They've never had*

experience doing it with real kids, K-12 kids. They may know about it, but they don't have opportunities to practice. And you don't get the opportunity to practice that until you get to the student teaching experience. The way we've got our fieldwork set up here, it's very difficult to, even in student teaching, it's limited. So, I think that we may teach it, and I think we do a good job at teaching it. However, the practice is completely different, just because of our model.

I would love to incorporate more activities for them [Teacher Candidates] to get to be involved rather than observing. But I know that getting field placements is a challenge.

I absolutely have no idea. Unfortunately, I don't know how well this actually transferred or stayed with them [TCs] or how it really impacted their practice. (When asked about how the HLP practice is monitored in the classroom).

Additionally, faculty raised the issue of the ever-increasing move toward online programs and how to provide practice-based experiences in these types of environments effectively. Online courses offer unique challenges to faculty in practice-based fields since instructors are limited in the kinds of quality teaching examples and experiences they can provide. Instructors cannot use in-class demonstrations and exercises, but instead, rely heavily on pre-recorded material or field-based opportunities. This additional reliance on field-based settings for quality modeling might create added concerns for programs already limited in quality field based application:

Some potential challenges, personally and for the program, are that as we move more online, I think it's harder to model these [HLPs]. It's not impossible. [In online classes] we try to draw their attention to good teaching, I think they need to at least see it. I think that the video aspect is going to be crucial, either finding it or creating it. I think that's going to be challenging for us.

While certainly not impossible, the online component of teacher education creates an additional need to re-conceptualize quality field-based experiences while also providing students with teaching artifacts and pre-recorded classroom material for dissection, analysis, and replication.

Finding 3.1 - Faculty provided examples of current teaching practices using representations.

We used NVIVO to comb through our interview data looking for potential cases where faculty were using representations of teaching in their practice. Indicators that

we looked for included lesson observations, field observations, examination of lesson plans, video artifacts, case study scenarios, and other tools in line with the Grossman (2011) list. Although we found numerous examples, we have chosen to highlight two that were of particular importance.

Representations Case 1: HLP #10 - building respectful relationships

> *We always do a thing at the very beginning of classroom management, because we start off that course talking about relationships, and that really serves as a foundation for that course. We do some activities in class. Some that we do, I model them, and then we practice them together, and then [teacher candidates] have to go out and find their own and then bring them back to the class and implement it. One activity that we do is, pass the yellow ball and on it has icebreaker questions on it. We pass it around, and TCs have to throw it to another person. But where their thumb lands, they have to answer a question. After they do that, then they throw it to someone else. But before they throw it they have to recall who the person that just threw the ball to them and what they said.*

In this vignette, TCs first witnessed the faculty member modeling an activity that could open conversations that might move towards building respectful relationships among students and with the teacher. The second present element in this representation is how TCs then have to research a strategy that could be used in a similar manner and bring it back to the class for implementation and discussion. Participating TCs, thus, get multiple opportunities to witness activities and strategies that can be used to facilitate engagement and positive rapport through the building of positive relationships as part of the class (and applied to a classroom context).

Representations Case 2: HLP #1 - facilitating a discussion

> *We would get artifacts from the result of our face-to-face meetings where we would be practicing this with our students. One of the methods was through a jigsaw. TCs would generate a list of questions. As they rotate through their groups, they respond with additional questions as well as demonstrate their understanding of the intellectual standards and their responses. Then they would critique each others' [responses]. And so all of that was recorded on big poster sheets of paper and those were really great artifacts to show.*

The owner of this submission explained a systematic, sophisticated, and research-based method for assisting TCs to develop the ability to guide group discussions. This teacher educator had conducted research on the topic over many years, provided simu-

lated opportunities for practice, and offered teacher candidates feedback based on detailed criteria. In this example, teacher candidates would use a list of intellectual standards and Socratic questioning skills to develop questions to facilitate class discussions. After each discussion session, students would then critique their ability to stimulate and facilitate discussion with the generated questions. The faculty member shared that this activity allowed candidates practice with not only generating quality questions and leading a group discussion in a simulated environment, but allowed them to witness the discussions in class and how the questions contributed or failed to stimulate discussions among the rest of the students.

