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Problems in Developing a Constructivist Approach to Teaching: One Teacher's Transition from Teacher Preparation to Teaching

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Abstract

This article reports a case study of an elementary school teacher moving from her university teacher education program into her first full-time job teaching a K/first-grade class. Using activity theory, we analyzed her conceptualization of teaching as she moved through the key settings of her university program, student teaching, and first job. This conceptualization began with the university's emphasis on constructivism, a notion that diffused as she moved from the formal environment of the university to the practical environment of the schools. Data for the study included preteaching interviews, classroom observations, pre- and postobservation interviews, group concept map activities, interviews with supervisors and administrators, and artifacts from schools and teaching. Data analysis sought to identify tools for teaching and the ways in which those tools were supported by the environments of teaching. Results center on 2 aspects of constructivist teaching: the teacher's use of integrations and the decentering of the classroom. The analysis showed that the teacher, rather than developing and sustaining a concept of constructivist teaching, instead developed what Vygotsky calls a complex, that is, a less unified understanding and application of the abstraction. Implications of the study concern ways of thinking about the common pedagogical problem teacher educators face when students of their programs abandon the theoretical principles stressed in university programs.

During her elementary teacher education coursework, Tracy, described by her university supervisor as being "first or second in her class" in terms of accomplishment, spent an entire semester in a language arts methods class learning ways to help students construct their own knowledge. The professor in the course encouraged Tracy to design lesson plans that gave students choices in their reading and conduct. Tracy

designed her lessons with great excitement and anticipated that the inclusion of what her teacher called "constructivist" activities would produce stimulating learning for her students. (The names of all people and schools in this article are pseudonyms.)

Following this course and prior to student teaching, Tracy was assigned a field experience in a child development facility where she witnessed preschool children "running around doing everything." She saw the "little lights go on" when children, through self-guided adventures, engaged in continual discoveries. They realized, for instance, that mixing sand and water made what they called "mud." In these children's play Tracy was beginning to see in practice what her university professors had described in theory. Her interactions with the children sparked her own lights of revelation as she began to make connections between the theoretical orientation of her university coursework and the daily discoveries of her young students. She felt that she was finally beginning to grasp this arcane term that permeated her preservice education courses: constructivism.

Yet her notion of constructivism was often evanescent, tangible on some occasions but elusive on others. Not only was it an elaborate new concept, professors in her program did not use it consistently. When asked what she expected to learn when she entered her teacher education program, Tracy sighed and paused, then laughed as she said, "I didn't exactly know what to expect from this education program. . . . I don't even know if they knew what to expect, to tell you the truth." Her ambivalence came not only from her own uncertainties but from inconsistencies she found in her professors' teaching. The professor who required constructivist lesson plans, for instance, announced at the end of the semester that they would be assessed through a five-page fill-in-the-blank test. Tracy was astonished. She was aware that her instructor's philosophy was not consistent with "pages and pages and pages of tests." She was shocked and confused because the instructor was telling her to teach one way and then assessing her in another.

Tracy was also perplexed by what she was seeing in the schools. In contrast to the activity through which children learned in the child development center, she found public school classes to be highly structured and authoritarian. Children were typically seat-bound and teachers directed their learning using what her university professors termed "traditional" teaching approaches such as reading comprehension cards. Tracy found the child development facility to provide a constructivist pedagogy that fostered a delight in discovery that she found lacking in the fifth-grade classroom she observed. The thought of 10-year-olds running around a classroom shrieking for joy upon learning a new concept did not seem realistic to her inside public school walls. Tracy wondered, "How could you do this? . . . Would your school support you?" She accepted the idea of "controlled chaos" as an analogy for what she envisioned taking place in her future classroom, but to what extent would she be able to enact this pedagogy when she had a classroom of her own?

For Tracy and other students in her program, constructivism was presented as the best theoretical lens through which to understand teaching and learning. Yet the definition of constructivism, she found, was ephemeral, being inconsistently articulated by different professors in her university courses and inconsistently practiced by some in their assessments (see Phillips, 1995). Furthermore, although she found constructivist activities in the schools that provided her field experiences and student teaching settings, the teachers did not discuss them with her through any theoretical vocabulary that helped her link the activities to a conceptual framework. Tracy could therefore label constructivism when she saw it, but because her mentors in the field did not share the university's discourse, she could not discuss constructivism as a teaching approach with them.

Tracy provided a glimpse into how one teacher negotiated the variety of preservice and in-service activity settings as she moved from her university program to the workforce. Tracy illuminated the struggle novice teachers have in appropriating concepts about teaching, especially when they are ambiguously presented. When asked how she envisioned herself as a teacher, she responded, "I guess I kind of want to be a constructivist teacher." Her uncertainty hints at the confusion she felt over the conceptual tool that provided the overarching theme of her teacher education program.

In this study we tried to understand Tracy's experiences in appropriating the concept of constructivism, particularly given the disconsonant manner in which she experienced it in her university courses. Our investigation focused on the following questions:

1. In what ways was constructivism defined in the different settings in which Tracy learned to teach?
2. How did Tracy's activity in the key settings of teacher education affect the degree to which she appropriated constructivism as a concept?

Through our investigation of these questions we hoped to understand something about both the process of learning to teach and the process of concept development. To do so we relied on activity theory for its conceptual vocabulary and its emphasis on the role of practical activity in concept development.

Activity Theory as a Lens for Concept Definition

Tracy's story will be familiar to those who work with preservice teachers trying to learn new concepts about teaching, particularly when schools and universities lack congruence in their goals for schooling, expectations for the kinds of learning that benefit students, agency expected of teachers as curriculum developers, social practices expected to promote learning toward educational goals, and the means through which their students acquire and represent academic knowledge. Because of these differences, early-career teachers often abandon the teaching practices emphasized in university programs and gravitate to the values of the schools, which provide the site for the ultimate judgment of their competence as teachers. This conundrum has proven most vexing to teacher educators (Borko & Eisenhart, 1992; Fagan & Laine, 1980; Grossman, Valencia, & Hamel, 1997; Newell, Gingrich, & Beumer-Johnson, 2001; Ritchie & Wilson, 1993; Wideen, Mayer-Smith, & Moon, 1998; Zeichner & Tabachnik, 1981).

Grossman, Smagorinsky, and Valencia (1999) argued that activity theory (Cole, 1996; Leont'ev, 1981; Wertsch, 1981), emerging from the work of Vygotsky (1978, 1987) and his students, can help explain the ways in which early-career teachers negotiate the transition from the context of the university program to full-time teaching in school systems. Activity theory emphasizes the settings of human development and the goals, tools, and social practices that guide action within them. We will next outline the aspects of Vygotsky's work that are germane to our analysis of Tracy's developing conceptions of teaching.

Concepts, Complexes, and Pseudoconcepts

Vygotsky (1987) was concerned with the ways in which people develop concepts over time. To Vygotsky, word meaning is the appropriate unit of analysis for studying the development of consciousness, which he equates with development of concepts. Through the meanings that they attribute to words, people reveal the degrees of abstraction that they have achieved in their thinking: "Consciousness is reflected in the word like the sun is reflected in a droplet of water. The word is a microcosm of consciousness, related to consciousness like a living cell is related to an organism, like an atom is related to the cosmos. The meaningful word is a microcosm of human consciousness" (p. 285).

Vygotsky (1987) outlined how word meaning indicates the degree to which people grow toward what he called scientific concepts. People learn scientific concepts through formal, systematic instruction; Wertsch (1991; cf. Luria, 1976) indeed argued that the Russian term *naychnoe ponyatie* is more properly translated as an "academic" rather than scientific concept (p. 39). Central to a concept is that the individual elements under its aegis are unified by a single theme. Vygotsky distinguished scientific concepts from spontaneous concepts, which are generalizations learned informally through practical activity and everyday social interaction. Vygotsky valorized scientific concepts as the height of intellectual activity because formal, abstracted knowledge of a concept enables one to reapply it to a new situation, whereas spontaneously developed concepts tend to be situated in the context in which they are learned and thus less amenable to abstraction to new situations.

