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Reports of Research and Self-Study

Instruction to Understanding: The Emotional Underpinnings of New Teachers' Professional Development

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Abstract

This study focuses on the professional development of 54 newly certified, preservice teachers who participated in a masters program that incorporated a 15-hour-per-week internship in an urban school. Perceptual and independent data were collected from 10 cohorts who completed the program between 1998 and 2007. Findings suggest that new teachers' knowledge and practices change when rigorous year-long masters programs are situated in schools. The roots of these changes are the connections between cognition and emotion that emerge from intensive, context-rich professional development.

Emotions are not just messy toddlers in a china shop, running around breaking and obscuring delicate cognitive glassware. Instead, they are more like the shelves underlying the glassware; without them cognition has less support. (ImmordinoYang & Damasio, 2007, p. 5)

Monday mornings, before the start of the school day, a cohort of 4 newly certified teacher candidates who have opted to complete their master's degrees by means of a specially designed graduate program, meet as a group to discuss their plans for the week. Each of these preservice teachers, called interns, opted to forego job applications for a year to participate in a graduate program that includes a year-long support group and a 15-hour-per-week teaching commitment in a mentor's classroom. This integration of graduate coursework with simultaneous teaching experiences result in a significantly different approach to the preparation of new teachers. Consider, for example, the following incident described by Jennifer at a Monday meeting early in the fall.

It occurred to me last week when I noticed how S [mentor] would stop, check for understanding, and wait for active listening from everyone, that maybe there was so much confusion when I taught a lesson because I think I just keep on going without enough stopping.

While Jennifer had studied these elements of instruction in her undergraduate program and could identify them in context, it was not until she intuitively compared her own performance to her mentor's that her awareness of their potential impact on student learning was strengthened. Her "aha moment," however, was not solely due to the additional clinical experience afforded by the program. We believe connections, such as the one Jennifer spontaneously made, are more likely to result when professional development programs include on-going opportunities for new teachers to think and talk about the relationship between pedagogical concepts and personal teaching performance with other like-minded peers and professionals in the school (Darling-Hammond, 2000).

The purpose of this article is to describe a year-long master's program that enables initially certified, preservice teachers to gain advanced skill levels before entering the job market as full-time teachers. It is not realistic to expect that undergraduate preparation programs can produce highly qualified teachers upon graduation. Rather, in keeping with the literature linking the impact of high-quality induction programs to teacher development (Cochran-Smith & Zeichner, 2005; Smith & Ingersoll, 2004), we propose that programs designed to build on initial study, integrating graduate coursework with year-long mentored teaching experiences, are significantly more likely to result in greater epistemic growth. Furthermore, it is our belief that the program we will describe leads to skilled performance because it provides the time, opportunity, and support preservice teachers need to examine their teaching skills in light of the theory they are learning, and most importantly, because it builds on strong emotional processes that enhance new teachers' ability to think, learn, and grow. We propose that emotional thinking is a critical, but undervalued, component in teacher decision-making, and that harnessing the power of emotion can produce more reflective practitioners, thus, more highly qualified ones.

Our proposal is based on ten years of qualitative data collected from cohort members who participated in a small grant-funded program. Programs similar to the one we

describe here are not wide-spread: There is relatively little data showing how teachers prepared in this way compare with teachers from more traditional programs (Zeichner & Conklin, 2005). In describing the outcomes of this program, our goal is to generate discussion about the critical role of school-based professional development in harnessing the emotional thinking that we believe leads to greater epistemic growth.

Background

The link between emotional states and the capacity to think and learn has been at the forefront of neuroscience since the 1990s (Fischer, et al., 2007; Goleman, 2006). Researchers believe the neural wiring between the brain's thinking and emotional centers shows that emotions are not just problematic baggage that can interfere with our ability to think logically, but specific neural mechanisms that can support cognition: attention, learning, and decision-making (Ashcroft & Kirk, 2001; Immordino-Yang & Damasio, 2007). Neurobiological studies highlighting relationships between body, emotion, and cognition (Bechara, 2005; Damasio, et al., 2000) suggest that emotions play a critical role in bringing prior knowledge to the forefront to inform real-world decision-making. To this end, emotional processes may be a key component in the transfer of knowledge learned in teacher education courses and fieldwork to novel settings such as the early years of teaching. Some support for the interrelatedness between emotional thinking and the development of teachers' pedagogical knowledge has been suggested by Zembylas (2007).

