

Conclusion

The discussion in this chapter presented a clearly delineated interpretive process embedded in clinical experiences for learning teaching that are developmentally sequenced. Concepts are interconnected, knowledge is cumulative and learning is mutual and reciprocal among candidates and mentors. In this process, candidates learn teaching, and mentors gain deeper understanding of their own practice. This approach enables teacher educators to contribute to improving the quality of teaching and learning in P-12 schools while preparing the next generation of classroom teachers.

Further, this systematic approach to clinical experiences for learning teaching provides an exemplar that can be used in designing entire preservice teacher preparation programs. Foundations courses can be linked to clinical experiences by supporting candidates in constructing related knowledge of the historical, sociological and theoretical context for schooling in the local community and the larger society. The pedagogical approaches presented in methods courses can go beyond propositional and procedural knowledge to include conditional knowledge linked to clinical experiences for learning teaching in classrooms. The epistemic practices of focused inquiry, directed observation and guided practice or peripheral participation can be applied in courses and experiences across the program.

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7

A CLINICAL CLASSROOM PROCESS

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Introduction

Many urban students will come from a variety of cultural backgrounds, speaking an array of different languages (August & Haketa, 1997). By the year 2030, 40% of all public school students in the United States will come from diverse cultural and linguistic backgrounds (Thomas & Collier, 2001). Teacher preparation programs are charged with the responsibility of preparing candidates with the knowledge and skills to facilitate the desired learning outcomes for urban students. Better teacher preparation translates into better teaching and improved learning outcomes for urban students.

Teacher education programs have attempted to create well-planned learning experiences for learning how to teach. For example, Wilson and Anson (2006) wrote about the use of microteaching as a way to contextualize the complexities of teaching and learning for candidates. The researchers described a 7-week process in which pairs of candidates teach simplified 30-minute lessons with small groups of students (6-8) from the local school. Candidates teach and then reflect on the learning outcomes of the students. This particular experience fostered a professional understanding of the complexities of teaching and learning for preservice candidates. However, the research report did not address the effects on student academic performance. Hollins (2011b) described how an epistemic practice focused candidates' inquiries about learning and teaching and facilitated the development of effective teaching practices that positively affected urban student academic performance.

In this study, a faculty member at a local southern California university and a practitioner at a local urban secondary school explored an embedded signature

assessment called a clinical classroom rotation that promotes intentionally linking teaching practice to expected student learning outcomes by using focused inquiry, directed observation and guided practice (Hollins, 2011b) when learning how to teach. The clinical classroom rotation has three parts: *focused inquiry* about a particular skill or body of knowledge; *directed observation* of a predetermined conceptualization of teaching practice planned and enacted within a clinical classroom by a practitioner; and the guided enactment by the candidate within the field experience classroom. The practitioner is defined as a trustworthy content expert whose intentionality and integrity of practice consistently facilitate the desired learning outcomes for urban students. The practitioner and the university faculty determined the focus of and collaboratively planned the clinical classroom rotation. Candidates were expected to interpret and translate the observational data gathered from the directed observation of the practitioner into knowledge, skills and understanding for the urban classroom during an embedded signature assessment.

The first part of the clinical rotation centers on *focused inquiry*. *Focused inquiry* is an investigation into particular phenomena that influence the processes and conditions for learning within and outside classrooms (Hollins, 2011b). For the clinical classroom rotation, the focus was on how teaching practice and curriculum enactment, grounded in a theoretical perspective, provided students access to ensure strong academic performance. Candidates were given a lesson plan, materials and rubrics to examine and discuss with the practitioner prior to enactment. Candidates were given opportunities to ask questions about the materials and to begin constructing an understanding of the relationship among learner characteristics, pedagogical practices and the intended learning outcomes of the lesson (Hollins, 2011b).

During *focused inquiry*, the candidates, the practitioner and the university faculty constructed a directed observation form. Directed observation was the primary tool used to focus candidate attention on the curricular materials, the pedagogical choices of the practitioner and the responses of the students. Candidates wrote their observations, questions and anecdotal evidence gathered from the observation on the form. Observational data were then interpreted and translated by the candidates with guided assistance from the practitioner and the university faculty.