Finding 3.2 - Faculty provided examples of current teaching practices using decompositions.

Using key features of decompositions of practice we identified and highlighted two examples in the following vignettes of faculty members providing opportunities for teacher candidates to decompose teaching practices.

Decompositions Case 1: HLP #6 - coordinating and adjusting during a lesson

> *Teacher candidates do a reflective critique where they address, this beautiful lesson plan that has been graded before it was presented, so they know if it is a solid lesson plan. They teach the lesson and then answer the questions - "How did that translate into teaching it? Did that translate? What went really well? What could have gone better?" If something really went wrong, "what are you going to do next time to fix that?" So, they really do have to analyze and talk about it.*

In this scenario, the faculty member shared an assignment in her class where TCs have to write and submit a lesson plan. After they receive feedback on the plan, the TCs have to deliver their lesson to classmates. While this could be construed as a representation or even an approximation of teaching practice, there were several key features that led to the interpretation of this practice as a decomposition. First, participating TCs not only participated in the lesson, but broke down the instructional delivery of the lesson compared to the lesson plan. TCs identified components of the lesson such as the introduction, guided practice, independent practice, and how the teacher checked for learning mastery. Second, TCs submitted a written reflection in which they identified each part of the lesson and wrote descriptors as to why the lesson was successful or not based upon what they had learned in the course. The faculty member believed that this assignment prevented students from making an initial judgment upon the lesson based upon one fact - the lesson plan or lesson delivery. Instead, by breaking down each part, TCs examined the complex nature of teaching and how the parts of the lesson each contributed to the success or failure of the lesson as a whole.

Decompositions Case 2: HLP #3 - eliciting and interpreting student thinking

> *In my class, we spend time analyzing teacher questions by reading an article about the common mistakes that teachers make when asking questions (asking too many low level questions, answering their own questions, accepting wrong answers, etc.). TCs watch a video about spiraling between low to high level questions and then apply the learning by coming up with hypothetical questions for a lesson. TCs also have to observe a teacher in their field observations by writing down questions that the teacher asks and then analyze the level, wait time, difficulty, behavior, etc. TCs write a 1-2 page reflection about what they learned from the observation.*

Similar to the case of the first decompositions, this example involves TCs who learned about the various parts of questioning as a teaching strategy, experienced in-class practice analyzing and identifying each of the components through a video artifact, and then applied the decomposition practice through a field observation where they analyzed teacher questioning behaviors in an authentic lesson. Individual parts of the lesson that TCS had to examine included the amount of wait time given, whether the question was convergent or divergent, the type and level of question (Bloom's Taxonomy), and how the teacher responded to the students through feedback or behavior. In these cases, the presence of a teaching representation was necessary to facilitate the decomposition of the overarching teaching practice.

Finding 3.3 - Faculty provided examples of current teaching practices using approximations.

When analyzing faculty responses to our interview questions, we specifically differentiated between faculty practice and teacher candidate practice. On numerous occasions, faculty shared their experiences with teaching HLPs and how they would demonstrate examples in the classroom. However, we considered these more of teaching representations in our analysis of faculty teaching practices. We specifically only included instances of approximations if faculty shared specific examples of how their teacher candidates implemented the practice through either a class simulation event or an actual field setting with live students. Our results are presented in the following two cases.