When intense preservice professional development is situated in schools, the potential for emotional thinking to support teacher cognition may be further enhanced. We know that in professions such as teaching, progression from novice to highly skilled performance is heavily influenced by context (Dall'Alba & Sandberg, 2006). Context provides valuable concrete examples that can be used by teacher educators to coach novices as they attempt to transfer theory to practice. When novices have a stake in the context, enough time and experience within the context to identify problems, and when there is coaching to help them connect theory to practice, meaningful learning is more likely to occur (Korthagen & Kessels, 1999). As we will demonstrate, emotional, context-dependent connections preservice teachers make have enormous repercussions for the way they consolidate the knowledge they use to make decisions, and for the way they ultimately learn to teach.

A School-Based Masters Program

The Collaborative Intern-Masters Program (CIMP) is a subset of a traditional masters program. A group of 4 to 6 graduate students is accepted annually based on competitive applications and available budget. For two semesters and one summer, these newly certified teachers complete graduate courses in education and work as interns in urban classrooms under the auspices of mentor teachers. Their mentors are carefully selected by building administrators using written proposals and past teaching performance evaluations. Grant funds pay interns' graduate tuition in return for their service to urban schools.

Each week begins with the seminar that meets on-site on a rotating basis among the participating schools. The seminar is envisioned as a support group with a structured

agenda. Interns are encouraged to look analytically at their teaching, their classroom, and the theories they are learning, while the group, as a whole, acts as a sounding board.

To help interns frame what actually happens in their classrooms with theories and ideas they bring to the setting, seminar begins with critical incident writing. Interns are asked to identify an event that occurred the previous week, write about it, and present the event to the group in the fashion of a medical model (as described by Hole & McEntee, 1999). The incidents selected might be perceived as positive or negative, puzzling or surprising, and could reflect any aspect of teaching and learning. Why was this event critical? What do we need to know to understand the nature of this incident? What did the intern observe, think, or do, and why? Critical incident topics often result from the interplay between assignments in other graduate courses and interns' experiences in the school setting, and subsequently drive the selection of future seminar readings. The goal is for interns to develop habitual cause-effect thinking (Grant & Gillete, 2006) that will lead them to researchable thesis topics in midyear, and, of course, to the further refinement of their teaching skills.

The smallness of CIMP has facilitated the development of relationships among interns, college faculty, and school-based personnel, making the close collaboration and sharing of ideas the easy give-and-take boundary crossings described by Anagnostopoulous, Smith, and Basmadjian (2007). Principals observe the interns as they would first-year teachers, using the district protocols and procedures. They participate in occasional seminars, meet with mentors, and involve the interns in professional development activities and school committees as they would full-time first-year teachers.

Over the course of the year, interns gradually assume more responsibilities in their classrooms. In this way, induction into the school and community is a kind of protected immersion. As the year draws to a close, the interns design a professional development day for the faculty at each school to share the findings from their masters' research as well as what they have learned about teaching from their days at the school.

Perceptual and Independent Data

Different insights on how interns across the ten cohorts learned, as they balanced graduate study and classroom teaching, were obtained during their internship year through critical incident protocols, weekly journals, and informal interviews. Data were coded using a constant comparative method to develop broad categories (e.g., relationships with students) and to further refine them into subcategories (e.g., understanding students' out-of-school lives or being approachable to students). Informal interviews with individual interns and the cohort, as a whole, were used to uncover similarities, examine differences and similarities within and across categories, and to explore emerging themes. We developed a template of issues that CIMP interns thought about and considered critical, tracing the trajectory of their thinking by tabulating the number of times the category surfaced for individual interns and for the cohort group, as a whole. Data from cohort groups then were compared and combined to develop a hierarchy of issues that surfaced as important to the 54 interns across the 10 cohorts.

At the end of their internship year, interns reviewed their critical incident notebooks and weekly journals and developed a detailed concept map (Meijerm, Zanting, & Verloop, 2002) to trace their thinking across the year. Interns' concept maps were compared to the trajectories we developed for them as a way of confirming or rejecting

our categories. Concept maps were also used to investigate connections between interns' identification and analysis of issues during the early part of the year, and their selection and implementation of masters' research projects in their classrooms later in the year.