The second part of the rotation consisted of candidates conducting a directed classroom observation where they witnessed the learning process, took note of the patterns of instruction and began to make sense of how these patterns influence learning opportunities for urban students (Hollins, 2011b). Candidates actively interpreted the particular aspect of teaching and learning enacted and afterward were given opportunities to ask questions and receive one-on-one time with the practitioner to gain insight into the in-the-moment pedagogical decisions made during the lesson.

The final part of the clinical rotation took place in the mentor teacher's classroom during field experience. Here, guided by the mentor teacher, faculty and practitioner, candidates incorporated ideas concerning practice translated from *directed observation* into a lesson and then taught. Candidates were encouraged to define their practice based on evidence of student learning and identify challenges that arose during enactment. These challenges were then brought back to the university, where the candidates and the university professor identified approaches for meeting the challenges. In this way, clinical classroom rotations provide candidates opportunities to develop a more sophisticated understanding of how to utilize different social, theoretical and philosophical perspectives to facilitate urban student learning (Hollins, 2011a).

The purpose of this embedded signature assessment approach was to explore the use of the clinical classroom rotation process as a mechanism for developing teaching practice that has a positive impact on urban science student academic performance. Through the clinical classroom rotation, teacher educators develop an awareness of candidates' strengths and weaknesses concerning the knowledge, skills and understandings needed to teach in urban settings, while candidates simultaneously develop an awareness of the complexities associated with facilitating meaningful and productive learning experiences for urban students.

The embedded signature assessment served two purposes: (1) it was a learning experience for candidates and (2) it was a way for faculty to assess candidates' progress in learning to teach urban students and to assess the effectiveness of program practices. Two focus questions guided the exploration: (1) What information can be gathered about candidate knowledge and skills from the focused inquiry and directed observation of the clinical classroom rotation? and (2) How are responses elicited from the candidates during *focused inquiry* and *directed observation* used to construct learning experiences that enable candidates to effectively teach urban students? Our ultimate goal in this work was to use the answers to these questions to help improve clinical classroom experiences for candidates.

Conceptual Framework for the Clinical Rotation

Preservice teacher candidate learning is socially and culturally constructed and needs to be understood within a particular experiential and cultural context (Cochran-Smith, 2000). Understanding and facilitating this process of candidate learning requires the use of a construct or tool for organizing and interpreting observations and explaining and predicting reactions and outcomes (Hollins, 2011a). The challenge in this clinical rotation was in the design of mediated action and tools that could focus candidate dialogue and experiences and then reshape existing knowledge, beliefs and practices related to teaching and learning (Johnson & Golombek, 2003; Hollins, 2011a). Fernandez and Chokshi (2002) present

a carefully guided experience that mediates the social and cognitive outcomes of teachers when they participate in a lesson study.

Fernandez and Chokshi (2002) point out that lesson study is a tool for evaluating the effectiveness of a particular learning event while actively participating in the collaborative process of lesson planning, teaching-observing and reflective debriefing. When the planning portion of a lesson study is combined with Hollins' (2011b) *focused inquiry* into a lesson plan, it provides an opportunity to make candidates' implicit ideas about teaching and learning explicit. During *focused inquiry*, the group was expected to develop suitable criteria for recognizing whether or not the learning episode provided evidence of effective teaching for urban students, as measured by students' academic performance (Windschitl, 2002).

Second, careful observation of the lesson was a data-gathering opportunity that helped answer focus questions concerning the lesson (Fernandez & Chokshi, 2002). Fernandez and Chokshi's (2002) careful observation was expanded to include Hollins' (2011b) *directed observation*. *Directed observation* was particularly important because it provided a way for candidates to examine and record patterns of actions made by the practitioner and the responses elicited by the students.

Finally, feedback sessions immediately after *directed observation* offered the group opportunities to ask the practitioner about the pedagogical decisions that were made in the moment that characterized the lesson from start to finish (Fernandez & Chokshi, 2002) and to engage in critical exploration of the meanings behind both the questions and answers (Ladson-Billings, 1996). The goal of these Q&A sessions was to provide candidates insight into the different social, theoretical and philosophical perspectives (Hollins, 2011a) that are used to understand one's own teaching practice, perceptions and values (Ladson-Billings, 1996). This supports candidates developing the insight, habits of mind and norms for engaging in meaningful professional discourse (Hollins, 2011a).