Approximations Case 1: HLP #17 - interpreting the results of student work

> *I get data from a district and teacher candidates take a look at the data...Then, in groups of three to four, they have to go through and disaggregate the data...They take a look at the actual test scores, and find the strengths in the data, weaknesses in the data, and then I have them trace that strength or weakness back to the reporting category on the test. And*

> *not only the reporting category but the [learning skill] and then the actual question from the test...Once they've learned how to make that connection, then they have to create a program of two formative assessments they could use to correct the challenges, two summative assessments that they could use to see if the kids have learned anything, and then three strategies they would use to address this particular challenge through re-teaching.*

This approximation is an example of a classroom simulation by having TCs analyze student data and make corresponding instructional plans. TCs have to not only analyze the data for instructional weaknesses, but also have to come up with an instructional plan to address the said weaknesses. Additionally, the faculty member also shared how students have to later participate in an authentic "data chat" where they practice talking about the data as if they were in a campus data meeting or parent-teacher conference. TCs in this scenario get practice not only analyzing student assessment data and creating corresponding instructional interventions, but practice in the important task of communicating important information in a professional setting that would be expected in a future teaching context.

Approximations Case 2: HLP #4 - diagnosing common patterns of thinking

> *Teacher candidates do what I call a formative assessment check, where they have a worksheet that has a question, prompt or scenario that they give to students. Students respond to it, and they have to explain their thinking. TCs organize these in piles of the students that got [the concept], and the students that still need help. And then TCs analyze content in the "still needs help" pile to see if there are common misconceptions or missing pieces so that they know what their next teaching steps should be...The assignment helps them to see as a teacher, "how do you know what the whole class knows, and what if you have one outlier, or what if you have twenty out of twenty-five students with a misconception? Then what do you do?"*

In this quote, the faculty member shared an example of an assignment that TCs have to complete with students in a field environment. She gives her TCs a formative assessment task that they have to reproduce, plan and implement in their respective field settings with students. The TCs have to collect the student submissions, analyze student performance and then come back to class ready to discuss next steps in an instructional plan. This approximation allows students to authentically collect assessment data to review common student mistakes and errors and to make instructional decisions based on student performance.

Discussion

We believe the initial findings in our study add significantly to the PBTE and HLP literature base. First and foremost, the teacher educators in our study believed that a practice-based teacher education model grounded in high leverage practices is worth pursuing. This is encouraging considering there is little data on teacher educators' beliefs about HLPs and a common obstacle in any educational change is buy-in (Turnbull, 2002). Our participants showed optimism for the possibilities even while identifying potential challenges associated with scope, sequence, and emphasis of such an initiative. Furthermore, the teacher educators in our study maintained that practice-based teacher education is occurring even though they did not use that terminology. Our findings were ripe with examples of faculty using high leverage practices to provide authentic opportunities for TCs to practice and master complex teaching skills.

Representations of practice are various artifacts and tools that can be used to make the complex work of teaching visible during teacher development. Examples of representations of practice include field observations of teachers in action, video recordings of teaching lessons, written lesson plans, written case study scenarios, copies of student work, and other written instructional tools (Grossman, 2011). Representations are important tools in developing future teachers because they provide a glimpse into the complex work that makes up the teaching and learning process. However, it should be noted that representations in isolation are not complete. Observers in classroom lessons can easily witness the physical interactions between a teacher and her/his students however, little can be deducted about the planning that went into that lesson from a single observation. Alternately, a lesson plan can be examined to look for hallmarks of a good lesson sequence, but cannot be used to measure the success of the students' learning that lesson. Grossman (2011) states that when using representations, the important questions include the "nature, range, and use of these representations across a professional education curriculum - what they enable novices to see and learn and what they leave opaque" (p. 2838). Our findings indicate that teacher educators used numerous cases of these "representations" of practice with students highlighted by the authentic practices used to instruction candidates in how to create a positive classroom environment, build positive relationships and facilitate classroom discussions.

Learning from representations can often present a challenge for novice teachers who are not always able to wholly identify successful teaching actions or how to interpret what they observe in a lesson (Grossman, 2011). This is where being able to analyze and breakdown the various components of a complex task of teaching, known as decomposing, can assist the novice teacher. In the task of decompositions, new teachers can observe individual parts of an action that make up a complex behavior such as teaching. Tasks in this larger practice could include focusing on lesson planning as part of instructional delivery or day-to-day classroom routines as part of a classroom management system. Decompositions of practice rely heavily on a "gram-

mar of practice" as constituents strive to identify and name common parts that make up a whole practice. Practices such as adjusting a lesson and eliciting student thinking were used by our teacher educators as authentic methods to decompose and analyze the individual components of the more complex practice.