Vygotsky (1987) further distinguished between concepts and complexes, with complexes lacking the unity of both scientific and spontaneous concepts and the formal, abstract logic that underlies a scientific concept. Vygotsky explained that

> if empirically present, *any* connection is sufficient to lead to the inclusion of an element in a given complex. This is the essential characteristic of the complex's construction. The concept is based on connections of a single, logically equivalent type. In contrast, the complex is based on heterogeneous empirical connections that frequently have nothing in common with one another. Stated somewhat differently, objects are generalized by a single feature in the formation of the concept but by multiple features in the formation of the complex. . . . In the concept, each object is included with the generalization on the same basis as are all the other objects. Each of the elements is connected to the whole that is expressed in the concept, and through this whole to each of the other elements, *by a single image and by the same type of connections.* In contrast, the elements of the complex may be connected to the whole and the other elements that constitute it by extremely heterogeneous connections. (p. 137; emphasis in original)

A complex therefore encompasses a group of items in which individual members are linked according to shared properties, though not all are linked according to the same property. To illustrate: When learning something new, people often categorize diverse things together because they share a property. A young child, for instance, will often see a four-legged creature, learn to name it a cow, and then upon seeing a horse, call it a cow. This same tendency can take place at more sophisticated stages of learning. Hayes (1993), for instance, discussed what he feels is a conflation of positivism and empiricism in critiques of research, which he believes "have been reductive and inadequate both conceptually and historically" (p. 314). To Hayes, characterizing empirical research as positivistic is not much different from calling a horse a cow, simply because both share some traits.

Between the complex and the concept falls the "shadow of the concept, one that reproduces its contours": the pseudoconcept (Vygotsky, 1987, p. 144). A pseudoconcept bridges the two developmentally. It has all of the appearances of a concept yet connects the objects "on the basis of simple association" (p. 142) rather than generalizing according to a single feature. Vygotsky said that "in its external characteristics, the pseudoconcept is as similar to the true concept as the whale is to the fish" (p. 144) yet includes internal contradictions that prevent it from being a concept. To alter Vygotsky's language somewhat for our present purposes, "The speech of those who surround the [learner; i.e., Tracy] predetermines the paths that the development of the [learner's] generalizations will take" (p. 143). That is, learners come across words through their transactions with other people for whom words have definition and conceptualization. The learner's social role

is to come to the same understanding for words as elders and other societal veterans have for them; this process is illustrated through Tracy's efforts to understand constructivism as her professors used it. In the course of development, a learner goes from the highly associative complex, to the apparently conceptual yet internally contradictory pseudoconcept, to the unified concept.

These distinctions are germane to our study of Tracy because, as the vignette that opens this article suggests, Tracy's notion of constructivist teaching, though academically learned and potentially amenable to abstraction, lacked the kind of unity Vygotsky (1987) found necessary for serving as a concept. To return to Vygotsky's terms, the speech of those who surrounded Tracy did not provide her with a unified sense of constructivism, as we will report later. Tracy's case is particularly interesting because her experiences raise the question of how a concept achieves an authoritative or official definition, particularly when the term—for example, constructivism—that represents it is interpreted and presented in conflicting ways in the formal arena of school.

Furthermore, her experiences in school—her practical activity—were not accompanied by any formal vocabulary to help her refine her university-based notions of constructivism into a unified whole. Frequently, university-based theorists assume that their own formal knowledge privileges their own definition of a concept over those of others, particularly those that emerge from practical activity. As such, they differentiate between their own conceptions and those of practitioners, according greater validity to their own views in a way that corresponds to Vygotsky's elevation of scientific over spontaneous concepts. One question that emerged from our research was this: In what way, and from whose perspective, does a concept become a concept? When conceptions are different, by what means does one gain authority over another? When a learner encounters multiple conceptions associated with the same term—for example, constructivism—what are the consequences for the learner's ability to appropriate a coherent conception of that term?

Settings

Activity theory is fundamentally concerned with the contexts for human development, what are typically referred to as settings. In our study of Tracy, the key settings were her university program, the multiple sites of her field experiences and student teaching, and the site of her first job. Each of these settings included innumerable subsettings and idiosettings; that is, settings within the settings, each with its own goals and attendant social practices for achieving them. For instance, each of the classes taken within the university preservice teaching program was both subsetting and idiosetting of the program as a whole.

Central to a setting is the motive or outcome implicit in the setting. Wertsch (1985) maintained that "the motive that is involved in a particular activity setting specifies what is to be maximized in that setting. By maximizing one goal, one set of behaviors, and the like over others, the motive also determines what will be given up if need be in order to accomplish something else" (p. 212). This motive provides a setting with a sense of purpose that implies a code of suitable conduct. In this study within the conflicting motives of key settings of Tracy's formative teaching experiences, her concept of constructivist teaching began to dissipate. In grand terms the university's motive included the development of a formal theoretical vocabulary, what Vygotsky (1987) would call a scientific conception of teaching. In contrast, the school's motive centered on practical activity; if teachers developed concepts for teaching in the school setting, they would be of a spontaneous nature. Paradoxically, the university program's dedication to constructivist teaching resulted in different motives within its subsettings and idiosettings, which in turn led to different conceptions of constructivism being promulgated throughout the

course work. As a result, students such as Tracy did not develop the kind of unified conception of constructivism that Vygotsky feels characterizes a true scientific concept.

Tools

Psychological tools, like more familiar tools such as hammers and shovels, enable people to act on their environments. Tools are the means through which people engage in activity within a setting, using them according to the social practices that obtain within the setting. Of course, not all activity within a setting takes place in accordance with the overriding motive; resistance occurs as well, as does tool use, which, although not resistant, does not follow conventional practice. Of concern to us in studying Tracy's developing knowledge of how to teach were her understanding and use of two types of pedagogical tools, conceptual and practical (Grossman et al., 1999).

Conceptual tools are principles, frameworks, and ideas about teaching and learning that teachers use as heuristics to guide their instructional decisions. Conceptual tools can include broadly applicable theories such as constructivism and theoretical principles such as cooperative learning that can serve as guidelines for instructional practice across the different strands of the curriculum. Practical tools are classroom practices, strategies, and resources that do not serve as broad conceptions to guide an array of decisions but instead have more local and immediate utility. These might include instructional practices such as learning contracts or using particular kinds of manipulatives, or resources such as textbooks or curriculum materials that provide such instructional practices.

Appropriation

In our study of Tracy, we were primarily concerned with her efforts to learn and use the conceptual tool of constructivism and its practical instantiations. In activity theory terms this process of grasping and modifying a concept carries the name of *appropriation* (Newman, Griffin, & Cole, 1989; Wertsch, 1991). In Tracy's case, because of the erratic nature of the conceptions of constructivism her teacher education faculty provided and the ways in which she observed teaching in school settings, what she appropriated was not, we will argue, a concept but a pseudoconcept.

Appropriation refers to the process through which a person adopts the conceptual and practical tools available for use in particular social environments (e.g., schools, preservice programs) and through this process internalizes ways of thinking endemic to specific cultural practices (e.g., using phonics to teach reading). Wertsch (1991) stressed the ways in which appropriation is a developmental process that comes about through socially formulated, goal-directed, and tool-mediated actions.

The extent of appropriation depends on the congruence of a learner's values, prior experiences, and goals with those of more experienced or powerful members of a culture such as school-based teachers or university faculty (see Cole, 1996; Newman et al., 1989; Smagorinsky, 1995; Wertsch, 1991). Fundamental to appropriation is the learner's active role in these practices. Through the process of appropriation, learners reconstruct the knowledge they are internalizing, thus transforming both their conception of the knowledge and in turn that knowledge as it is construed and used by others.

Context of the Investigation

Participants

Tracy. Tracy, a white middle-class woman, grew up in a city in the southwestern United States. From kindergarten to third grade, she attended the same school where her mother taught. Tracy felt secure during her childhood because, for several years, both of her parents were teachers in the school system, and Tracy knew many of the teachers at her school. Then "they started splitting up the schools," and she was bused from one side of the city to an-

other. Tracy described her elementary school experiences as "traditional," including "sitting in desks the whole time," reading out of basals, and doing extensive grammar work, including the diagramming of sentences.

Tracy viewed her middle school experience positively, citing some of her favorite teachers from those years as being the most nontraditional. Active as a cheerleader and a basketball player during high school, Tracy also did well in school, taking college algebra at a local junior college during her senior year. Directly after high school she enrolled in the state university, where she was originally a journalism major. By her junior year Tracy was disillusioned with the type of writing she was doing in her journalism courses and decided to change her major to computer science. When, during her computer science course work, Tracy came up against "the little problem with math," she reevaluated her strengths and decided that teaching was in her blood.

From early school memories of career days when she was asked to draw a picture of what she wanted to be when she grew up, she had always drawn a teacher. An avid reader and writer, Tracy decided to enroll in the university teacher education program after careful reflection and discussion with her parents. Though her parents had both been teachers, they did not push her into the profession. Described by her university supervisor as "one of the best in her class," Tracy did well academically and was perceived favorably by her professors and mentor teachers.

Mentor teacher. Tracy's mentor teacher during student teaching was Sarah Jackson, also a white middle-class woman who had been at Zachary Taylor Elementary for several years after having taught in a large southwestern city to start her career. Her classroom layout reflected Sarah's creativity and stated priority that students "feel really good about themselves [which] helps them to be more successful in the long run." She believed that Taylor Elementary allowed "a lot more freedom about whole language and really trying new ideas" than did the first school in which she had taught. Sarah was not like the teachers of Tracy's childhood who did not allow students to move around in the classroom. Sarah encouraged students to use the various spaces created for quiet reading when they were finished with their work, and she structured lessons around learning centers as well. Her instruction more resembled that of the nontraditional teachers who Tracy favored in her secondary school education.