Inquiry into Practice

Division K of the American Educational Research Association (AERA) and the National Council for Accreditation of Teacher Education have challenged a selected group of university researchers from teacher education programs, the National Education Association, the Association of Teacher Educators and practitioners to develop a better way of preparing teachers in urban schools, especially high-poverty urban schools. This collaborative group of researchers and stakeholders was encouraged to interpret practices in medical education to improve the process of clinical practice for urban teacher residency (UTR) programs. It was reasoned that medical practices were useful in underscoring the importance of establishing clear routines and procedures in residency programs to consistently apply learning theories in practice and provide a process

for cognitive and intellectual growth for teaching practice (Hollins, 2011a). We present this approach as a way to integrate practices found in medical education into teacher education through the use of this clinical classroom rotation, with the intention of introducing a process of developing teaching practice that facilitates meaningful and productive learning experiences for urban students.

Our inquiry focused on the clinical classroom rotation whereby 19 math and science candidates enrolled in an UTR program and participated in a lesson study that was grounded in socioculturalism and facilitated with structured dialogue. All UTR candidates were enrolled in a curriculum theories course and were actively teaching at least twice a week in a mentor teacher's classroom.

The observation and debriefing took place in a biology classroom located within an urban high school in southern California. The ethnic composition of the school was 55% African American and 45% Latino. The practitioner was an African American woman identified as highly qualified and credentialed to teach biology in the state of California with 12 years of teaching experience.

The clinical classroom rotation as an embedded signature assessment allowed for a close examination of individual candidate experiences pertaining to learning how to teach. By interpreting a practitioner's in-the-moment pedagogy, candidates were encouraged to attend to specific aspects of the lesson using knowledge learned in coursework and then translating this to future practice in fieldwork. Candidates' interpretations were collected and organized using the *directed observation* form, which made analysis of candidates' ability to attend to and interpret practitioner in-the-moment pedagogy possible. The candidates and practitioner also debriefed after the enactment of the lesson to ask clarifying questions and go deeper into the practitioner's thinking.

To assess candidates' ability to attend to and interpret the teaching process, we utilized knowledge regarding learning theory, facilitating student learning, epistemic practice, curriculum and teacher processes. Our aim was to observe patterns in the elicited responses from candidates concerning theories of learning, facilitating student learning, epistemic practice, curriculum and teaching processes. Using NVivo qualitative software, responses to these prompts were coded into groups of skills described and cross-referenced with the type of knowledge reported to support the description (Tables 7.1 and 7.2).

The initial round of coding included categorizing the responses reported on the *directed observation* forms. Each category was examined for a second time, looking for specific evidence of candidates' description of the practitioner's focus on the *nature of science* approach to the curriculum, where the scope and sequence of the learning experiences are based on web-like biological themes that include big ideas such as patterns, systems, processes and relationships grounded in a constructivist perspective of learning. Subcategories or subcodes were based on descriptions of the skills in the literature and initial coding of the

TABLE 7.1 Categories of Skills Described by Candidates

<i>Skills</i>	<i>Indicators</i>
Knowledge of a Theoretical Perspective	• Practitioner decision making • Constructivist perspective of learning • Discourse strategies of students and practitioner in a science classroom
Knowledge of Facilitating Student Learning	• Teacher–student and student–student interactions
Knowledge of Curriculum Content	• <i>Nature of science</i> stance of curriculum
Recognition of Teaching as an Epistemic Practice	• Practitioner decision making • Alignment of planning with enactment
Recognition of Teaching Processes	• Knowledge of content-specific pedagogy • Use of routines • Use of rubrics

TABLE 7.2 Categories of Knowledge Applied by Candidates

<i>Knowledge</i>	<i>Indicators</i>
Proficient Knowledge for the Observation	• Inquiry as opportunity for students to pose questions, collect and work with their own data, design investigations and make claims with instruction • Constructivist theory of learning is enacted when students develop their own ideas, rules and strategies for solving problems and can articulate this to each other and to the teacher • Teacher provides evidence of adjusting the instruction in response to student ideas and reasoning • Sound subject matter knowledge, concepts are integrated, language of the discipline is used • Activities are appropriate for level of students' growth and development
Developing Knowledge	• Inquiry strategies are primarily opportunities to collect data through observation or experimentation and are teacher-centered • Constructivist theory of learning implemented when students help each other and can articulate the learning objective • Science has some empirical and tentative aspects and includes specific ideas • Candidates view science as a process only—not as a way of knowing

responses in this inquiry. Descriptions of the subcategories for each component of skills were as follows:

