

Developing Early Field Experiences in a Blended Teacher Education Program: From Policy to Practice

By Andrea Maxie

Improving the quality of teacher preparation and teacher learning is a centerpiece of educational reform in California. In the latter 1990s and into the twenty-first century, the effort to build a learning-to-teach system supported by a coherent infrastructure that unites policy and practice (Darling-Hammond & McLaughlin, 1999) has resulted in California's most recent teacher credentialing legislation, Senate Bill 2042 (SB 2042). Informed by the policy recommendations of the Senate Bill 1422 Advisory Panel to the California Commission on Teacher Credentialing (CCTC, 1997a), SB 2042 represents the coalescence of key activities in the state's reform of teacher preparation. Chief among these are: the development of standards for teaching (CCTC, 1997b); the development of standards for teacher preparation; the crafting of a teaching performance assessment for pre-service candidates; and, the building of a flexible teaching credential architecture (CCTC, 1997a; SB 2042,

1998). This architecture is intended to broaden access to teacher preparation by creating multiple pathways into teaching and multiple options for teacher preparation. Among the pre-service teacher preparation options is the blended teacher preparation program.

The blended option provides access to teacher preparation for those who decide to teach early in the

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college years (CCTC, 1997a). At the heart of this teacher preparation option is a curriculum of teacher education that stresses the integration of subject matter preparation and professional studies, the introduction of the *California Standards for the Teaching Profession* (CSTP), and the provision of intensive field experience early in the undergraduate years (CCTC, 1997b; CCTC, 1998). It is this latter component and its relationship with other key features of blended programs that is the focus of this article. The article presents a case of the development of an early field experience curriculum in a blended teacher preparation program. It probes the developmental nature of learning to teach during early field experience and what this means for the introduction of the professional knowledge base and its integration with subject matter preparation.

Field Experience in Teacher Preparation

Field experience persists as an integral component of the curriculum of pre-service teacher preparation (Darling-Hammond & Cobb, 1996; McIntyre, Byrd, & Foxx, 1996). Though highly regarded in the education of teachers, field experience has a controversial history, with respect to its impact on teacher learning (Zeichner, 1992). In the 1970s, research on field experience exposed a disconnection between teacher preparation and the practice of teaching. Studies reported negative outcomes of field experience, including changes in student teachers' attitudes (Mahan & Lacefield, 1978) and the development of bureaucratic orientations after student teaching (Hoy, 1977). By the end of the 1970s, these outcomes of socialization into teaching during early field experience gave impetus to a major effort to restructure field experiences in teacher education. The extension of time in the field (Denemark & Nutter, 1979); the modification of supervision (Griffin, 1983); and, the establishment of partnerships and professional development schools, linking university teacher training programs and public schools, represented efforts to improve field experiences in pre-service teacher preparation (McIntyre, Byrd, & Foxx, 1996).

The restructuring of the field experience to consider teacher thinking and teacher learning is a major paradigmatic shift occurring in the 1980s (Zeichner, 1992). It is a shift that recognizes teacher development and field-based experience as complex processes. As a process, field experience is characterized by a focus on reflection and inquiry into teaching; an acknowledgement of the complexity of the work of teaching and life in schools; and an emphasis on the integration of the study and practice of teaching through collaborations between universities and schools (Knowles & Cole, 1996).

Early Field Experience in a Blended Teacher Preparation Program

In the fall of 1999, faculty in the College of Natural and Social Science and the Charter College of Education at California State University, Los Angeles, began a

year-long collaboration to build the Better Educated Science Teachers project (BEST). BEST is an undergraduate-level teacher education program, which seeks to integrate science and pedagogy in the preparation of secondary-level teachers. As faculty and high school science teachers undertook the initial curriculum integration process, the role of field experience in the preparation of early deciders became a key question. We needed to know more about early deciders. We needed to better understand how to explore the professional knowledge base with early deciders. Finally, we wanted a learning experience that would inform the process of integrating subject matter preparation and professional studies during field experience. We structured an early field experience that would share the complexities of teaching and learning science in urban high schools, and that would simultaneously allow us to study the process of learning to teach during an early field experience in a blended teacher education program.