Sarah viewed her own teaching as a hybrid of both traditional and whole language approaches: "When I went to college, it was more the traditional approach. And it's been a while, but I have managed to, I feel like, use both, the basals and the traditional approach and the whole language using different grade books and chapter books." Sarah used the term whole language, which was used in elementary schools throughout the district, to describe literature-based reading instruction and open-ended writing opportunities. She used this term to describe Tracy's use of constructivist teaching practices in language arts.

University supervisor. Imelda, Tracy's university supervisor during student teaching, was a doctoral student in elementary education at the university. She was a native of Malaysia with a special interest in elementary mathematics education. She preferred to observe student teachers during math lessons but, to accommodate this study, observed Tracy during language arts lessons. During the semester of Tracy's student teaching, Imelda supervised 11 student teachers, making five visits to the classes of each, while continuing her doctoral studies. This onerous workload limited the time she could spend with any one student teacher and made her classroom observations more a function of when she could schedule a visit than what was propitious for the student teachers.

Imelda's style of supervision was to observe a lesson and then, rather than provide

an assessment of the lesson, to ask the student teacher how the lesson had gone. The sessions were designed, she said, to get the student teachers to reflect on the lesson and think about how it had worked. She described her approach to supervision in terms of cultural differences between Malaysians and Americans:

> But I didn't point [out the problem] to her. But I kind of let her . . . kind of hint and let her [inaudible], but she didn't say anything. I try not to upset her. . . . I always remind myself not to interfere. But I'm not sure I'm doing the right thing sometimes. Can I suggest or do I—I don't not know my [inaudible] authority here. . . . In this culture I try not to, but in Asia I would say that because we are more direct. We don't think of how people feel, we just talk about things. See, we don't worry . . . if she is an Asian, I would say that. She's an Asian student, I feel more willing to say that. So I'm not afraid that I might hurt her because we are talking about students here. So we are more . . . emphasize more student. But here I know that the culture is different. People think about feeling, how they feel. They are so afraid of hurting others' feelings, so I reserve that.

Imelda's indirect style of supervision and the limited time she could spend with any one student teacher mitigated the influence of the university program during Tracy's student teaching. Rather than reinforcing the values of the university program, she provided a forum for student teachers to evaluate their own teaching, usually in terms of the lesson's purpose within the school's conception of teaching.

Settings

University program. Tracy attended a 4-year research-oriented university in the southwest. She was a fifth-year student majoring in elementary education in the Department of Curriculum and Instruction, one of three departments in the College of Education. The College of Education offered preservice training for prospective teachers through a National Council for the Accreditation of Teacher Education (NCATE)–approved 5-year program, with the fifth year taken for graduate credit. Tenure-track faculty taught most courses in the program. Ideally, students took 2 years of general course work and then declared an education major. During their junior and senior years they were required to take core courses in the college's psychology/technology and administration/foundations departments. In the elementary program, in the final semester of their senior year, they took a set of content-area methods classes from curriculum and instruction faculty. In the fifth year, for graduate credit, they did their student teaching and took an action research class during one semester and electives during the other.

As part of three preservice courses (School in American Cultures, Developmental Psychology, and teaching methods classes), preservice teachers were required to accumulate a minimum of 100 hours of field experiences. The elementary education program required five methods classes taken together in an elementary block. Each methods course required 30 hours of field experiences, giving elementary education majors over 200 hours of field experiences prior to student teaching. These field experience hours were tied to course themes and required the production of some sort of evaluated work, including field notes, lesson plans, analysis of teaching, and other observational and/or generative assignments that illustrated the program's avowed constructivist principles.

The elementary preservice program was distinguished by the following traits:

- The program had an official conceptual perspective of Piagetian constructivism that was integrated in all elementary education courses taught within the curriculum and instruction department. As revealed through interviews and group meetings conducted with seven elementary case study participants, this perspective included the tenets that (*a*) learning and learners are the focus, (*b*) students' activity is paramount,

(*c*) the emphasis on learners suggests attention to student diversity, (*d*) appropriate materials include literature and writing, with meaning constructed by the learner, and (*e*) knowledge is connected.
- Students went through their sequence of classes as a cohort.
- Prior to the methods classes, students were not required to take courses in content areas. Rather, they took a number of pedagogically oriented courses in the curriculum and instruction department.

Student teaching. Tracy's semester-long student teaching assignment was at Zachary Taylor Elementary School, the oldest school in the university town. Built in 1894, the school had burned down, been rebuilt, and seen the addition of several wings, a media center, a gymnasium, and a courtyard. In keeping with the school's efforts to preserve its traditions, a bell from the original school continued to hang in a bell tower over the media center. For principal Karen Tate, the bell symbolized "the light of those hopes and dreams [that] continue to shine ever brighter with each new generation that is influenced by Taylor School." Taylor Elementary was well equipped: It was committed to technology, with a demonstration computer lab and community business partners in its technology efforts. Parents at Taylor Elementary were also very involved. The courtyard in the center of the school was both planned and built by parent volunteers. When comparing this school with another school in which she was placed for her field experience, Tracy asserted that while teaching at Taylor Elementary, she was able to do much more in her science and math classes because they could afford more materials.

First-year teaching. Tracy secured her first teaching job at Lakewood Elementary School in one of the state's largest cities, several hours away from her undergraduate university yet close to her home town. Tracy's new principal, Christy Hall, described the area surrounding the school as "its own little community west of the river." The school was steeped in tradition; having opened in 1905, it enrolled many students whose grandparents had attended the same school. Ms. Hall reported that the school had a 51% poverty rate, with the student body being 66% European American, 17% Native American, and 17% African American. Ms. Hall considered her school to be an "inner-city" school and believed that, even with high parental involvement, the teachers were faced with great challenges over the increasing urbanization and poverty of the school.

When looking for new teachers, Ms. Hall discussed a need for people with "diversity in philosophy, no one who says, 'I'm a whole language teacher.'" She referred to a *Kappan* journal article that discussed the pendulum swing between whole language and phonics instruction and, in keeping with the school's emphasis on tradition, believed in the efficacy of phonics instruction as the basis of literacy. Tracy reported in her first year of teaching that the majority of other teachers "want me to teach phonics" in her kindergarten/first-grade class "so whenever they get [the students] they [can teach] whole language."

Believing that no one way of teaching suits all children, Ms. Hall wanted her teachers to "teach a complete child and be aware of all learning styles." She asserted that the future of education can be found in the latest brain research and pointed to studies on motivation showing that giving children peppermints and providing soothing music can promote learning. When walking from classroom to classroom, Ms. Hall wanted to see children engaged in "hands-on" experiences. She believed that she made a good choice in hiring Tracy because she was a teacher who valued "the importance of tactile experience."

Method

The research was designed in collaboration with Peter Smagorinsky (the second author) and Pamela Grossman in relation to the

overall mission of the National Research Center on English Learning and Achievement. We studied Tracy's transition from her preservice education program to her student teaching in three key activity settings and through multiple data-collection methods. The next sections elaborate on each of these aspects of the data collection.

Data Collection

Settings

University program: For the university program we sought to document the kinds of teaching Tracy was exposed to, the theoretical and philosophical emphases of her preservice program, her experiences in the discipline of English, and other experiences relevant to her conception of how to teach language arts. Because the overall design tracked students through their first 2 years of teaching and because data for each case were extensive, we needed to begin data collection close to the end of the education program to decrease the prospects of attrition for the longitudinal data collection. Data from her university program were thus collected through backmapping—that is, reconstructing her experiences through information from interviews and supporting artifacts (course syllabi, papers and lessons written for classes, and other documents).

Student teaching: During student teaching the data collection was designed to document Tracy's experiences in the classroom, particularly the sort of guidance she got from her mentoring teacher and her university supervisor. Tracy was observed and interviewed during three observation cycles, each of which ideally consisted of 3 consecutive days of 90–120-minute observations. Each observation cycle included a preobservation interview with the student teacher, observation of and field notes taken during a series of lessons, and a postobservation interview with the student teacher.

The first observation cycle was conducted with primary attention to Tracy and her teaching of the class. The second cycle centered on her relationship with Sarah, with an effort to identify the type of mentoring Sarah provided and how both Tracy and Sarah perceived that guidance. The third cycle centered on Tracy's relationship with Imelda, again focusing on Imelda's approach to guidance and Tracy's response.

First year of full-time teaching: Tracy's job was roughly 200 miles from the university, making data collection during this year considerably more difficult than during her student teaching. Some interviews were conducted over the phone and tape-recorded via an electronic appliance.