- The skills needed to sustain a positive learning environment include the ways in which a practitioner alters pedagogy to help students construct deeper understanding of principles, concepts and ideas (Hollins, 2011b). The skills also include how the teacher interacts with students and critiques the interactions according to knowledge of child growth and development (Hollins, 2011b).
- Practitioners enact their theoretical perspective of learning and their philosophical stance on the curriculum (Hollins, 2011b). For this inquiry, the practitioner's theoretical perspective on learning was constructivist, and the philosophical stance on the curriculum was a nature of science perspective.
- The practitioner has the ability to utilize frameworks and a developed epistemic practice to facilitate students' developing and evaluating knowledge and provide social processes and context for communicating knowledge (Hollins, 2011b).

The responses were transcribed and mapped, marking places where candidates made their thinking about knowledge and skills explicit. The first step in analyzing the data was to fracture or chunk the material (Ward & McCotter, 2004). Second, the use of generative questions allowed for a more detailed analysis of the data. Third, data were then subcoded for details that addressed the characteristics of teacher knowledge and skills. Finally, conceptual density was achieved when we continued to use the generative questions to guide the data analysis until the matrix provided good descriptions of all the chunks and was consistent with the guiding frames that were identified for the types of categories.

Findings from Inquiry

Knowledge of a Theoretical Perspective

Constructivist Learning Theory

Constructivist learning theory explains learning as a cultural product and knowledge as shaped by micro- and macrocultural influences that evolve through increasing participation within different cognitive and social contexts (Windschitl, 2002). The purpose of this category in the embedded signature assessment was to observe whether or not candidates could infer the theoretical perspective on learning that was operationalized during the teaching events (see Chapter 6). Responses in this category were analyzed for descriptions of how students made decisions about engaging in scientific inquiry into the surface area-to-volume ratio. Three overall responses were identified in the observations: (1) candidates' ability to

identify students posing questions, hypothesizing and analyzing data as evidence of the learning theory that was operationalized; (2) candidates' ability to describe the inquiry process connected to student decision making as developing knowledge of learning theory; and (3) candidates' inability to connect biology students' elicited responses and actions with the learning theory that was operationalized. One candidate reported that the practitioner made sure that instruction elicited students' use of "meaningful language based social interactions to help with cognition." The candidate supported this observation with more evidence, stating that "the practitioner made use of students' prior experiences and knowledge."

The remaining candidates had difficulty recognizing constructivist learning theory. The reports from the observation forms indicated that 12 candidates attended to student completion of the fill-in-the-blank portions of the lesson, making measurements and calculations and handling the laboratory materials. Five candidates reported that students collected data to support or reject hypotheses and answer questions based on data collected and that students worked in groups to "help each other." These candidates also reported that the classroom routines were enacted to increase students' levels of responsibility.

Discourse Strategies

The focus on discourse strategies as a measure of learning theory is rooted in Vygotsky's concept of the "zone of proximal development"—the notion that developing mental functions must be fostered and assessed through collaborative activities in which learners participate in problem-solving tasks and the use of discourse as a cultural tool (Windschitl, 2002). From this premise, the lesson was planned to demonstrate how the practitioner creates activities for students that are approximations of science practice that lead to certain types of discourse. To be categorized as proficient, candidates were expected to attend to and make note of the questions asked by the practitioner and other indicators that students had been taught explicitly how to work together and engage in discourse during the lesson. Students demonstrated this by clarifying instructions for fellow students and by explaining student roles and procedures during the laboratory activity.

From the recorded responses, it was determined that four candidates attended to student-to-student discourse used to clarify procedures. Two candidates attended to the warm-up question and the use of visual aids to facilitate student participation. One teacher mentioned that students were asked to describe the relationship between hypotonic solutions, hypertonic solutions and osmosis. Altogether, eight candidates described some aspect of student discourse and the strategies used to facilitate the use of academic language. Although all candidates received university instruction concerning the importance of learning environments that facilitate discourse, candidates were unable to consistently attend to the evidence of this skill during the *directed observation*.