Approximations of practice are of particular importance to the work of preparing future teachers. Common approximations include student teaching, practicum, and internships where preservice teachers operate as the teacher with a group of students in a K-12 classroom. However, approximations can also occur through in-class lesson simulations and role-play activities that allow teachers to experiment with teaching strategies in lower-stakes conditions. These opportunities to enact pedagogy rely heavily on timely, specific feedback if they are to be effective and can be iterations of a complex teaching task or targeted to a specific teaching skill, such as leading a class discussion (Grossman, 2011). Findings in our study revealed that the high-leverage practices of diagnosing patterns of thinking and interpreting student thinking were great examples of how teacher educators can encourage candidates to approximate teaching practices in authentic settings. This was mainly in part due to the required field experience, availability of released test scores and other relevant student work samples.

One particular concern that we discovered was the issue of transfer and application to future teaching contexts. While we uncovered numerous examples of teacher practice centering around this notion of representations, decompositions, and approximations as a pedagogy of enactment, faculty shared that they do not have concrete protocols and assessments to measure how and if the teacher candidates in our program are effective enactors of the practices they learned in the program. This is repeatedly cited in the literature as a major concern for the issue of practice-based teacher education (Hatch & Grossman, 2009). Enacting practice in field-based environments, classroom simulations, and student teaching contexts under the supervision of a mentor teacher is one thing; but being able to implement these core practices in isolation and with actual K-12 students is quite another. One such method for countering this obstacle is through the pedagogy of ambitious teaching (Lampert et al., 2013; Lampert & Graziani, 2009; Windschitl, Thompson & Braaten, 2011). In this methodology, novice teachers and teacher educators benefit from practice-based methodologies by enacting ambitious teaching practices inclusive of instructional activities and rehearsals that mimic authentic teaching contexts. Teacher educators need more systematic methods for implementing and evaluating the effectiveness of teacher candidate practice through various instructional activities and tools, rehearsals, videos of candidates in action, and rubrics to measure and communicate the effectiveness of the enacted practice.

Policymakers and reformers often argue that teacher education is failing, novice teachers are unprepared, and teacher candidates are not learning the key practices needed for effective classroom teaching. However, our findings present contrary evidence to this deficiency narrative. Teacher education faculty, while not necessarily

accountable for each individual practice, do strongly agree with the notion of teaching research-based practices necessary for teachers to learn before entering the profession. Survey results and interviews indicate that faculty members exhibit elements of practices consistent with at least one TeachingWorks HLP in their courses and implement strategies to assist students in being able to decompose, represent, and approximate these practices in hypothetical situations. Our findings demonstrated what Lampert (2010) described: "A strong congruence seems to exist between the notions that teaching is made of component practices and that teaching can be learned by practicing" (p. 32).

While it is beyond the scope of this study to identify whether these practices fully meet the criteria of HLPs, we were encouraged to see teacher educators providing representation, decomposition, and approximation opportunities for teacher candidates. Faculty participants described numerous examples of using various teaching representations and artifacts as a way to provide input and authentic examination of the tools of the trade. Lesson plans, field observations, original lesson plans, lesson plan revisions, teaching videos, case study scenarios, and authentic student data were all examples of artifacts that faculty had been using in their teacher preparation courses. Furthermore, faculty in our study not only distributed and facilitated the examination of these artifacts, but actually provided TCs with opportunities to dissect and break down complex teaching practices into important individual components. Approximations of practice did occur through in-class simulations and in some limited field experiences as TCs were able to implement and practice their newfound knowledge in modified teaching contexts. Overall, participants shared thoughtful and systematic methods for helping TCs improve in the practices they were expected to enact in their teaching careers. Scholars and educational leaders should most certainly tap into existing teacher educators' expertise and wisdom of practice when looking to pursue change and teacher education reform initiatives.