She was observed in two cycles. The first took place in the fall and consisted of a preobservation interview, two full-day observations, and a postobservation interview. The second took place in the spring and consisted of one full afternoon and one full morning of observations, and a postobservation interview. In addition, the school principal provided an interview about the school and Tracy's performance. Artifacts from Tracy's classroom and the school—handouts, curriculum packets—helped to corroborate information about the nature of Tracy's instruction available through the observations and interviews.

Data sources. Data consisted of interviews, group concept map activities, field notes, and artifacts.

Interviews: We developed interview protocols for the study with colleagues based on protocols designed by Grossman (1990). Three of the authors conducted interviews at the following points in the study:

1. *Before the first semester of teaching.* Tracy provided extensive interviews during the summers prior to both student teaching and her first year of full-time teaching. Before student teaching, Tracy described her apprenticeship of observation, personal philosophy and conceptions about teaching, preservice course work, and preservice field experiences. Before her first year of full-time teaching, Tracy described her general teaching situation, her goals for the school year, the kinds of support and supervision she

would receive, the texts and curriculum she would teach, and other information and beliefs that would guide her first year of teaching.

2. *Observation cycles.* Interviews were conducted before and after observations for most observation cycles; in some cases equipment malfunctions or scheduling conflicts prevented interviews from being conducted successfully. In preobservation interviews Tracy was asked to explain the forthcoming lessons and her reasons and expectations for them. In postobservation interviews she was asked to reflect on observed lessons and explain her reasoning behind them and evaluation of them. Attendant to the observation interviews were interviews with mentor teachers, university supervisors, school administrators, colleagues, and others who observed Tracy's teaching in conjunction with the research observations.

Concept map activities: Before and after student teaching, Tracy and the other elementary education participants gathered to produce a concept map that depicted their conception of teaching. The procedure for the concept map activity was as follows:

1. The researcher asked the group to discuss the ideas they gained in their teacher education program that were most valuable to them, prompting for thinking/reasons behind choices.

2. The researcher followed up with a question about ideas they had gained about language arts instruction (if not mentioned in response to the general prompt).

3. As they discussed, the researcher wrote these ideas on cards, adding ideas from individual interviews or field notes that had not been mentioned.

4. The researcher displayed the cards, then asked each individual to sketch a concept map of how these ideas were related to one another.

5. Based on the individual sketches, the group discussed and produced a concept map, with the researcher prompting for thinking/reasons behind the connections.

Once completed, the note cards, individual sketches, and group concept map were saved for later reference, and the discussion was transcribed for analysis.

Field notes: Two of the authors who were graduate students at the time took field notes on a laptop computer during each observation. In addition to being analyzed, notes were used during the interviews to stimulate questions about events occurring during the lessons.

Artifacts: Tracy provided a number of artifacts that were included in the data. From her preservice course work she furnished course syllabi and course work to corroborate her interview statements about the program emphasis and her view of its intentions. In addition, university faculty provided documents describing the preservice education program. Tracy provided her school mission statements and curricula, her planning books, her textbook lessons, the state-prescribed curriculum, and other relevant documents.

Data Analysis

The field notes and interviews were coded using a system designed to identify the tools that Tracy used or referred to in her interviews, or that Sarah or Imelda described in their interviews. Using the qualitative data analysis software *Atlas/ti,* two of the authors collaboratively read each interview and set of field notes and assigned a set of codes to each reference to a tool. To the extent possible, each tool was coded in each of the following categories:

- *Name of tool:* this category included dozens of tools, including constructivism, reading centers, basal readers, the state-mandated curriculum, manipulatives, worksheets, and many others
- *Type of tool:* conceptual, practical
- *Area* of teaching in which the tool was emphasized: student diversity, management, teaching, learning theory, assessment, writing, speaking/listening, reading, language
- *Attribution by participant* regarding where she had learned of the tool: apprenticeship of observation, teacher

education course work (English/language arts), teacher education coursework (other), mentor teacher, university supervisor, other field experience, school administrator, university supervisor, university student cohort, colleagues at site, secondary source (texts, internet, prepackaged curriculum materials), curriculum materials (ancillary commercial teaching scripts and aids), professional development activities, mandate (e.g., state-mandated skills and objectives)

- *Problem* toward which the tool was applied: student learning, identity, context surrounding classroom (e.g., policy), relationships, motivation, perception of students, control

For instance, during her initial interview, Tracy said, "And so it was kind of interesting and, I mean, they [the school where she had her field experiences] didn't have any manipulatives or anything to use, so my science class [at the university] let us use those materials or whatever, so that was good. But I could never get there when it [the university curriculum materials center] was open, so I have to go and buy my own materials and, you know, I use paper clips for math manipulates." From this we extracted that Tracy saw "manipulatives" as a pedagogical tool. Because it is broadly applicable rather than a specific, practical tool, we labeled it conceptual; paper clips was coded as a practical tool. Because it applied broadly to teaching rather than referring specifically to a curricular strand such as writing instruction, we coded the area as teaching. Her attribution was to a field experience; the problem to which she applied this tool addressed student learning.

Results and Discussion

We next present data that illustrate Tracy's effort to appropriate the concept of constructivism during her university course work, student teaching, and first job. Her effort was frustrated by the lack of agreement in the formal setting of her learning, the university, regarding how to conceptualize the term. We argue that the lack of agreement in her formal learning—her scientific or academic learning of how to conceptualize constructivism—made it more likely that she would develop a pseudoconcept rather than a concept for the idea. Furthermore, her efforts to think in terms of a constructivist framework were not supported or encouraged in the school settings in which she taught either conceptually or in terms of nomenclature. As her thinking about teaching progressed, then, it was decreasingly guided by a formal concept and increasingly driven by the daily pragmatic concerns of teaching.

Diffuse Notions of Constructivism in the University Program

We opened this article with a story of how Tracy was required to take a five-page fill-in-the-blank test at the end of a course with a constructivist emphasis. This incident was one of several in which her preservice program presented an inconsistent or contradictory version of the program's central concept. We next review data that reveal the program's diffuse presentation of constructivist teaching and learning.

Official constructivist emphasis. The university's elementary education program professed to have a constructivist orientation. According to interviews with curriculum and instruction faculty, the elementary education program emphasized Piagetian constructivism in its research and teaching. In searches for new elementary education faculty, a Piagetian orientation was sought so as to give the program a coherent vision. In addition, the educational psychology department faculty who taught required courses for elementary education majors also had a Piagetian perspective.

During the concept map activity that the research participants engaged in prior to student teaching, they identified constructivism as the umbrella concept to guide all teaching decisions:

Student: That is your theory of teaching. I mean, that is like if you

agree that kids have hands-on experience as opposed to you filling a cup. Everything you do [as a teacher] is going to have that here.

Student: Constructivism.

Researcher: So where is it—if it is so all encompassing, where does it go?

Student: At the top with teacher and then the arrow pointing down.

This discussion appears to show that the students understood constructivism as a concept that guided all of their instructional decisions, as intended by the faculty. Indeed, Tracy complained at one point that she learned constructivism at the expense of other approaches she might have learned: "I'm like okay. I can understand that, but they only taught us basically here at [the university] exactly like they said, 'Well, they have to construct their own knowledge.' That's the only thing, that's the only philosophy I believe I've learned. . . . Give me another philosophy I could actually learn and see if I like it as well. I only learned [constructivism] here."

Yet other data suggested that the concept was not as clear among either students or faculty as it appeared. We next review data suggesting diffusion regarding how constructivism was understood and practiced throughout the program.

Conflicting notions of constructivism. In the following interview, Tracy described her feeling of uncertainty with regard to the umbrella principle of constructivism:

Researcher: When you think about, when you look ahead, what kind of teacher would you like to become?

Tracy: Oh, well, I kind of—I mean I do realize that you have to have some, you know, book work or whatever, especially for the younger grades. I understand that, but I believe you can make it in a better way than just sitting down and, you know, sitting at that desk and doing whatever. And I kind of—I mean I don't really like this term. I guess I want to kind of be a constructivist teacher, but I don't thoroughly know what constructivism is. I do know. You know, I do not exactly know what it is. No one has actually sat down and said, "Well, this is what it is."

Researcher: Yeah.

Tracy: You know, and I think . . .

Researcher: What do you think it is?

Tracy: Well, I mean, I believe, you know, the children do construct their own knowledge, but it's not totally constructivism because you sit there and you say, "Well, here [are] the materials that they can use to construct this knowledge."

Researcher: Uh huh.

Tracy: So you actually provide the materials for them that they have to construct from the knowledge, so I couldn't really say that that's true. I mean, in a sense it is constructivism, but in another sense it's not really. I don't know. It's just hard to say what exactly it is. I don't know. I believe I will keep expanding on my term forever and ever. I don't think anyone knows exactly what constructivism is.