Knowledge Facilitating Student Learning

Teacher–Student and Student–Student Interactions

The purpose of this category was to determine the depth of the candidates' understanding of the interrelatedness of the context for learning, the conditions for learning and how both students and the practitioner participate in the learning experience to make meaning and to accomplish the learning goals (see Chapter 6). To determine whether candidates' responses in this category could be described as proficient, responses were analyzed for the candidates' ability to recognize how students were grouped to facilitate discussion and noted how both teachers and students used socially and culturally influenced questions, analogies and examples to make meaning of the learning episode.

Candidates were able to describe two forms of teacher–student interactions and provided one general description of student–student interaction. Candidates interpreted teacher–student interactions as (1) behavior-oriented and (2) interactions that facilitated student responses. Three out of 19 candidates described teacher–student interactions as "disciplinarian," "enforcing the rules" and "enforcing the rules set." These candidates were described as having a developing knowledge of teacher–student interactions.

Four out of 19 candidates attended to specific student–student interactions. One candidate noted that students aided each other as the practitioner walked around the room checking for answers to the warm-up question; however, student-attempted use of academic language, the ability to clarify directions and the analogies and examples used by students were not described. There were no records of the questions that students or the practitioner asked, analogies, elaborations or examples used that helped both the practitioner and the student make sense of the learning situation.

Knowledge of Curriculum Content

Nature of Science Perspective of Curriculum

The purpose of this category was to determine if candidates could recognize how the curricular perspective was enacted in the science classroom. The nature of science perspective takes the stance that science is an integrated field of knowledge with connections and themes that might be hierarchical or web-like and includes big ideas such as patterns, systems, processes or relationships (Schneider & Plasman, 2011). In this view, teachers are representative of canonical science and, as such, are disciplinary practitioners who process intellectual skills and dispositions for students (Windschitl, 2002). Thus, teachers engage students in scientific discourse, plan and enact learning experiences that are relevant to the discipline and use tools commonly available to practitioners in the field.

Tools include academic language, science equipment and scientific text. It was expected that candidates would demonstrate an understanding of the purpose of the curriculum as the facilitation of students' understanding of biology from the nature of science perspective. Candidates were to recognize how students used the formal laboratory rubric and concept maps as tools for understanding science as a process.

All candidates reported that the activity observed was a completion of laboratory procedures. For some candidates, the purpose of the laboratory activity was to follow the procedures for collecting data to support or reject a hypothesis. One candidate described the activity as the "filling out of the laboratory sheet where students could use the formulas to determine certain data." Another candidate stated that students were using the blocks (cell process) to measure and make connections to justify former hypotheses/findings about cells and surface area. These responses were categorized as "developing." Overall, no proficient indicators about the understanding of the purpose and construction of the curriculum were reported.

Recognition of Teaching as an Epistemic Practice

Practitioner Decision Making

The purpose of this category was to observe whether or not candidates could identify the interrelated patterns of experiences comprising the practitioner's teaching and learning routine from the lesson plan reviewed during *focused inquiry*. Candidates were offered a clear explanation of the plan, including procedures, classroom routines and learning tasks.

To determine whether candidate responses were proficient, responses were analyzed for descriptions of the practitioner's reasoning to enact the lesson. Proficient candidates were to identify factors within the learning episode that allow biology students to engage in scientific inquiry. In addition, candidates were to observe which classroom routines and rituals were put in place for the learning episode. Three overall responses were identified for this section: (1) the enactment of the lesson resulted in candidates not identifying specific aspects of the lesson that facilitated inquiry; (2) candidates reported the purpose of the activity as a way to develop general skills for students; and (3) candidates reported hands-on activities, group work and the use of academic vocabulary as indicators of practitioner decision making. Only one teacher described evidence that the lesson was grounded in social constructivist learning theory and that the purpose of the lesson was met because "students expressed their prior knowledge and previous learning experiences." However, the candidate did not provide evidence that this approach was to facilitate student engagement in scientific inquiry.

Teaching Processes

Knowledge of Content-Specific Pedagogy

The purpose of this category was to observe whether or not candidates could recognize the components of practitioner pedagogical practice. During the *direct observation*, candidates were to observe the enactment of the lesson and how pedagogical practices were adjusted to clarify organizing ideas, concepts and principles (see Chapter 6). During the lesson, the practitioner employed strategies for facilitating student construction of research questions and hypotheses and collecting and organizing data. Students were provided multiple representations of cellular surface area-to-volume ratio as represented by diagrams, charts, blocks and verbal explanations. To address any challenges that may have occurred during the lesson, students were encouraged to strategically use these representations and make note of their own decision making while using strategies. To determine whether candidate responses were proficient, responses were analyzed for descriptions of student usage of concept maps, academic vocabulary, use of the wooden blocks as representations of cells and student discourse.