Conceptual Framework and Course Structure

Exploring Science in the Classroom, School, and Community is a ten-week intensive early field experience in teaching for freshmen-level students enrolled in BEST. The course provides prospective teachers with the opportunity to experience science content and pedagogy in practice, and to examine their own meanings for teaching and learning science in urban high schools. As prospective teachers spend time in the field, they observe and participate in classrooms, and systematically reflect upon their experiences. The emphasis on reflective practice is supported by a modified conceptual framework for field experience curriculum developed by Knowles & Cole (1996).

The framework recognizes the developmental nature of learning to teach and considers the field experience as an opportunity for novice teachers to reflect on self, contexts, relationships with students, and the work of teaching. In the present early field experience, self refers to introspection into teaching-related concerns and a focus on personal change with respect to teaching science. Reflections on self are captured in autobiographies, journals, and in lesson analyses. Contexts include the classroom, school, and community and offer the prospective teacher an opportunity to reflect on the roles and responsibilities of teachers, the structure of the school, and the relationship of the school to the community, particularly with respect to the teaching and learning of science. Participants reflect on contexts in weekly journals. As participants work with students, they think about what they are learning about students from student work and from interactions with students. They examine how students come to understand science concepts. They become familiar with cultures, languages and styles of learning that students bring to the classroom. This is the domain of relationships. Finally, participants reflect on specific teacher knowledge and activities, including how teachers craft successful environments for student learning; how teachers support student learning; and, how teachers plan instruc-

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tion. Each of the domains of the early field experience is guided by question prompts (Appendix A).

While the domains of early field experience provide a framework for organizing teacher learning and describing teacher development during early field experience, a concerns-based theory of teacher development enhances knowledge about the process of learning to teach for early deciders in the pilot early field experience. This theory of teacher development posited by Fuller (1969) and Fuller and Bown (1975) recognizes three stages in the process of learning to teach. The first stage is a pre-teaching phase. Preservice teachers appear to identify with students during this stage and subsequently express few teaching-related concerns. Following the pre-teaching stage is a focus on survival. At this stage, typically represented by the onset of student teaching, beginning teachers' concerns are predominately those of survival and center around questions of classroom management, content knowledge, and being liked by students. As preservice teachers enter early inservice teaching, survival concerns appear to persist, but are compounded with concerns related to the specifics or tasks of the teaching situation. A focus on student learning is characteristic of impact concerns and describes the successful, experienced teacher.

Curriculum Development and Implementation

While a theory of teacher development and a framework which describes the domains of learning to teach during field experience provide structure to a study of the experience, the emerging content of *Exploring Science in the Classroom, School, and Community* is shaped largely by categories of professional knowledge detailed in the *CSTP* (CCTC, 1997b), and by the teaching practices of science teachers at two urban high schools in Los Angeles. In the spring of 2000, five science teachers who served as cooperating teachers for BEST students collaborated with university faculty to craft what is an emerging content for early field experience. At the heart of the curriculum is a look at three professional knowledge categories. These include Engaging and Supporting All Students in Learning, Creating and Maintaining Effective Environments for Student Learning, and Understanding and Organizing Subject Matter for Student Learning (CCTC, 1997b). These categories of professional knowledge are the focus of curriculum development, since they conform to the developing pre-teaching and survival concerns of novice teachers in the literature (Fuller, 1969). Cooperating teachers and university faculty are building the knowledge base with respect to these categories of professional knowledge, by writing case studies that look at science in the classroom. Teachers are writing standards-based science lessons and lesson reflections, and developing curriculum projects that look at the linkage between the subject, the community, and teaching and learning. While high school science teachers and university faculty in science and education are writing curriculum, the curriculum is also informed by the experience of learning to teach shared by early deciders who

pursued the early field experience in spring, 2000. Their experience is the substance of inquiry into early field experience.

Curriculum Inquiry

During the spring of 2000, a cohort of five freshmen-level students enrolled in BEST spent a minimum of six hours per week over ten weeks at two urban high schools in Los Angeles. Schools were selected because of the exemplary science teaching of five cooperating teachers, the cultural and linguistic diversity of the student population, and the history of successful partnerships between the school and university in the preparation of teachers for urban high schools. Cooperating teachers brought expertise in biology, chemistry, and environmental science. Student participants and cooperating teachers were matched on the basis of students' expressed interests in science. While cooperating teachers served as mentors, they functioned as a team allowing student participants to rotate among their classes and experience a variety of teaching styles and classroom contexts.