Principals' observations of interns at three points during their internship year were collected as independent measures of what interns learned. Principals observed interns at the beginning, middle, and end of the year, and rated them on the same five-point scale used to evaluate full-time teachers: distinguished, proficient, meets professional standards, below professional standards, and unsatisfactory. The three evaluations collected for each intern were compared to the intern's emerging profile of critical issues, and used as the basis for our informal interviews about teaching and learning. In addition to serving as our independent measures of interns' growth over time on the teaching skills identified by the district, principals' observations were used by interns as conduits to reflect on their effectiveness. Table 1 lists the teaching behaviors observed and reported on by the principals.

Table 1. District Protocol for Teacher Observation

I. Pedagogy

Knowledge and application of effective practice
    Student-centered instruction
    Classroom management techniques
    Interdisciplinary and multicultural curricula

II. Content

Knowledge of subject matter
    Interactive organization/Presentation of content
    Student outcomes and assessment

III. Professional development and school quality

Documentation of continuous learning opportunities
    Collaboration with peers and colleagues
    Change in practice to meet student needs

IV. Home involvement
Encouragement of family involvement   Accessibility, timeliness, and variety in teacher/family communications

Finally, we wanted to find out whether the interns who had graduated in the last ten years were still teaching and in what type of setting they were employed, as well as their beliefs about the usefulness of the program to their development as teachers. To do this, we designed a survey in 2005 and mailed it to nine cohorts beginning with the 1997 interns. We distributed the same survey electronically to the 2006-2007 cohort at the end of their first year of teaching, one year after they completed the program. Our return rate was 60%, and of those who responded, all were employed as teachers or administrators and 39% were employed in urban schools.

As with qualitative studies, we sought to understand the "preoccupations" (Huberman, 1995) of the interns in our ten cohorts through the analysis of critical

incidents, journals, and interviews, and through the eyes of their supervising principals during their internship year. We also sought to capture their perceptions of what they learned as novices years after they had entered the field. We looked for patterns within and across groups, and sought to understand ways the patterns did and did not connect to existing theory on how teachers learn (Clandinin & Connelly, 2000). The use of multiple measures of data collection across time allowed us to develop an intriguing snapshot of what the 54 interns learned during their internship year, and what they believed they had learned as they reflected on their program in light of their actual work experience years later. Taken together, these snapshots led us to believe that the changes we saw in interns' knowledge and practices not only resulted from the year-long, school-based internship, but from the connections between emotional thinking and cognition that emerged in the rich context of classrooms.

Looking Within: Findings from Interns' Critical Incidents, Journals, and Interviews

Teachers manage hundreds of situations each day, making decisions rapidly and often relying on autonomic responses or prescribed strategies. They do not have the opportunity to replay a classroom episode, consider its implications, and institute a "do-over." When decisions are made without the benefit of analytical thinking, they can, over time, lead to habitual ways of doing things that may not be in the best interests of students. In our work with the ten cohorts, we discovered the power of critical incidents and journals to deepen interns' thinking, and therefore improve performance, by focusing their attention on innately interesting, bothersome, puzzling, or surprising episodes from their classrooms.

> I'm having a hard time getting kids to listen and do their work, especially during math. Yesterday two students had serious outbursts that lasted a long time and kept me from going on with the lesson. I tried ignoring and proximity, but they were so loud no one else could focus. I was so frustrated and embarrassed, and almost angry. Since I am not full-time in the classroom, I feel that's why students may not listen to me. K [mentor] suggested that I eat lunch with small groups of students to get to know them better, so I will start with these two kids. I am bringing chocolate chip cookies, too! By working on developing a relationship with them, I am hoping to gain a level of respect and understanding. . . -Charlotte, Critical incident, October

In seminar discussions we asked our interns to talk about these incidents in terms of teacher behavior and student learning and, over time, this focus produced a propensity to think broadly about cause and effect (Grant & Gillete, 2006). As Charlotte illustrates, it is easy to slide into frustration over inappropriate behavior, more difficult to think about possible causes. Was the behavior related to something that could not be changed (her status) and therefore not her responsibility to address? Was the behavior related to her relationship with the two students or her inability to understand their instructional needs as subtly suggested by her mentor? Although, in October, Charlotte does not consider the diverse routes these different ways of thinking might take her, she does accept the gentle nudge to think beyond her original assessment and consider a broader range of causes. In critical incidents and journal entries that followed her lunch dates with

students, Charlotte articulated the importance of understanding students' academic abilities and holding appropriate expectations "because students listen more and do their work if I show I understand." Prompted by her frustration and embarrassment, the changes she made in instructional behavior lead Charlotte to more a more complex perspective on students' participation in class.