Candidates were able to recognize strategies used to facilitate student learning but did not recognize how these strategies were used to facilitate student decision making and mastery of the scientific process. Thirteen out of 19 candidates reported teacher use of one or more of the learning strategies. Lacking were descriptions of students' use of the tools to formulate questions, hypothesize, experiment and engage in argumentation as the process of scientific inquiry (Duschl, 2008). Even though candidates were given the planning documents that explained the strategies used during enactment, candidates did not report a connection between the facilitative strategies (i.e., concept maps) and the overall concepts of constructing scientific knowledge about cellular dynamics by the students.

Use of Rubrics to Facilitate Student Learning

To be determined as proficient in this category, candidates were to attend to and record the use of rubrics by students to engage in the inquiry process with little assistance from the practitioner. From the recorded responses on the directed observation forms, it was determined that candidates were not able to attend to the use of rubrics as a way to mediate student inquiry skills. During the lesson, candidates were to observe students collecting and analyzing data with the understanding that the earlier steps in the experimentation process had taken place. Candidates' directed observation forms did not provide evidence that this knowledge was considered. For example, one candidate stated that the practitioner processed ideas and thinking skills for students for the gradual release of responsibility during the lesson. A response was categorized as developing due to the attendance to students' independence during the laboratory activity; however, there was no

mention of the inquiry process as represented by the rubric. Another candidate reported a “pre-lab” activity but gave no evidence that this was part of an ongoing inquiry skill development facilitated by the formal laboratory rubric.

Use of Routines

To be considered proficient within this category, candidates’ responses were to include the enactment, observation and interpretation aspects of teaching practice that could be observed during instruction (Hollins, 2011b). During the enactment phase, biology students were to come in, complete their warm-up and discuss their hypotheses based on activities completed prior to the lesson. Second, biology students engaged in an experimentation routine that included measuring blocks (simulated cells of different sizes), calculated the surface area-to-volume ratios and gathered data to support or reject their hypotheses to expand their knowledge of cell structure, function and dynamics in the solution. During this time, candidates were to note how the practitioner used the experimentation routine as a formative assessment technique to collect data on student skills and understanding of the topic. Finally, candidates were to notice how the learning activity was ended and how students were given an opportunity to reflect on their learning.

Candidates were able to recognize the use of the warm-up to facilitate student engagement within the science process. Eight out of 19 candidates attended to the teaching process—specifically the classroom procedures and routines enacted. Of the eight, two candidates stated that the teaching process was used to “enforce the rules.” One candidate described a portion of the enacting process as an “implementation ritual” and noticed that the ritual was used to familiarize students with release questions for the state assessment.

Discussion

We used Hollins’ (2011b) description of knowledge, skills and habits of mind required for quality teaching and Schneider and Plasman’s (2011) review of science teachers’ pedagogical content knowledge development to analyze candidates’ interpretive abilities concerning knowledge of teaching and learning. For example, although candidates at the time of the clinical classroom rotation had participated in coursework concerning learning theory, teaching processes and curriculum and were in field placements, the only clearly developed knowledge category was knowledge of curricular content, in which all 19 candidates could be classified as developing. Table 7.3 displays candidates’ responses demonstrating areas of proficiency, development and pre-developing; the majority of the skills and knowledge for interpretative practice lie within the pre-developing stage and are in serious need of academic attention.

TABLE 7.3 Candidates’ Responses within Teacher Knowledge Categories

Knowledge Category		Number of Candidates Who Responded		
		Proficient	Developing	Pre-developing
Knowledge of a Theoretical Perspective	Enactment of learning theory	1	2	16
	Discourse strategies		8	11
Knowledge of Facilitating Student Learning	Teacher–student interactions		3	16
	Student–student interactions		4	15
Knowledge of Curricular Content	Nature of science		19	
Teaching as an Epistemic Practice	Practitioner decision making	1	6	12
Teaching Processes	Knowledge of content-specific Pedagogy	3	13	6
	Use of routines		8	11
	Use of rubrics to facilitate learning	3	7	12
	Inquiry strategies		5	11

Using Focused Inquiry and Directed Observation

The enactment of *focused inquiry* and *directed observation* in a clinical classroom allowed access to the type of knowledge and understanding candidates used to interpret a learning episode. During the observation, candidates reported pre-developing and developing knowledge of the skills needed to facilitate urban student academic performance. Analysis of candidates’ responses revealed that knowledge of *teaching processes* and *curricular content* was most developed for the group. Other categories of knowledge are in need of intensive re-planning and re-teaching within the preservice program.