In addition to observing classrooms and schools, and participating in instructional activities, students participated in five course sessions. These sessions, which aligned with domains of the conceptual framework and categories of the *CSTP* (CCTC, 1997b) were opportunities to reflect on the learning experience, introduce new concepts, and plan for future work. University faculty in science and education, and cooperating teachers, collaborated on the content and delivery of these five course meetings, which included: (1) Learning to Look in Science Classrooms; (2) Engaging and Supporting Students in Learning Science; (3) Thinking About Science and Students; (4) Creating an Environment for Science Learning and Teaching; and (5) Investigating Science and the Community. Student participants shared their stories of learning to teach. They chronicled their experience in four samples of work. These included autobiographies written in the first and tenth weeks of the course, journals which recorded weekly reflections on the field experience, written lesson plans and lesson reflections, and a written reflection on science and community. These samples of student work, and ongoing conversations with students are the data sources used to inquire into the curriculum. What follows are two illustrative cases of student learning during the field experience.

Trina

Trina is an eighteen—soon to be nineteen-year-old—freshman enrolled in the pilot undergraduate blended program. She is from Oakland, California, and has attended private girls' schools throughout her K-12 school experience. By her own admission, science is an interest she has as a young child. It increases in interest as she experiences science in schools:

Throughout my life, science was an interest. For a while I would create scientific

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solutions, then I moved on to watching butterflies and silk worms go through their growing process. In elementary school, I remember my science class having all types of interesting things. For a while my teacher had crickets, worms, and other animals and I loved it. I, however, was not fond of the crickets because they scared me so much, and to this day I am still scared of them.

Later on in high school, is where science had the most importance to me. In my tenth grade year, I was able to dissect a fetal pig. After all of the science classes I have had, dissecting the pig was the most important thing that I have done. I felt even more important because my dissecting team designated me as the primary dissector because I loved doing it so much.

While early school experiences are a source of influence on Trina's interest in science, she is mostly encouraged to become a science teacher by her older sister, an elementary school teacher in Oakland.

Teaching Concerns

In the first week of the course Trina expresses the following concerns:

The one thing that is constantly on my mind is how I can make science interesting for my students. . . I love the idea of teaching, but I am scared about how students will react to me because of my age. I am also worried about how many classes I will have to take throughout my college years to graduate from this program.

The initial weeks of the field experience elucidate Trina's concern about her image as a teacher. She worries that age does not accord her the respect she needs to be perceived as a teacher. She feels that although she is not far from being a high school student, she is not a high school student. This distinction between high school and college is important to her. As she participates in Ms. A's class and Mr. S's class, she is not officially introduced to students. This exacerbates her concern about her teaching image.

That made it rather hard for me to be assertive with the students because to them I was a stranger. They even thought that I was a new student. That made me uncomfortable because I did not want to intrude on the student's space. I need for them to respect me as an adult and know that I am not just another one of the many students at . . . [high school].

Being appropriately introduced to the high school students by Ms. W, the chemistry teacher, marks a change in Trina's relationship with students and perceived teaching image:

On Wednesdays, I would visit Ms. B's class. On Fridays, I would visit Ms. W's class. When I first met Ms. W, all I could see was her big smile and that really made me feel good. Minutes after her class started she introduced me to her students as Ms. Stephens and I really loved it. She told them that I was her new student teacher and that I really knew my stuff. In all honesty, I was fine with that even though a little part of me was hoping that the students would not ask me too many questions about

chemistry. She also let her students know from the start to respect me as another teacher and that made me feel good. The most important thing to me was that she introduced me to her class as Ms. Stephens right way and I appreciated that because her students were not left wondering who the strange individual in their class was. It also made me feel free to walk around the class and ask the students if they needed help because as far as they were concerned I was another teacher. This made me feel like the adult that I truly am.

Professional Knowledge

Trina's concern for making science interesting and fun for students seems connected to what she is learning with respect to professional knowledge and students. In the initial weeks of the field experience she focuses on students and how to engage them in learning:

My observations have enabled me to see that some students are going to do their work and others are not. I am also learning that regardless of how hard the teacher tries there are going to be students that are just not fond of science. I also see that the teacher really has to know their subject and what they plan on doing with the students from day to day.