We came to refer to critical incidents such as these as "precipitous events" to account for their emotional load and because, over time, our data show that the majority of interns, consciously or unconsciously, tended to narrow their attention to specific types of incidents that held personal relevance. Too, as an intern's ability to separate observation, analysis, and decision-making improved, the intern's focus led to the development of a kind of expertise and often to a watershed. Charlotte, for example, continued to write about two problem students' lack of engagement and began to research goal setting conferences as a management tool. She developed a case study for her master's research project to investigate whether goal setting and individual meetings with students could improve their levels of engagement.

At the conclusion of her internship, Charlotte revisited what she had written and developed a concept map to trace her thinking. She grouped and color-coded all critical incidents she considered similar in nature, and gave each category a descriptive label. Using the labels, she developed a map to illustrate her preoccupations during the year. Thicker lines represent the categories that she identified as dominate in her thinking. Figure 1 is the concept map she drew to present to her peers at the final seminar. The patterns she identified caused her to remark, "It was as if I knew what was important all along but I didn't know how to name it."

Emotion, Reflection, and Cognition

With each successive cohort, the impact of critical incident analysis on preservice teachers' thinking was made clearer to us. Our original focus on the content of critical incidents expanded to include questions about the influence of emotions. Did emotional thinking drive the identification of specific incidents as critical incidents? Or were the critical incidents, themselves, emotional triggers? Were the rich context of the school-based program and the coaching by mentors and like-minded peers necessary precursors?

We found that 78% of the critical incidents identified by the total group of 54 interns clustered around three broad categories: effective teaching strategies, discipline and management, and building relationships/rapport with students. Table 2 illustrates the broad categories that were developed using a constant comparative method to code critical incidents and the percent of critical incidents coded for each category.

This hierarchy of concerns generally held true for individual cohorts as well as for the total group of 54. We had predicted that classroom management and discipline would surface as the top concern for each cohort, followed by specific concerns about the urban setting, itself. We were surprised when the majority of critical incidents focused on instructional issues and when building rapport with students continued to surface almost as often as discipline and management. We attribute this to the collaborative, integrated, mentored nature of the program. We also believe the nature of the program was one important reason the interns did not characterize critical incidents as strictly urban issues courses of nor did they blame the urban environment for the concerns they identified.

To illustrate the ways in which reflection on critical issues, and the power of the emotional thinking behind them, influenced the professional development of interns we include the following profiles. These interns were selected because their profiles most clearly show the influence of emotion, cognition, and reflective practice on their development both during their internship year, and later as they completed their first years of teaching. In both cases, patterns in the issues interns identified surfaced early in the year and led interns to take specific action in their classrooms.
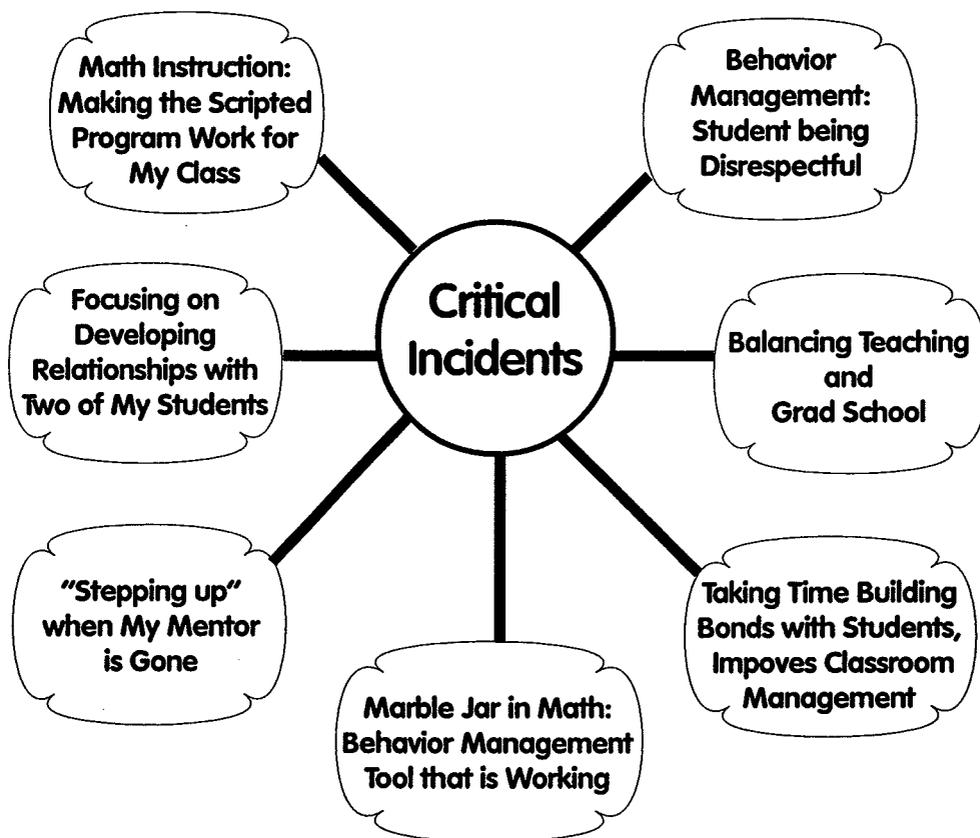
Figure 1. Charlotte's Concept Map