Using *focused inquiry* and *directed observation* as epistemic practices for learning how to teach allowed teacher educators to observe patterns in the responses of the candidates and make meaning of the responses elicited. *Focused inquiry* allowed the practitioner to provide an in-depth look at the social, theoretical and philosophical perspectives that inform teaching practice. Taking a sociocultural perspective, learning what a practitioner is thinking and why they are thinking

in a particular way became a resource for continued candidate development (Gallucci, DeVoogt Van Lare, Yoon, & Boatright, 2010). The learning process was reciprocal because the practitioner interpreted the questions and ideas from the group of candidates, and this became the data the practitioner used to interpret and translate candidate learning from planned learning experiences, including the clinical classroom rotation, the university coursework and the candidates' fieldwork experience.

Directed observation gave practitioners and university faculty a glimpse of how candidates' interpretive practice was developing. Candidates' responses about learning theory, facilitating student learning, curriculum, epistemic practices and teaching processes were made explicit. By engaging in conversations with candidates during the debriefing and analyzing their written responses, practitioners and university faculty constructed understandings about (1) targeted learning episodes based on relevant data and (2) immediate refinement or creation of learning materials needed to further candidate learning. After analyzing candidate responses, we found that one candidate attended to three components of the knowledge required for quality teaching at the proficient level when compared to other candidates. This realization laid the groundwork to address the knowledge for quality teaching that candidates were learning in university coursework.

Proficient Knowledge of One Teacher Candidate

The candidates' responses elicited from *directed observation* revealed only one candidate with proficient knowledge. This analysis raises questions regarding the conditions that are necessary to adequately learn teaching. The results suggest that candidate learning overall is in need of remediation. Candidate learning can be mediated through the use of teaching and cultural tools that are shared across a preservice program. At the time of this inquiry, the clinical classroom and the university coursework were interconnected for just 2 weeks. It is suggested that coherency, continuity and consistent learning opportunities across all three areas are needed to sustain effective learning opportunities for candidates.

Turning to the conceptual implications of this assessment, we draw attention to the coherency, consistency and continuity for learning how to teach.

Conclusion

Our work presents evidence that enacting *focused inquiry* and *directed observation* provides a clearer understanding of what candidates know and understand about teaching practice and what they still must learn. With this information, learning experiences constructed by universities and public schools can extend

candidate knowledge of teaching and learning and address the misunderstandings and pre-developing knowledge in more strategic ways. By using the clinical classroom rotation as an embedded assessment, university faculty and practitioners can gather information about a number of key components of teaching practice that candidates understand. Further research is needed on the effectiveness of the scope and sequence of the preservice education program curriculum in addressing the learning needs of candidates as determined by responses elicited during the embedded signature assessment.

Our results have a number of implications for UTR programs regarding facilitating learning to teach in urban schools. First, our findings indicate that when planning a clinical rotation, practitioners and university faculty should consider focusing on one or two aspects of teaching practice to help candidates improve their skills when attending to, interpreting and translating practitioner teaching practice. Specifically, aspects of teaching practice attended to during the clinical classroom rotation could be linked to the coursework curriculum of the UTR program. Second, by using Hollins' (2011a) epistemic practice for teaching and learning, university faculty can interpret and translate candidate responses and re-plan and re-enact aspects of the curriculum that address the challenges that candidates are experiencing. In this way, we can develop a deeper understanding about what aspects of preservice education make a greater impact on candidates learning how to teach.

In conclusion, the proposed clinical classroom rotation process as an embedded signature assessment is based on research and theory in teacher education and research concerning the enactment of lesson study in K-12 schools. The result is a proposal for a process that features *focused inquiry* around a key component of teaching practice; *direct observation* of a practitioner in a clinical classroom; and guided practice for the planning, enactment, observation, interpretation and translation of a lesson by university faculty, practitioners and mentor teachers. These practices are thought to mirror those that candidates are expected to apply in K-12 schools.

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