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Teachers create an environment for learning science by putting things on their walls that relate to science and the students. They also make the class a learning environment by talking to the students and helping the students to see themselves through science. The link between the student and the subject is essential in creating an environment conducive to learning.

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In Mr. S's class, I am learning that there are different levels of students. For example, in the regular classes that everyone is required to take, the students do not pay as much attention and they do not seem to understand their assignments. Coming from an all girls private high school I have never seen students being as disruptive so needless to say, it was very shocking. However, when I observe his honors AP courses, I feel like I am in a completely different school. The students care and pay more attention and that makes a difference in how well they understand their assignments.

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Over the past two weeks, I have been taking in information about the difference between students and how they react to their teachers and it has been making it easier for me to see myself as a teacher. I have also learned that students enjoy doing hands on work and that is great because I know that when I become a teacher I will have an idea of how to make the subject I teach interesting.

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I have learned that after a teacher explains an assignment the students act as if they understand exactly what they are supposed to do. However, the second they are

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released to do their work they seem to get confused and no longer know what their assignment asks of them. An idea that I came up with to amend this was after explaining an assignment, the teacher should ask a few of the students in the class to say what they think they are supposed to do. In doing that, the teacher is able to assess the student's understanding of the assignment and it also helps the teacher see what he or she needs to clarify.

Teaching a Lesson

Teachers have many ways in which they work the curriculum into their course, but simply presenting this information to the students is not enough. The teachers have to make sure that the students are learning the curriculum and the way they do this is through written work and testing. In order to make sure that students know how to collect, analyze, and report data, science teachers usually tend to make the students keep lab notebooks. In these notebooks, the students write out the lab objective, the materials needed, the procedure, the collected data, and then their analysis. They take their data and have to answer questions which, for the most part, link to everyday life. In the analysis the students are asked to think about what they have learned and how it connects with their class subject.

Trina believes that having knowledge of the routine for student work means that putting her lesson together will not be hard. Working with Ms. B's fourth period Integrated Science class, she does the following lesson:

I've decided to do a lesson that focuses on helping the students see what additional things they take in when they eat. They are being asked to pick three minerals that they want to focus on and after doing so they are to find food labels of foods that have their specific minerals in them. The students are then supposed to figure out what half of the recommended daily intake (RDI) of their minerals are and from that decide how many servings of each food item they would have to have for the RDI. In order to help the students understand exactly what they are supposed to do, I have worked out an example that I am prepared to show the class. I also plan on putting an example data table on the board so that they know how the one that they put in their lab notebooks should look and what should go where. However, putting lessons together usually is not the problem, the problem is getting your students interested in the lesson.

In an attempt to make the lesson an interesting one, I decided to break it down into a two-part lesson. The first part will focus on the students inserting data into their lab notebooks; the second half of the lesson will be a digestion lab (party). I figured that the party would be an incentive for them to do their class work and the homework that I plan on assigning. The reason being that the only way they can participate in the digestion lab is if they do both assignments.

Reflecting on the Lesson

This lesson helps the students learn because it brings everything that they already know together to make it easier for them to comprehend a new idea. In addition, most people do not look at the food labels when they buy things. Instead we just get what we need to get and go on with the rest of the day's activities. In this lesson, however,

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the students are forced to take note of exactly what they are consuming when they eat the foods their parents buy on a regular basis.

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The activity engaged student interest because they know that in the end they would be having a party. In addition, the lesson in a way forced the students to think about what they were eating more because a lot of them did not realize how much of the recommended daily intake they were getting. I know that I was surprised when I realized how much I was supposed to have daily because I know that I was nowhere near consuming the proper amount of minerals.

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Overall, the lesson was not as successful as I hoped it to be. I thought that the students would complete all of their work and have this perfectly organized digestion lab prepared when I went back for the second part of the lesson. However, some students did not complete the work, and others did not bring food to the digestion lab so there was not enough for everyone. In addition to that, the main reason why the digestion lab was included was to help the students learn how to put together a well-balanced meal, but to the students a well-balanced meal consisted of chips, soda, and cake.