Table 2. Types of Critical Incidents Identified by Interns

Category Codes	% of total
Effective teaching strategies	33%
Discipline and management	26%
Building relationships/rapport with students	19%
Motivation	7%
Time management	5%
Teaching students with special needs	4%
Relationships with mentors	4%
Feelings of inadequacy as a teacher	2%

Ultimately both interns selected research topics for their master's theses in these areas and, as is characteristic of highly effective teachers, what they learned was so personally powerful that they put their ideas into action during their first years as classroom teachers.

Profile One: Diane's Questions about Respect

Diane's internship began with concerns about discipline and management and moved quickly into a focus on relationships with and among her students. Early in September Diane drew a triangle in her journal and labeled the points: students, curriculum, and instruction. Below her triangle she jotted the following thoughts:

1. Students bring with them (everyday) baggage, attitudes, and perceptions for behavior.

2. Students need structure, consistency, follow-through, stimulation!

3. Students need OWNERSHIP of behaviors and learning.

I know a teacher's management impacts on learning and I have a lot of needs in this area. My goal is to constantly reflect on my practices and methods and the results of my actions. -Diane's Journal, September

From the beginning, perhaps because she had been placed in a fourth-grade classroom that had a reputation for being especially tough, Diane struggled to find her balance. Her critical incidents described encounters with students whose "strong personalities," "disrespect," and "lack of ownership of their behaviors" caused her to spend the majority of her 15 hours of teaching time arguing with students. In October she told us, "Although tired and frustrated, I am optimistic. . . . All of us, teachers and students, have it in us to do the right thing because it is the right thing to do." When we asked her to explain what she meant, Diane remarked that she thought there must be something in the classroom environment that would encourage more respectful behavior. "Do I have

students' respect? Have I earned it? Is the misbehavior me or is it them?" Her preoccupation with student "baggage" and its impact on the classroom carried through in weekly journal entries and surfaced constantly in critical incidents about individual students' behaviors. Finally, after reading Ruby Payne's book, A Framework for Understanding Poverty, Diane hit upon a plan. She decided that, "perhaps through some kind of character education," she could teach her students the hidden rules of classrooms and therefore change the environment.

Diane searched the literature for strategies she might try and made the decision in November to institute morning meetings. Morning meetings were used to teach the cooperation and communication skills Diane saw as deficit, but were also an opportunity for students to speak their minds. "They have different ideas about what's 'fair.' They feel our classroom rules are unfair so therefore they do not have to follow them and do not understand why a consequence is given. I keep hearing, 'I didn't do nuthin'! I only. . .' so I'm going to start with discussions and role playing about what fair means." Diane's mentor was in full agreement and, together, they launched the program which remained in place throughout the year.