Researcher: Where did you get the term from? How do you know to use it in describing yourself?

Tracy: Well, in my education here, everyone is like well, you know, they have to construct their own knowledge and that means constructivism. And I was just like—so if you say construct their knowledge, that means they're like well no, and then when we're done we sit there and say, this is kind of [inaudible], you know, its kind of like letting them find their own way and find their own knowledge and do this and do this and do this. . . . And so I can't really say that I am a strong believer in constructivism, because I don't know what it is.

Tracy's comments reveal a general understanding that constructivism involves people constructing their own knowledge but show confusion on several points. She noted that teachers do provide the materials that students use, thus assisting with the knowledge that they construct. She also implied a desire to be provided with a clear and consistent definition of constructivism that she never got, instead being left to construct her own definition based on her experiences within a constructivist framework. She believed that her understanding of the term would continue to grow but expressed frustration over the coherence of the conception from which her understanding would grow. She claimed constructivism as "my term" yet believed that no one really knows what it means.

Conflicts between theory and practice. Tracy further revealed that, although the faculty espoused constructivism, they did not necessarily practice it in their own teaching. She identified a disjuncture between theory and practice in some of the classes required in her program:

> It was my first language arts [methods] class. . . . She'd say, "Well, this is what, this is how you should do it, and here is the book. This is a great lesson, blah, blah, blah, blah, blah, but read chapters 1 through 9 and you're going to have a test on it in 2 weeks. And memorize this, this, this, and this," so you come down, you have a test and it's all listing. You know, "List the six characteristics of blah, blah, blah," and so you had to sit there and list and explain. And so we had pages and pages and pages of tests. So her tests did not follow her philosophy necessarily. And so it was just kind of frustrating because you're like, "Well, you're telling me to teach this way," and we're sitting here saying, "Well you don't necessarily have tests but they have to memorize, you know, do not have a test that they memorize things." And then what does she do? She has this stuff memorized, everything for, you know. I mean it was just kind of—I thought it was kind of humorous just because that's how a lot of the classes were.

Tracy's views on the inconsistencies of the professors' teaching were not unique. In the group concept map activity involving Tracy and four other elementary education majors, the subject of professorial inconsistency came up:

> *Student:* That is what I believe, anyway, that constructivism is thrown around a lot just to mean that my teaching is constructivism, because that is what they say they are trying to teach you anyway.
> *Student:* I had a class where constructivism, they said we can't even use that word because we don't know what it is. . . .
> *Student:* I just don't feel that I got very much out of the language arts.
> *Student:* It was kind of more book learning.
> *Student:* Yes. Not application. And in my other classes, we would have a lot of application. And not as much book.
> *Student:* I didn't think the language arts really applied either. I don't know how even to describe it. I want to say boring. But I just don't feel that it—I don't know how to say it.
> *Student:* How about do as I say and not as I do.
> *Student:* Right.
> *Student:* Because it was like, "Okay, do these kind of things. But I am going to just strictly do you on exams. We are not going to really test you on what you can do out in the street."

The program, then, left students to determine for themselves what constructivism meant. Tracy felt on the one hand that the lack of a clear, correct definition was a relief from the kinds of seat and book learning that she had found so tedious during her own schooling:

> *Tracy:* I thought that was kind of neat where, you know, that constructive where one person says it's this and the other person says it's this, and no one really knows what it is.

Researcher: When you say no one, do you mean no students?
Tracy: No students, I don't think.
Researcher: Or some of the faculty?
Tracy: See, I don't think there is a consensus on the faculty either.
Researcher: Maybe they've all constructed their own.
Tracy: Their own knowledge. They've all constructed their own knowledge about it.
Researcher: Constructivism. (Laughs)
Tracy: Constructed their own knowledge about it so no one really knows exactly what it is. And I don't think everyone will ever really know what it is.... Everyone's version is totally different from everyone else's, and it's okay.

The remarks of Tracy and her fellow students in the program suggest that the definition of the central concept in her preservice program shifted from class to class and was often difficult to ascertain in the teaching of the program faculty. Their experiences raise the question of whether a concept can have a definitive or authoritative meaning or whether each individual has an idiosyncratic notion of what something represents. The problem from a student's perspective is that when a concept has different authoritative renditions from different faculty in the formal setting of schooling, it becomes difficult for the concept to cohere. Returning to Vygotsky's (1987) distinction between a concept and a complex: In the formal setting of the university, the schooled notion of constructivism varied from setting to setting. Perhaps this is what a constructivist educator would expect: that each individual would construct his or her own meaning for the term. Yet the students appeared to be confused, ambivalent, and at times cynical regarding constructivism as a consequence of the shifting definitions of the concept they encountered in the university. As we will argue next, the term's equivocal nature resulted, in Tracy's case, in her development of a pseudoconcept rather than a concept.

Tracy's Appropriation of Constructivism

We previously referred to the notion of appropriation as central to an activity theory view of human development. If constructivism is viewed as a conceptual tool for teaching and learning, then the question of interest in this study is, to what degree did Tracy appropriate it—that is, grasp and modify it for her own purposes in new situations? Do the data indicate that what she appropriated was a pseudoconcept rather than a concept? We next review two aspects of constructivism that recurred throughout the data, integrations and decentering the classroom, to help consider these questions.

Integrations. When asked about teachers she remembered as effective from her elementary school days, Tracy immediately identified her fifth-grade social studies teacher: "She would tie any book to social studies no matter what it was." Tracy used the term *integrations,* learned in her preservice education course work, to characterize interdisciplinary instruction. She talked enthusiastically about how her fifth-grade teacher "would discuss this book and how it could tie in other aspects of not just social studies, but also to language arts or to science or to math. And she would sit there and make us think and think and think." Curricular integrations, according to Tracy, make academic work more interesting and fun and help students "tie ... things together."

In addition to identifying integrations in her experiences as a student, Tracy worked to incorporate ideas from one part of the curriculum into parts of others in her teaching. All of her methods courses encouraged her to "pull in things from the outside of school—not just necessarily from inside, [but also] from [the students'] own environment." She accomplished this integration in her design of an interdisciplinary unit on Van Gogh during her student teaching. Her mentor teacher used units a great deal, often structuring reading and social studies lessons around holiday themes, and she en-

couraged Tracy to teach the Van Gogh unit that she had created at the university. In the unit Tracy integrated music, art, and literature to achieve her goal to get "them thinking about art and visualize what they feel about a song."

When Imelda was interviewed following her observation of Tracy's teaching of the Van Gogh unit, she remarked that she felt that Tracy's incorporation of different disciplines into the unit did not represent integrations; in keeping with her indirect style of supervision, however, she did not raise her concerns to Tracy during their feedback session. Imelda saw the lesson as a collection of materials—from the media of music, art, and literature—that Tracy liked and wanted to include in the students' experiences. A true use of integrations as Imelda saw it would involve more than simply including material from different disciplines. From a constructivist perspective students should be able to draw on all resources within their environments to construct new knowledge. Adopting this philosophy would mean availing students of whatever resources they felt were appropriate, regardless of curricular boundaries. The notion of integrations stressed in Tracy's course work emphasized that the learners' synthesis of these materials drew on these resources seamlessly and followed their own logic in constructing meaning. When asked of the Van Gogh unit, "How do you think those lessons went?" Imelda replied:

Imelda: I think not as well as I expected. And one thing I am concerned is, when I interviewed with her, she said that she taught this because she liked this one—Van Gogh. So I would—I'm not sure this is a good thing, because you like this, you teach this. I think they should teach for the benefit of the students, not the things that you like... [Tracy] likes art. So she kind of puts everything in art and others kind of incorporate. I think it is wrong, is very wrong. As a teacher you like art as your own whatever thing. You can do a lot of art things at home, but you know, when you teach, you have right responsibilities, and the curricula need to be there for the [benefit] of the students. So I'm concerned about that one thing. She said she loves art. She likes the artist Van Gogh so she incorporated it. . . .

Researcher: Would you say that was a weakness of the lesson, then, that that song picked may not have been appropriate for kids that age?

Imelda: Yeah. Yeah. But I didn't point [it out] to her. But I kind of let her . . . kind of hint and let her [inaudible], but she didn't say anything. I try not to upset her.

Imelda's comments confirm that Tracy was in the process of developing a pseudoconcept rather than a concept because she combined ideas rather than integrating them purposefully. Tracy offered her Van Gogh unit as an illustration of integration, which she regarded as central to constructivist teaching. Yet it did not meet Imelda's notion of integrations because it focused on Tracy's own interests rather than the students' motivation in selecting resources and appeared to patch together resources rather than orchestrating resources from across the curriculum into a seamless whole. Imelda's view alone would not discount Tracy's view that she was using integrations and thus practicing constructivist teaching. The problem Imelda identified is not one of different conceptions of constructivism but a belief that Tracy was not quite practicing constructivism. Imelda identified a problem in Tracy's notion of constructivism—that she was not using integrations and not modifying plans to accommodate students' developmental needs—that led us to view her notion as a pseudoconcept rather than a concept.