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Due to the fact that some of my students did not finish their work and others did not bring food I have decided that if I do this activity again, things will be different. I never realized how much teachers learn from their students and the work that their students do. Prior to this experience I thought that the only people that learned something in class were the students. In addition, I used to wonder why teaching seems to get easier as the years go by, but I now know that the reason why that happens is because the teachers learn from their previous mistakes. I learned that some of the students did not quite understand what they were supposed to be doing because they did not finish their work and others did not finish their work correctly. To amend that I have decided that in the future I will at random ask some students what their assignment is before I let them get started. In addition, after seeing the plates they made, I have decided that I will make a sample of projects so that they can see the finished project before they get started and know exactly what goes where.

Lauren

Lauren is nineteen and a freshman at California State University, Los Angeles. She is from Baldwin Park and is a product of public schools. When she speaks of wanting to go into teaching, she says:

The only experience I had in learning science was in school and it was not a good one. All the science teachers I had in high school were in one way or another bad. And that is what encouraged me to be a science teacher. I want to make science a fun experience for students, unlike the one I had. As a science teacher I want to get students

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interested in science. I want them to like science as much as I do. I don't want students to be intimidated by science, and I think that's what my science teachers wanted to do. They wanted us to know that in science you have to work hard but they forgot to teach us how much fun it can be and that's what I want to teach my students.

Lauren wants to make science fun, because it was not fun in school. She implicitly defines a good teacher as one who gets students interested in science and wants them to like the subject. A good teacher makes science fun.

Teaching Concerns

Making science fun is incorporated into Lauren's statement about her teaching concerns in the initial weeks:

I'm worried that I will become a horrible teacher and that I will not make it fun for students like I want to. I just hope I become a better teacher than the ones I had.

By the tenth week of the early field experience, she expresses the following concern:

What concerns me now about being a teacher is that schools do not have enough money. This deprives the students, because without proper equipment students are not able to perform labs that will help them learn, and hands on in science is also a big part of enjoyment.

Additional concerns emerge as Lauren spends time in the classrooms of cooperating teachers. These concerns revolve around her image as a teacher, her content adequacy, and the importance of being able to help students.

Week #3—Today I am going to conduct a mini lesson. I am very nervous. I don't know how the students will react towards me. I've been in their class for two weeks, so they know who I am but I haven't been the one telling them what to do. I really hope everything goes well.

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I got to [the school] half an hour before class started to make sure everything was going as planned. We placed microscopes and slides at each station. We also had pond water at one of the stations; the students would use this to make wet mounts. When class started Ms. L finished giving them notes and then she told them I would conduct a lab with them. The first time I was very nervous. When I was telling the students what they were going to do I forgot the name of the type of slide they were going to prepare. One of the students reminded me of the name and I thanked her for her help. I did not feel bad admitting I needed help. After I told them what to do they began to do their experiment and I walked around helping them and making sure they knew what they were doing. I gave the lesson to different classes. After the first class I was able to explain it to them more clearly.. I felt more confident than I did with the first class. When I was walking around, I noticed that there was a difference in the amount of effort that students were putting into the lab. I helped the students that needed help

and I tried to get the students that were not doing a good job to do a better one. This was not easy. I did not feel confident enough to keep persisting they do it.

Here, Lauren questions her perceived image as a credible authority with students. This occurs again in Week 6:

Today, I was in three different classrooms. Mr. S teaches chemistry. When he introduced me to the class he told them I would be able to help them if they needed any help. I walked around the class and helped a couple of students. A few students came to me when they needed help and that made me feel like a teacher. It seemed like some students did not trust me because when I saw them having trouble I offered to help them but they would say they did not need help. Later I saw them asking Mr. S for help. They probably did not trust me because it was the first time they had seen me.

Interactions with Teachers

The experience of spending time with different teachers, different classes, and different science subjects seems meaningful. Lauren learns about teaching styles and about students:

I went next door to Ms. W's class. She asked me if I knew any chemistry and I told her what I have taken. She asked me if I would be able to help the students with their work. I asked what they were doing. I had done that before. When she introduced me to the class she told them I would be able to answer any of their questions. This felt good. Being in her class was a completely different experience; she and Ms. L have completely different methods of teaching. Ms. W interacts more with the students, and she constantly has them doing something different. She had me walking around the classroom grading problems that she had given the students. She constantly asked them to solve problems, and if they had the correct answer she would give them a sticker. This may not sound like something you may do in high school but the students like getting the stickers. They ask for them when they have the correct answer.