Diane collected data on students' perceptions of morning meetings, planned meeting agendas around misbehaviors she wanted to eliminate, tallied the numbers of targeted misbehaviors when they occurred, and found that the meetings did make a difference. One of the last critical incidents Diane described was a picture of the growth she saw in her students and in herself as a result of the morning meetings. She was surprised by how much "students need the teacher to monitor and regulate their behaviors but also how the opportunities to learn self-regulation and self-monitoring strategies can improve individual learning." She told us, in fact, that classroom management was not all about control, but "about being fair and developing rules and routines based on commonly held ideas about fairness" and that learning this had guided her development as a teacher in 'the most positive direction I can imagine."

Diane presented her thesis to the school's faculty, and when she was interviewed for her first teaching job, her ideas about morning meetings, classroom management, and relationships with students were one of the reasons she was hired. Diane not only instituted morning meetings in her new classroom, but she trained other teachers in her new school and presented her program, with curriculum and slide shows, to graduate classes at area colleges.

Profile Two: Nancy's Questions about How Children Become Readers

For Nancy, critical incidents revolved around effective teaching, particularly in the area of reading because it impacted her students in every subject. Like Diane, Nancy found herself placed in a challenging classroom. Her third-grade students were a very diverse group with widely differing skill levels. She quickly became concerned with planning because she was unsure how to address the variety of levels. In October she wrote, "I read a paragraph with the class today and when I stopped to ask for definitions, I realized they did not know the meaning of so many words that the paragraph made little sense to them. Even though it was English-Language Arts (ELA) test preparation material, they weren't ready. I stopped. You can't assume that students know something just because you are using the material provided for that grade level." Because Nancy was to take over the teaching of guided reading in her classroom the following week, she decided she would need to re-think both her approach and her expectations for the students.

In November, Nancy was still struggling with what she could do to help her students reach district and state reading goals. "My students misbehave when they don't understand what we are doing. Behind each misbehavior, I know there is a need unmet. I get very frustrated and it breaks my heart to see a student so lost. I just need to keep building my knowledge of guided reading." Fortunately, Nancy's mentor agreed that she, too, could use some fresh ideas.

Nancy became interested in trying different approaches, veering away from the district's prescribed reading program as much as she was able, and observing whether the new ideas she tried increased students' engagement and motivation. It was difficult, and she wrote often about giving up reading instruction time to prepare students for the ELA test when the students had so much trouble reading in the first place. "ELA is driving me insane. It makes me very mad!" For Nancy, the watershed came shortly after Thanksgiving. She had taught a reading lesson with role playing that went remarkably well and she was surprised that students caught on so quickly. "Sometimes they amaze you! I wish I could figure out what happened to make them so 'on.' They couldn't answer any of the questions the day before! It makes me think that it's always there, but we just need to figure out how to bring it out." How to bring it out became reader's theater.

The middle of winter found Nancy's reading class deeply involved in reader's theater, reading prepared scripts to increase fluency, and writing their own scripts for fun. Nancy regularly collected data on fluency rates and compared them to their fluency scores at the beginning of the year. She interviewed students about reader's theater and she collected observation data on engagement during class. Like Diane, Nancy was thrilled to find her students making progress. She wrote, "The students are really motivated by reader's theater. They look forward to it and we are ALL having fun! (Me, too!) We have been working on using expression and they pick it up faster than normal. I think this is because they have a purpose for using expression when doing reader's theater."

Nancy, too, presented her research data to the school's faculty at the end of the year, along with a slide show of her reading class doing a reader's theater production for the younger grades in the school. The following year Nancy was hired to be the ELA teacher on an interdisciplinary team and she immediately instituted reader's theater in her sixth-grade classroom. "I have learned," she told our final seminar, "not just to allow for the teachable moment—but to go and find the teachable moment. You cannot rely on the structure of the curriculum as the be-all-and-end-all."

Principals' Observations

Interns were observed at three points during the year using standardized district forms. Although they did not progress at the same pace or demonstrate exactly the same strengths, final, end-of-the-year evaluations were consistently positive. Principals rated all interns as either proficient or meeting standards, ratings that compared favorably with those given to the full-time, experienced teachers at their schools. An analysis of principals' comments indicated the area of greatest growth across the ten cohorts was in Category I, Pedagogy. In fact, three of the four key ideas in this category—knowledge and application of effective practice, student-centered instruction, and classroom management techniques—were directly related to the content of the majority of critical incidents written by the interns.