Finally, the call for coherence within teacher preparation was evident in our study as many participants expressed frustration in the link between their classes and field experiences. PBTE and HLPs both offer possible means towards developing a grammar of practice that can be present across classes, into field experiences, and into their teaching careers. We believe the initial findings from our study can provide insights into the possibilities and challenges for teacher educators seeking to move towards practice-based teacher education with high leverage practices.

Limitations

This study is limited because it is context specific with a small sample size. While this was beneficial for understanding the context and process of the research, it does not necessarily allow for generalizability to other contexts. Educators and researchers reviewing this article should be careful to understand differences in context and draw

on findings as insights, not generalizable truths. Future research is needed which expands on this study to both identify what teacher educators believe about high leverage practices in other contexts, but also across the field. Larger samples and longitudinal studies could add to gaps in the literature.

Conclusion

This study suggests that teacher educators, at least in this context, are mostly enthusiastic about identifying high leverage practices and achieving programmatic coherence. In fact, they are already enacting elements of practice consistent with practice-based teacher education as defined by Grossman and colleagues (Grossman, 2011; Grossman, Hammerness, & McDonald, 2009). We believe there is potential in education preparation programs developing such coherence and collaboration. However, we agree with the concerns of scholars that teacher educators, teacher candidates, and teachers can be deprofessionalized if such processes are solely top-down (Apple, 2001; Apple & Teitelbaum, 1986) and, moreover, that equity and justice concerns can be marginalized within such processes (Philip, Souto-Manning, Anderson, Horn, Carter Andrews, Stillman, & Varghese, 2019). We hope our efforts to move towards high leverage practices offer insights for teacher educators in their contexts so that they might identify the practices of teaching which may benefit all within the profession.

References

Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies, 5*(2), 272-281.

Apple, M. W. (2001). Markets, standards, teaching, and teacher education. *Journal of Teacher Education, 52*(3), 182-196.

Apple, M. W. & Teitelbaum, K. (1986). Are teachers losing control of their skills and curriculum? *Journal of Curriculum Studies, 18*(2), 177-184.

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional education. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3-31). San Francisco, CA: Jossey-Bass.

Ball, D., & Forzani, F. M. (2009). The work of teaching and the challenge for teacher education. *Journal of Teacher Education, 60*(5), 497-511.

Barton, A. C., Tan, E., & Birmingham, D. J. (2020). Rethinking high-leverage practices in justice-oriented ways. *Journal of Teacher Education.* Advanced Online Publication.

Billingsley, B., Bettini, E., & Jones, N. D. (2019). Supporting special education teacher induction through high-leverage practices. *Remedial and Special Education,*

40(6), 365-379.

Charmaz, K. (2014). *Constructing grounded theory.* Thousand Oaks, CA: Sage.

Cochran-Smith, M. & Lytle, S.L. (2009). *Inquiry as stance: Practitioner research for the next generation.* New York, NY: Teachers College Press.

Corbin, J. & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage.

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives, 13*(42), 1-48.

Forzani, F. M. (2014). Understanding "core practices" and "practice-based" teacher education: Learning from the past. *Journal of Teacher Education, 65*(4), 357-368.

Goodwin, A. L., Smith, L., Souto-Manning, M., Cheruvu, R., Tan, M. Y., Reed, R., & Taveras, L. (2014). What should teacher educators know and be able to do? Perspectives from practicing teacher educators. *Journal of Teacher Education, 65*(4), 284-302.

Green, E. (2014). Building a better teacher: How teaching works (and how to teach it to everyone). New York, NY: W.W. Norton & Company.

Grossman, P. (2011). Framework for teaching practice: A brief history of an idea. *Teachers College Record, 113*(12), 2836-2843.

Grossman, P., & McDonald, M. (2008). Back to the future: Directions for research in teaching and teacher education. *American Educational Research Journal, 45*(1), 184-205.