In the following year, Tracy taught at Lakewood Elementary School. Lakewood was 200 miles from the university, and Tracy's only contact with her preservice program was through periodic visits from the research team. She was thus far removed from the concepts through which she had received her formal education about teaching. At Lakewood, Tracy wanted to continue applying integrations, yet her teaching assignment made it difficult for her to do so. She taught a combined kindergarten and first-grade reading course that, in the order of instruction set up by the scope and sequence of the curriculum, was designed to provide students with what Tracy called "basic" skills that would prepare them for academic success at higher grade levels. These basic skills required that she provide phonics instruction, which she had never learned in college. When asked, "Was there an influence with what you learned at [the university] that helped you with planning these types of lessons?" she replied, "Well, whole language since [inaudible] we learned at [the university]. It's been hard for me to go and talk to someone. I had no idea how to teach phonics. Every classroom I was in taught whole language, and now I'm teaching phonics. So it's been really hard for me, but with the nouns and stuff, I did that with all my field experiences in school, and so I know how to do that. But right now phonics is being too hard on me."

The term *whole language* was not used at the university, although mentor teacher Sarah Johnson did use it to describe Tracy's training as a teacher during an interview. It did not, however, appear in any of the interviews or concept maps in which university students and faculty talked about teaching and learning. In her first year of teaching at Lakewood, both Tracy and her principal used the term as a contrast to a phonics approach, much as she had used constructivism as a foil for traditional teaching while at the university. In a later interview Tracy described the expectations for her as the children's first teacher at Lakewood. Her own administration sent her to another school in the district to learn how to teach the Saxon phonics program:

> [The other] school adopted Saxon phonics, and they live by it now. They think it's the greatest thing. And our school hasn't adopted any phonics or whole language. Some teachers teach whole language. Some teachers teach phonics, but the majority of them want me to teach phonics. So whenever they get [the students], they have whole language to teach, so they already know what their sounds say. And so since I'm a lower grade level than the other first graders, since they have first and second graders, then by the time they are there, they will know how to sound out a word—figure it out on their own.

In this interview Tracy revealed a significant change in terminology, shifting from the university-based term *constructivism* to the school-based term *whole language.* She made this shift smoothly, using both terms to describe the same approach to teaching. We see this terminological shift as further evidence that she was working on a pseudoconcept rather than a concept. Although related, constructivism and whole language are not generally regarded as interchangeable. By substituting one term for the other, she also incorporated one set of teaching practices with another. Tracy appeared to be associating attributes of instruction according to multiple features in her conflation of constructivism and whole language.

As we looked at the inconsistencies across notions of constructivist teaching, particularly Tracy's expressed view of using integrations and the apparent lack thereof in her Van Gogh unit, we returned to the university program's protean notion of constructivism as students moved from class to class. We considered the effects of this notion on Tracy's effort to develop a guiding concept for her teaching, particularly as she moved into a new environment that shared neither the university's emphases nor its vocabulary. We cannot say that

a stronger, more consistent conception of constructivism would have helped her appropriate a conception of constructivist teaching or given her teaching greater coherence in her first year of full-time teaching. We can infer, however, that her entropic notion of constructivism was further diffused once the formal efforts of her university faculty were superceded by imperatives she faced at Lakewood Elementary.

Decentering the classroom

Researcher: If you think to your methods class professor, how would you describe her image of what a good language arts teacher is?

Tracy: I'm really not sure. Let's see, to have a lot of creative ideas. To have a lot of authentic books and bring a lot of writing or plays or other types of things to where children can be active in their classroom—not just sit there and [inaudible] read a book. You know how silent reading or whatever, but they can go all over the room and lay in the bathtub if you have one in your classroom or whatever. Read whatever they want to read. Pull in things from outside of the school—not necessarily just from inside—like from their own environment. You could even go outside in the playground and read or you could bring in other things like newspapers, magazines, other things from everywhere and just have the children learn from what they read. . . . So [my mentor teacher] just kind of had the children again construct their own knowledge but [had] tools ready for them to use.

In this interview Tracy sketched another facet of constructivist teaching that she valued, the idea that learners should construct their own knowledge independently of the authoritative views of the teacher. A teacher's role in such a classroom is to provide a rich environment replete with tools and materials that students can draw on in their individual constructions of knowledge. In such a classroom the teacher, texts, and curriculum no longer occupy the center of the classroom. Rather, each child develops a unique focus and draws on all classroom resources in order to pursue that focus. The center of the classroom is thus different for each student and shifts along with the child's unfolding interests and constructions.

We found that Tracy's efforts to decenter her classroom mirrored her efforts to include integrations in her teaching; that is, her idealized notion of decentering was compromised by both the immediate and surrounding contexts of her teaching. We next trace the devolution of this aspect of her notion of constructivism as she moved out of her university program and into the environment of Lakewood Elementary. The data showed a continued value on physically decentering the classroom through the use of such arrangements as reading and writing centers and various devices to provide students opportunities for activity. Although she maintained an emphasis on physical activity, she moved further from the university ideal of allowing students to construct their own knowledge. That is, although her class had the physical appearance of being decentered, the content of the instruction did not provide for the kind of social decentering of authority that she articulated in interviews as being essential to a constructivist pedagogy.

Prior to student teaching, Tracy contrasted the classrooms of her childhood with the ideal way in which she would set up a classroom: "[When I was in school] each desk was in a row. . . . I have a variety of different ways that I would like to have my classroom—maybe in a circle. Not necessarily have any one as the important person in the room." The arrangement of the seats in a circle illustrates what we call the physical decentering of the classroom. Al-

though Tracy never used the term decentering, her description of constructivist classrooms consistently referred to alternatives to traditional organizations that kept students in their seats with their attention focused on the teacher and prescribed curriculum. Instead, she described arrangements that enabled greater activity and multiple directions for students to move in. Later in the interview she described a teacher in whose class she spent an extended field experience: "She was like, 'I'm very traditional and this is how I teach my classroom. However, this is your classroom now. You can do whatever you want to, you know.' And she had the rows of desks or whatever, and I totally just said, 'Ah, I can't have this,' so I changed the desks."

As this comment reveals, Tracy's priorities included altering the traditional arrangement and changing the spatial configuration of the classroom and thus the focus of students' attention. By making these changes, Tracy could reduce the possibility of becoming the kind of teacher that she herself had found tedious. Teachers who "just sat there and rambled on and on" did not hold up well in Tracy's eyes. In profiling a bad teacher, Tracy described someone who "sat there and they'd have you sit in a desk and you couldn't move. You had to sit there and look at a book and, you know, do workbooks or worksheets." Tracy identified herself as "a very active child," and her need to get up and move around affected how she viewed teachers.

Thus far we have described what we call the physical decentering of the classroom, the effort to allow students multiple focuses of attention through the classroom's spatial arrangement. While still taking course work Tracy also referred to the ways in which this physical decentering worked in service of social decentering, that is, investing authority in all classroom participants rather than only in teachers, texts, and curricula. She described her own experiences as a student whose teachers assumed an authoritative stance toward knowledge:

> I guess I put my teachers as, you know, they know everything.... They know everything. I can go ask them a question and they'll give me the answer. They know everything. And that's I how felt whenever I was growing up, and I want them to know that I don't know everything. And they might know something that I don't know. Or you can even play off like even if you do know something that you don't know it and have them, well I don't know, "Why don't you go research that for me?" You know, "Tell me something about it next week or tomorrow or something." And have them get involved in their own work even if you know the answer. And that's what I learned. I learned that you shouldn't always give the students the answer. I don't even think you should give them the answer. Just go "Well, what do you think?" And if they don't get it, you know, what you consider the right answer, you can kind of lead them back but not necessarily give them the answer.

Tracy's experiences with authoritative teachers led her to assume a nonauthoritative stance as a student: The teacher's authoritative stance and classroom structure made this self-described active child passive, contributing little to the construction of knowledge that she later learned to value. Prior to student teaching, she declared a commitment to decentering her classroom in order to encourage students' curiosity and knowledge construction.

Some of Tracy's field experiences enabled her to view such decentered classrooms in action. In one "wonderful" classroom—a laboratory kindergarten affiliated with the university—the room was set up with centers, books were everywhere, and the children responded immediately to the teacher's requests:

> But, I mean, they were just doing everything. She had centers everywhere, and I'd sit there and watch this whole room, and we'd read them books or whatever and they'd switch centers.... The children could have, you know, it was their room. It wasn't the teacher's room. I mean their stuff, all their papers and ev-

erything were all over the wall, and they got to pick where they put it. So they could put it on the chalk board if they wanted, so she never used the chalk board. . . . They were just always going, always learning something. . . . They had their lights come on.