Of special interest was one key idea, change in practice to meet student needs, under Category III, Professional Development and School Quality. The focus on cause-effect relationships in critical incident writing lead the majority of the 54 interns in our study to the realization that changing instructional behavior was a more effective way to increase engagement that simply telling students to "pay attention." In this area, abundant comments written by principals, such as the following, pointed to interns' growth.

> Students used their books to find thick and thin questions and write them on sticky pads. Once everyone began working, Ms. S. [the intern] circulated around and then called a guided reading group to her table. She asked them to think about the book and showed them a chart to help with thick and thin questions. "Can you give me a thin question?" Once they gave her a question, students wrote it down on their own charts. Students seemed to struggle with this activity. I believe this is why Ms. S. stopped and called this particular group to come up and work directly with her. - Principal's Observation, March

Principals' observations indicated that the interns consistently demonstrated, over the course of their internship year, an increasing ability to use constructive feedback from observations to improve their teaching.

Most telling, however, is the fact that, with only one exception, when teaching positions opened in their schools, principals pushed to hire graduating interns to fill the spots. The preparation of the interns was so well regarded that the district's central office agreed to place graduating interns interested in remaining in the area on the district's "early hire" list giving them priority in the hiring process, along with long-term substitutes and contract teachers, well before any other first-year teachers could be interviewed.

Looking Back: Findings from the Survey of Ten Cohorts

Darling-Hammond (2006) reports graduates' perceptions of the usefulness of their preparation programs change during their first years in actual practice. We were pleased to find that graduates in all cohorts felt very positively about the program, rating every item on the survey as strongly agree or agree on a four-point scale. Interestingly, the two items that received the lowest mean ratings may reflect, in part, the growing focus on assessment over the last 10 years and a continuing tendency for teachers to feel isolated in their own classrooms. Table 3 illustrates the total mean rating of survey items in descending order.

Included on the survey was an open-ended section for past interns to discuss any perceived outcomes we had not listed. Their comments support our belief that an intensive year-long program situated in schools provides the time, opportunity, and support essential to the development of high quality teachers. The following excerpts are characteristic of what they told us.

[The internship] showed me the reality and allowed me to test the theories and strategies for the first time without the sole responsibility for the classroom (1998).

- [It] gave me the foundation on which to build [future learning] (2001).

- It is an incredible transition between student teaching and a first year of teaching (2002).

- If I was to start teaching after student teaching I would not have felt prepared enough (2004).

- The opportunity to participate in and contribute to the entire year-long curriculum was valuable for a deeper understanding of how students learn over time (2005).

Reflecting through the lenses of their current roles as teachers or administrators, past interns pointed to the importance of their internship years as "a jumping off point" that enabled them to continue to learn from teaching after they entered the field. This is an important outcome because expert teaching skills develop over time (Feiman-Nemser, 2003; Feiman-Nemser, Carver, Schwille, & Yusko, 1999) and are most likely to develop when teachers have acquired the ability to transfer pedagogical knowledge and skills (Korthagen & Kessels, 1999) to the real world of teaching; this, despite perceived incongruence, puzzling effects, and complex settings.

Table 3. Survey Data

As a result of the Collaborative Masters Program	Total Mean Rating on a 4-Point Scale
I made a smoother transition from college to professional life.	3.8
I had a broader repertoire of teaching strategies that I felt confident using during my first years.	3.7
I was better prepared to handle the complex interactions of a classroom when I began teaching.	3.6
I was a more reflective practitioner.	3.5
I was more prepared to handle theoretical and practical questions during job interviews.	3.5
I was more positively perceived by administrators as better prepared to teach.	3.5
I was better able to use a broader range of formal and informal assessments to guide my teaching during the first years.	3.3
I was more positively perceived by my colleagues as better prepared to teach.	3.1

Conclusions

"Understanding of practice must be integrated with understanding in practice" (Dall'Alba & Sandberg, 2000, p. 402) in order to make the theoretical frameworks of learning real to teachers. For the interns in this study, the usefulness of the theories they had learned as undergraduates became transparent only when they, themselves, encountered concrete problems or personal concerns to which they could apply the theories and test the results of modifications they made. Having an audience of like-minded peers who acted as a sounding-board, as well as the time to reflect on issues, led interns to a greater understanding of practice and directly impacted their later experiences in their first years of teaching.