Hatch, T., & Grossman, P. (2009). Learning to look beyond the boundaries of representation: Using technology to examine teaching (Overview for a digital exhibition: Learning from the practice of teaching). *Journal of Teacher Education, 60*(1), 70-85.

Hiebert, J., & Morris, A. K. (2012). Teaching, rather than teachers, as a path toward improving classroom instruction. *Journal of Teacher Education, 63*(2), 92-102.

Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. *Forum: Qualitative Social Research, 11*(2), 1-21

Lampert, M. & Graziani, F. (2009). Instructional activities as a tool for teachers' and teacher educators' learning. *The Elementary School Journal, 109*(5), 491-509.

Loughran, J. (2008). Toward a better understanding of teaching and learning about teaching. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre, & K.E. Demers (Eds.) *Handbook of research on teacher education: Enduring questions in changing contexts* (pp. 1177-1182). Routledge.

Maheady, L. J., Patti, A. L., Rafferty, L. A., & del Prado Hill, P. (2019). School–university partnerships: One institution's efforts to integrate and support teacher use of high-leverage practices. *Remedial and Special Education, 40(*6), 356-364.

McDonald, M., Kazemi, E., & Kavanagh, S. S. (2013). Core practices and pedagogies

of teacher education: A call for a common language and collective activity. *Journal of Teacher Education, 64*(5), 378-386.

McLeskey, J. (2017). High-leverage practices in special education. Arlington, VA: Council for Exceptional Children.

Mehta, J. D. & Teles, S. (2014). Professionalization 2.0: The case for plural professionalization in education. In M. McShane & F. Hess (Eds), *Teacher quality 2.0: Will today's reforms hold back tomorrow's schools?* Cambridge, MA: Harvard Education Press.

Meuwissen, K. W., & Thomas, A. L. (2016). Can studying adolescents' thinking amplify high-leverage social studies teaching practice? Challenges of synthesizing pedagogies of investigation and enactment in school–institutional contexts. *Theory & Research in Social Education, 44*(3), 385-415.

Mitchell, D.M. & Reid, J. (2017). (Re)turning to practice in teacher education: Embodied knowledge in learning to teach. *Teachers and Teaching, 23*(1), 42-58.

Neel, M.A. (2017). Making sense and facing tensions: An investigation of core practice complexities. *Teaching Education, 28*(3), 257-278. DOI:10.1080/10476210.2017.1296826.

O'Flaherty, J. & Beal, E. M. (2018). Core competencies and high leverage practices of the beginning teacher: a synthesis of the literature. *Journal of Education for Teaching, 44*(4), 461-478.

Peercy, M.M. & Troyan, F. J. (2017). Making transparent the challenges of developing a practice-based pedagogy of teacher education. *Teaching and Teacher Education, 61*, 26-36.

Philip, T. M., Souto-Manning, M., Anderson, L., Horn, I., J. Carter Andrews, D., Stillman, J., & Varghese, M. (2019). Making justice peripheral by constructing practice as "core": How the increasing prominence of core practices challenges teacher education. *Journal of Teacher Education, 70*(3), 251-264.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63-75.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14.

TeachingWorks. (n.d.). High-leverage practices. Retrieved from http://www.teachingworks.org/work-of-teaching/high-leverage-practices.

Turnbull, B. (2002). Teacher participation and buy-in: Implications for school reform initiatives. *Learning Environments Research, 5*(3), 235-252.

Villegas, A. M., & Lucas, T. (2007). The culturally responsive teacher. *Educational Leadership, 64*(6), 28-33.

Windschitl, M., Thompson, J., & Braaten, M. (2011). Ambitious pedagogy by novice teachers: Who benefits from tool-supported collaborative inquiry into practice and why? *Teachers College Record, 113*(7), 1311-1360.

Zeichner, K. (2012). The turn once again toward practice-based teacher education. *Journal of Teacher Education, 63*(5), 376-382.