Relationships with Students

When I was in Ms. W's class today, she was supposed to give the students a quiz today but when she tried to type the quiz she could not open the program because her computer was not working properly. This was also her makeup week and she could not print that work either. When I got there she was already frustrated trying to get the computer to work, so I offered to try to print some of the work. After a while I was able to get them. It felt good being able to help her. Later she asked me if I could help a new student that was having trouble understanding the material. At first I wasn't sure if I would be able to explain to him but I tried. I first asked him what he knew, and what he did not understand. I started by explaining to him what he didn't understand and then we tried working on the problems Ms. W had given him. We did a couple of problems together and then he did some on his own. He was not able to do them perfectly but he understood them better, and that made me feel good.

Lesson Reflection

There were a few problems with the lesson, but overall the lesson was successful.

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Most of the students were able to do what they were supposed to do, but a couple of them were having trouble with the work. They did not want to be helped. I tried helping them. I told them what they were supposed to do, but they did not want the help. They would just ignore the advice I gave them. I did not feel confident enough to keep insisting that they did their work, so I continued to help other students.

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After viewing the students' work I noticed that most students understood what they were supposed to do. There were also students that did not completely understand what they were to do; their work was incomplete or inaccurate. Next time I will walk around when the students are finishing their work to make sure it is correct. If their work is wrong I will help them correct it before they turn it in.

Learning from Early Deciders

The domains of the conceptual framework—self, contexts, relationships, and teaching—serve as the broad categories in which to organize students' written reflections and conversations over the ten weeks of field experience. Within each domain are themes that emerge for the cohort of students, and which are illustrated by the cases of learning to teach.

Within the domain of self, we learn through autobiographies about the early professional socialization of early deciders with respect to science and teaching science. Case studies and conversations reveal that decisions to teach are primarily rooted in school experiences, although these are not always deemed successful experiences. In Lauren's case, for example, the decision to teach is based on a desire to engage student interest in science, a factor of science teaching she does not encounter in her urban high school experience. It is the experience of being a student that informs knowledge about the work of teaching.

For early deciders, three themes about teaching emerge prior to involvement in the early field experience. These themes are linked to teachers' professional knowledge and center on questions of student engagement in learning, creating effective learning environments, supporting students in the learning process, and knowing the subject. Themes represent what early deciders believe to be true about teaching, from their years of observing teachers. It is interesting to note that early deciders focus largely on making the subject interesting for students. This is both a category of professional knowledge they think is important for successful teaching and an area of concern expressed throughout the field experience (Table 1).

The initial concerns of early deciders are largely pre-teaching and survival concerns related to being liked and respected by students (Fuller, 1969). Features of these concerns include being perceived by high school students as a credible authority, and establishing a distinction between being a high school student and being a college student.

Table 1

<i>Prior Knowledge About Teaching</i>	<i>Inquiry into Teaching</i>
Prompt: What do you know about teaching?	Prompt: What do you need to know about teaching?
u takes patience	u how to keep the students in line without getting upset with them
u need to relate to students	u to learn how to create an interesting lesson plan
u should have a lot of knowledge of subject	u what determines which subjects you teach?
u you have to make it interesting for students	u how to be their friend but also help them remember that I am a teacher
u it's not going to be easy all the time	u which school would best suit me
u you should create a good learning environment	u how can you get extra funding for supplies or field trips?
u involves a lot of outside work	u what is the difference in education to be a college professor?
u make sure every student understands	u how much do they pay?

By the midpoint of the early field experience, concerns about teaching image are tied to differences in classroom contexts. Opportunities to observe and participate in the five classrooms highlight ways in which cooperating teachers appear to share the role of teacher with the prospective teacher. Both Trina and Lauren, for example, express that they feel good in classrooms where they are introduced to students as a student teacher, and where they are encouraged by the cooperating teacher to help students and the teacher. Being identified as a teacher allows Trina to feel that she is no longer a high school student, a fact that is important to her at this time in learning to teach.

In addition to observing how cooperating teachers share the role of teacher, student participants become sensitive to the classroom environment, particularly with respect to perceived differences in student enthusiasm for learning. As they observe and participate in science classes labeled as gifted magnet or non-gifted magnet, they perceive distinctions in the classroom atmosphere. Students in gifted magnet science courses or advanced placement science courses are perceived to show greater attention and to be involved in more problem solving, while students in the non-magnet science classes show less enthusiasm for learning science. Once again, early deciders are concerned about making the subject fun for students. A focus on problem solving is perceived as a fun classroom.