Sarah Jackson's second-grade classroom during Tracy's student teaching fit well physically with what Tracy envisioned for her future classroom. A couch for independent reading was tucked away in the corner, with bookshelves providing selections to choose from. During one observation a giant mushroom was set up near the reading area where the students could practice the class reader's theater play, *The Mushroom.* Children's desks were arranged in groups of four, and there were several centers throughout the room: a bathtub, a computer, a masterpiece theater, and two horseshoe-shaped tables filled with scissors, glue, and markers.

Following the second set of observations during her student teaching, Tracy talked about the ways in which she and Sarah used the classroom arrangement for their teaching.

Researcher: Is the format that you use—I mean meeting in the corner and you reading to them and them asking questions or answering your questions or whatever and then going back and doing some assignments—Is that a typical format for them? I mean, are they used to doing that kind of thing?

Tracy: Yeah. Sometimes we don't go back by the couch. We go up in the front and they use the chalkboard. We just move them around.

Researcher: But they're used to doing like whole-class things and then going back to their groups?

Tracy: Yes. A lot of times we have also been doing—we've been trying to get them on schedules. Like we'll put up on the board "Things to Do." And then during the day they have to do their DEARs [Drop Everything and Read], and after they're done with that they have to—like they read in that book. Like read page blah, blah, blah and answer the questions at the end. And so they also do their own independent work. And then we have purple folders, which is their individualized reading. They're all in different books. So they're all answering different questions. And so they'll come—like one of the students had [inaudible] folder and I want to leave with whatever I can pull out and they can read to me and we can discuss, you know, kind of have a conference about what they're reading. So that's another thing that we do. A lot of times we do have some group activities. We have some individual—it just depends on the day. We don't always do group work.

Researcher: And they were used to whatever the routines are? I mean, they know how to move from the whole class back to their group?

Tracy: Right. Yeah. They are real used to that. . . .

Researcher: Well, if you could change something, if you could teach this lesson again, what would you do differently?

Tracy: I don't know. I'd probably—well, I'd ask more questions. Probe a little more. Try to get higher-level questions. That's probably what I'd do. . . .

Researcher: [Would] you use this format yourself or would you change it if this were your own class?

Tracy: I would probably use this format. I have seen it all semester and it works wonderfully. We also have the centers. You know, we have the learning centers.

Researcher: I can see that in the room.

Tracy: And they do that in the afternoon—well, not in the afternoon but right before lunch. We have center time. And so they do different activities.

> They have a math center and it's not hard. They're not hard activities at all, but they get to work together because we have activities where they have to—cooperative groups where they have to produce one thing, and that's really hard for them. But it's not like pressure. If they get it done, they get it done, and we're happy. If they don't get it done, then okay. It doesn't really matter, but you all learn that you each have to compromise.

Tracy's description captures the routines that governed life in Sarah's classroom. As noted, the physical decentering of the classroom did not always decenter the class socially in terms of authoritative relationships. Even though students were given choice in what they would read and where they would read it, they were evaluated according to commercially prepared worksheets that did not allow for the kind of constructivist learning idealized in Tracy's preservice course work. In her evaluation of her teaching, Tracy expressed a desire to improve her questioning ability in order to direct discussion, rather than helping students develop their own inquiries. Finally, the evaluation of the cooperative work done in the centers counted less toward the students' grades than the standardized worksheets, to the point where both Sarah and Tracy were not concerned if students did not complete their work.

Her description also suggests that during student teaching, Tracy's notion of decentering, like her sense of integrations, was unevenly realized in her teaching. The complexive thinking that guided her teaching is evident once again: The class had the physical appearance of being decentered and dedicated some activities to those that involved both independent work and cooperative, shared authority; yet the work for the most part was teacher directed and assessed using highly conventional and standardized methods.

At Lakewood Elementary Tracy had less support for enacting the constructivist classroom she had envisioned prior to student teaching. Field notes show the influence of Sarah's classroom organization:

> There are storage shelves on the three sides and countertop. There are four computers in a corner. A movable bulletin board, various buckets of cubes and crayons. Behind Tracy's desk there is a shelf that contains teacher editions of basals and social studies books. There are two large boxes: (1) Celebrate Reading, a learning system for kids who need more reading support; (2) phonics manipulatives kit. There is a poster of the students and their reading buddies.
>
> The desks are grouped in threes, with larger tables together (coloring area?).
>
> There are two areas that have children's books. 2:05—Some students are going to a writing center. There is . . . a list of words. The students copy the words. There is a reading center, a make-a-paper-plate Santa, and cut-and-paste shape center. The students at the reading center are listening to a tape with their book. The writing is to learn spelling words. Tracy walks around the room going from center to center checking on students' progress. When students are done, they can go to work on the computers. There is a word program (*First Letter Fun*). The student chooses the beginning letter of a picture on the screen. The other program is *Primetime Initial Consonants*. The student is shown a letter and must choose between three pictures for the correct answer.

As was the case during student teaching, Tracy physically decentered the class through the use of such devices as flexible seating for group work and reading and writing centers. Students' work in these centers, however, was directed by the prescribed school curriculum and its accompanying texts. This curriculum included an emphasis on phonics in the first grade, although there was no prescribed way of teaching phonics. Throughout her preservice program, field experiences, and student teaching, Tracy had had no experience with first graders and thus no background

in emergent reading and the role of phonics instruction, which she was required to offer at Lakewood. This lack of experience caused her great frustration in deciding how to teach her students. Additionally, she had no textbook to work from and no manipulatives to assist with her teaching. She was left, then, to scavenge for books, settling on a commercial textbook that the school had reviewed yet not adopted. During an interview she said,

> I found these [books] and I thought, "Well, I have to have a spelling test." And for spelling, I mean, they've already done cat, hat, you know, all the easy words, so they know how to spell those. And we did the color words even though they still don't really know how to spell them; we did the number words up to 10, and so stuff around the room that they can see every day. But then I was like: "Okay, I'm running out of words." I did the easy words, c and a. And so, for me, I just looked in there and thought, "This is just from heaven," because I had no idea what first graders were supposed to know.

This excerpt reveals the way in which Tracy, in the absence of any guidance other than the general imperative to teach phonics, relied on a directive approach to teaching. She did say that she "did do some whole language with it. This week I did—last week I did all whole language. I kind of rotate weeks." She went on to say, "I think they really need phonics," yet "I don't know how to teach phonics. . . . Well, with [the university program] . . . I really didn't see any phonics anyway." Her remarks here highlight a fundamental tension she faced when teaching emergent readers using the Lakewood curriculum: At the level of initial decoding that her colleagues charged her with teaching and that she accepted as fundamental, she had neither the background nor the resources to teach letter-sound correspondence through constructivist means. She wished to "make it fun somehow, and right now I really can't make it fun" (because of her inexperience with teaching phonics). She did not, however, say that she aspired to teach phonics in a constructivist manner.

Conclusion

We should state our great admiration for Tracy and our high regard for her as both university student and elementary school teacher. Although we focus on her struggles in this study, we reiterate that she was regarded as one of the best students in a large teacher education program that had the most competitive admissions requirements of any university in its state. She received excellent teaching evaluations from all who reviewed her work in the field. We see her excellence in the classroom as a compelling reason to focus our study on her vicissitudes in understanding and putting into practice the concept of constructivism.

In writing about complexes, pseudoconcepts, and concepts, Vygotsky (1987) refers to the "twisting path that characterizes the actual development" of a person's concepts (p. 156). Tracy's experiences reveal that this path not only twists but changes course if the purpose of the journey changes in midpassage in relation to the motive of new settings. Tracy's preservice program set an ideal destination for her as a teacher: to become a constructivist practitioner, a construct that she never quite grasped due to its inconsistent definition and application. Its meaning dissipated as she moved away from the university's influence and supervision and into a realm in which neither the values nor the vocabulary of constructivism were employed.

By the end of her first year of full-time teaching, Tracy had developed, we argue, a pseudoconcept for the notion of constructivist teaching. To return to Vygotsky's (1987) illustration, a person with a pseudoconcept for fish would label a whale a fish because it appears to be one on the surface. Tracy's classroom had all of the physical appearances of a constructivist classroom with its interdisciplinary instruction and physical decentering; yet the integrations were

not motivated by student choice, and the physical arrangement did not socially decenter classroom authority. A pseudoconcept is characterized by a set of internal contradictions that are manifested in Tracy's teaching. Chronicling Tracy's journey from preservice to in-service teaching illustrates that "it is in the passage to the definition that the mystery creeps in.... What we have to start with is not a definition but the mere ability to recognize instances of correct performances.... What we have at the end is the codification in a definition of what we know" (Hare, 1992, p. 213). At this juncture in Tracy's passage toward concept development, she was able to identify instances of correct performances, frequently critiquing teachers from her past along the traditional-constructivist continuum. Her conception was still mysterious at the point in the journey where the research ended. During student teaching, Imelda critiqued her performance to the researcher but not to Tracy, leaving Tracy without university support for further understanding the formal concept of constructivist teaching.