Time spent with students in varied classroom contexts elucidates student participants' perceptions of their relationships with students. By the midpoint of the early field experience, students express less concern about their teaching image as perceived by high school students and more concern about helping students and getting them interested in learning. Participants feel successful in their ability to help students, when high school students ask for help, and when early deciders have adequate subject matter knowledge. Participants feel challenged in building

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relationships with students where there is no perceived interest in learning, and a perceived difficulty in getting to know students (Table 2).

Table 2
Midpoint Teaching Concerns

<i>Teaching Successes</i>	<i>Teaching Challenges</i>
u observing the students	u intruding in student space
u students asking for help	u getting some students interested
u help in planning classes	u talking in front of the class
u being able to work with students	u experience is different from my high school
u observing the teachers	u remembering students' names
u being introduced as a student teacher	u getting to know the students

Teaching science concepts and skills to high school students is a domain of the early field experience that allows student participants to reflect on instruction and student learning. Reflections reveal that, throughout the early field experience, student participants remain intensely focused on making the subject fun and interesting for students. This focus underlies what emerges as a natural or intuitive ability to integrate subject matter and pedagogy. Science is never considered apart from how to connect it to students. In Trina's effort to teach students about minerals contained within foods, she is prompted first by what will be interesting for students. She then moves to engaging students in the lesson, by asking them to choose which minerals they want to study. This is followed by a focus on specific concepts and laboratory work as students work toward a culminating activity, the digestion lab or party. Although she learns that she has made some inaccurate assumptions about students' prior knowledge and how they understand lesson concepts and activities, Trina comfortably ties subject matter to instructional strategies aimed at engaging student interest and supporting student learning.

On balance, early deciders in this early field experience course reveal strong pre-teaching and survival concerns related to self with a persistent focus on building relationships with high school students, and making the subject of science fun for students. As they participate in instruction, early deciders show an inclination toward the integration of subject matter and pedagogy centered on engaging student interest in learning.

Conclusion

Teacher development is a theme infused in California's teacher credentialing legislation (SB 2042); in the professional knowledge categories delineated in the *California Standards for the Teaching Profession* (CCTC, 1997); and in the current *Interim Standards of Quality and Effectiveness for Blended Programs of Undergraduate Teacher Preparation for Multiple and Single Subject Credentials*

(CCTC, 1998). As a key theme guiding policy that governs the standards and practice of teacher preparation, teacher development is at the heart of a continuum of teacher preparation and the developmental nature of the curriculum of teacher education. In the context of an early field experience in a blended teacher preparation program, teacher development is described by the developing concerns of early deciders and a conceptual framework for field experience that explores self, students, teachers, and the context of teaching (Knowles & Cole, 1996). A pilot early field experience course reveals that early deciders may be intensely focused on self in relation to students and the work of teaching. Though focused on self-concerns, early deciders demonstrate a strong motivation to make connections between the subject area and students. The motivation to make the subject of science interesting emerges as an important building block in crafting a well-integrated and developmentally appropriate early field experience curriculum for early deciders.

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Appendix A

Framework for Field Experience Curriculum

(Adapted from Knowles & Cole, 1996)

<i>Category</i>	<i>Prompt</i>	<i>Data Source</i>
<i>Self</i>	How was your experience learning science in school, in your family, and in your community?	<i>Autobiography #1</i>
	Can you describe an important science learning episode from your days in school? Why was this important to you?	
	How did you become interested in teaching science?	
	Was someone important to you in your decision to teach science?	
	What do you want to accomplish as a middle or high school science teacher? What are your personal goals? What are your goals for students? What are your goals for science in the classroom?	
	What benefits do you see in learning to be a science teacher at this time in your education?	
	What challenges do you see in learning to be a science teacher at this time in your education?	<i>Autobiography #2</i>
	What concerns you at this time about teaching science in public middle or high schools?	
	How do you think about students now?	
	How do you think about science now?	
<i>Contexts/Teachers</i>	How do you think about yourself as a science teacher?	<i>Journal</i>
	What are important teacher roles and responsibilities?	
	What do teachers need to know about students and how do they gather that information?	