There was therefore no theoretical reinforcement of the concept once she was away from the formal learning environment of the university, a distal problem that only increased when she moved to Lakewood and through new challenges—for example, the imperative to teach phonics—struggled with applying a constructivist pedagogy. Constructivism was not reinforced in the schools, at least in terms of university language. And so Tracy was left to make whatever connections were available, for example, that whole language is equivalent to constructivism. Without a conception of constructivism to work from, a pseudoconcept best served her situation: She maintained a desire for a constructivist-looking classroom—one that was physically decentered—that masked a teacher- and text-centered curriculum. The problem was not that the school's curriculum overpowered the philosophy but that the philosophy was not well enough conceptualized to broker the curriculum in constructivist ways. Thus the decentered appearance, which the settings of the schools allowed, remained; yet Tracy did not socially decenter the classroom, which the settings discouraged.

It is well documented that teachers often abandon university principles and adopt those of the schools within a few years of entering the profession. Different researchers have proposed different reasons for this phenomenon: Education course work is too theoretical (e.g., Fagan & Laine, 1980); the social environment of schools promotes an ethic geared toward content coverage and control, thus overcoming student-centered teaching methods learned in university programs (Borko & Eisenhart, 1992; Ritchie & Wilson, 1993); university professors' instruction is inconsistent with the pedagogy they espouse so that teacher education effects are "washed out" in the schools (e.g., Zeichner & Tabachnik, 1981). Our study of Tracy suggests that an explanation of this phenomenon may come from the nature of concept development itself.

Tracy is a teacher who was predisposed to embrace a constructivist philosophy. Her descriptions of her own schooling reflect her recognition and appreciation for constructivist teaching practices. Although she resented being exposed only to one teaching philosophy at the university, she endorsed its principles and stated a strong desire to implement it in her own practice. She was also an excellent student herself and was conscientious in her efforts to become a constructivist teacher. She was not, then, among the teachers who reject the values and practices promoted in universities. Nor was the teacher education program, with its 200+ hours of field experiences, too theoretical for practical application. The schools in which she taught were not totally dedicated to content coverage, as evidenced by their inclusion of whole-language practices; what was different was the discourse that surrounded these practices and the overall goals toward which education was directed.

In the absence of formal opportunities for reflection provided by university faculty, the research team's presence provided Tracy with perhaps her greatest opportunity to sort out her understanding of constructivism. The interviews and concept map activity helped "in trying out the proposed account of the use of a word by using the word in accordance with it" (Hare, 1992, p. 216). Through her interviews and discussions with colleagues and supervisors, Tracy's effort to map out her understanding of constructivism was scaffolded by the researcher's questions (Smagorinsky & Coppock, 1994; Swanson-Owens & Newell, 1994). What was missing from the interviews was critical feedback on her responses so that she could see the internal contradictions between her beliefs and her practices. Some have raised ethical questions about a researcher's role when instruction is problematic and the researcher does nothing to help the teacher attend to the questionable practice (Newkirk, 1996; Smagorinsky & O'Donnell-Allen, 1998; Stephens, 2001). In this study, data were collected by three researchers, not all of whom were in a position to recognize or act on these contradictions. As a result, the reflection available through the interviews, while enabling Tracy to discuss the concept as she understood it, did not noticeably change the way in which she employed it.

Conventional explanations for teachers' acclimation to school-based values, then, do not account for Tracy's lack of appropriation of the concept of constructivism. What is seen instead is a twisting path of concept development that had insufficient definition at the outset and whose turns easily led to detours in the setting of the schools. We can understand, then, how Tracy could develop a pseudoconcept of constructivism; we wonder if such an amorphous concept can be taught and learned at all given constructivism's commitment to idiosyncratic constructions of knowledge and meaning. Based on the statements students made during interviews and the concept map activity, we infer that constructivism was presented as a complex during her course work because it had no unifying principles. We assert, then, that the problem for teacher educators is not so much too much theory but too little concept. Teacher educators thus have a dilemma in terms of teaching durable concepts that withstand conflicting demands of school settings, especially when the concepts themselves are contested and the school settings provide the arena for assessment of teaching competence.

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References

Borko, H., & Eisenhart, M. (1992). Learning to teach hard mathematics: Do novice teachers and their instructors give up too easily? *Journal for Research in Mathematics Education*, **23**, 194–222.

Cole, M. (1996). *Cultural psychology: A once and future discipline.* Cambridge, MA: Harvard University Press.

Fagan, E. R., & Laine, C. H. (1980). Two perspectives on undergraduate English teacher preparation. *Research in the Teaching of English*, **14**, 67–72.

Grossman, P. L. (1990). *The making of a teacher: Teacher knowledge and teacher education.* New York: Teachers College Press.

Grossman, P. L., Smagorinsky, P., & Valencia, S. (1999). Appropriating tools for teaching English: A theoretical framework for research on learning to teach. *American Journal of Education,* **108,** 1–29.

Grossman, P. L., Valencia, S. W., & Hamel, F. (1997). Preparing language arts teachers in a time of reform. In J. Flood, S. B. Heath, & D. Lapp (Eds.), *A handbook for research on teaching literacy through the communicative and visual arts* (pp. 407–416). New York: Macmillan.

Hare, R. (1992). Philosophical discoveries. In R. M. Rorty (Ed.), *The linguistic turn: Essays in philosophical method* (pp. 206–218). Chicago: University of Chicago Press.

Hayes, J. R. (1993). Taking criticism seriously. *Research in the Teaching of English,* **27,** 305–315.

Leont'ev, A. N. (1981). *Problems of the development of mind.* Moscow: Progress.

Luria, A. R. (1976). *Cognitive development: Its cultural and social foundations.* Cambridge, MA: Harvard University Press.

Newell, G. E., Gingrich, R. S., & Beumer-Johnson, A. (2001). Considering the contexts for appropriating theoretical and practical tools for teaching middle and secondary English. *Research in the Teaching of English,* **35,** 302–343.

Newkirk, T. (1996). Seduction and betrayal in qualitative research. In P. Mortensen & G. E. Kirsch, *Ethics and representation in qualitative studies of literacy* (pp. 3–16). Urbana, IL: National Council of Teachers of English.

Newman, D., Griffin, P., & Cole, M. (1989). *The construction zone: Working for cognitive change in school.* New York: Cambridge University Press.

Phillips, D. C. (1995). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher,* **24**(7), 5–12.

Ritchie, J., & Wilson, D. (1993). Dual apprenticeships: Subverting and supporting critical teaching. *English Education,* **25**(2), 67–83.

Smagorinsky, P. (1995). The social construction of data: Methodological problems of investigating learning in the zone of proximal development. *Review of Educational Research,* **65,** 191–212.

Smagorinsky, P., & Coppock, J. (1994). Cultural tools and the classroom context: An exploration of an alternative response to literature. *Written Communication,* **11,** 283–310.

Smagorinsky, P., & O'Donnell-Allen, C. (1998). Reading as mediated and mediating action: Composing meaning for literature through multimedia interpretive texts. *Reading Research Quarterly,* **33,** 198–226.

Stephens, D. (2001). Of magic doors there is this. . . . *Research in the Teaching of English,* **35,** 292–301.

Swanson-Owens, D., & Newell, G. E. (1994). Using intervention protocols to study the effects of instructional scaffolding on writing and learning. In P. Smagorinsky (Ed.), *Speaking about writing: Reflections on research methodology* (pp. 141–162). Thousand Oaks, CA: Sage.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1987). Thinking and speech. In L. S. Vygotsky, *Collected works* (Vol. **1,** pp. 39–285) (R. Rieber & A. Carton, Eds.; N. Minick, Trans.). New York: Plenum.

Wertsch, J. V. (1981). The concept of activity in Soviet psychology: An introduction. In J. V. Wertsch (Ed. & Trans.), *The concept of activity in Soviet psychology* (pp. 3–36). Armonk, NY: Sharpe.

Wertsch, J. V. (1985). *Vygotsky and the social formation of mind.* Cambridge, MA: Harvard University Press.

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action.* Cambridge, MA: Harvard University Press.

Wideen, M., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research,* **68,** 130–178.

Zeichner, K. M., & Tabachnik, B. R. (1981). Are the effects of teacher education "washed out" by school experience? *Journal of Teacher Education,* **32**(3), 7–11.