The more strongly interns felt about particular incidents, that is, the more emotionally invested they were, the more focused they became on analyzing the associations between incidents and their outcomes. Subsequently, the more closely interns connected the outcomes of critical incidents to their self-perceptions of ability as teachers, the harder they worked to link theory and practice. As Le Doux posits, "Emotions, after all, are the threads that hold mental life together. They define who we are in our mind's eye. . . " (1999, p. 11). Or as one intern described it, ". . . the more I reflect on [critical incident], the more motivated I become to succeed for my students. I will get this!" Critical incidents, with their emotional undertones, became something about which interns could take action; they became opportunities rather than impenetrable barriers.

When our classroom's student teacher arrived, it was a turning point for me. Suddenly, rather than being the newer or inexperienced teacher in the room, Jason was. He began turning to me for suggestions and guidance as much as he turned toward R [mentor]. Because of this, I felt the urge to step up to the challenge and be what he needed me to be—a strong, confident teacher. Within a week or two, I suddenly felt as if I belonged. I felt right in my own skin every moment I was in the classroom. My teaching became stronger. Behavior management felt second nature. Plus, I really started to act like myself—goofy and silly and quirky, and my students have really responded to my natural and true behavior. I became a teacher within, rather than feeling as if I was putting on that role each day. I am surprised that Jason's arrival has had such an effect on me. . . -Annie, Critical Incident, March

How can we prepare highly effective teachers? Although there is no definitive answer to the question (Cochran-Smith & Zeichner, 2005), the experiences of the interns have provided us with two noteworthy approaches. First, we believe that preservice programs designed to build on initial study by integrating graduate coursework with year-long mentored teaching experiences are more likely to result in highly qualified teachers. Our data illustrate that rich contextually-based programs that provide sheltered support are needed for novices to link theory with practice in a personally relevant, meaningful way. Secondly, our experiences lead us to propose that the relationship between learning and emotion plays a far more profound role in the development of highly qualified teachers than has been previously considered. Our experiences suggest that emotional thinking is a critical, but undervalued, component in teacher decision-making, and that intensive, school-based professional development for preservice teachers can harness the power of emotion in ways that will produce more reflective practitioners.

Emotional thought is often typecast as less important, less productive than rational thought. In the same line of thinking, being too emotional has been blamed for poor judgment, such as being too attached to a situation to make an objective decision. Our experiences with the 54 interns, however, lead us to reject the notion of scientific detachment when it comes to the preparation of highly qualified teachers. Our data emphasize the idiosyncratic, situational, and, yes, emotional nature of teachers' thinking. It is emotional thinking that played the central role in bringing prior knowledge to the forefront as interns struggled with decision-making in their classrooms. Emotional thinking focused interns' attention, framed their questions, and sent them in search of new techniques, new approaches, and new materials that might benefit their students. Finally, emotional thinking lead to the translation of critical issues into research projects, the outcomes of which impacted the later teaching experiences of interns like those profiled in this article. Indeed, our ten years of work with intern cohorts cause us to suspect that the roots of highly skilled performance stem from the neural wiring that links cognition and emotion, roots that grow quickly and deeply within contextually-based professional development programs.

Nurturing the connection between emotional thought and cognition can produce teachers with high levels of professionalism and commitment. Immordino-Yang and Damasio (2007) observe that when we fail to acknowledge the role of emotions in learning, "we fail to appreciate the very reason students learn at all" (p. 9). We believe the same can be said of novice teachers who learn, or fall short of learning, the concepts and skills that will make them exemplary.

References

Anagnostopoulous, D., Smith, E., & Basmadjian, K. (2007). Bridging the university-school divide. Journal of Teacher Education, 58(2), 138-152.

Ashcroft, M. & Kirk E. (2001). The relationship among working memory, math anxiety, and performance. Journal of Experimental Psychology, 130, 224-227.

Bechara, A. (2005). Decision-making, impulse control and loss of willpower to resist drugs: A neurocognitive perspective. Nature Neuroscience, 8, 1458-1463.

Clandinin, D. & Connelly, F. (2000). Narrative inquiry: Experience and story in qualitative research. San Francisco: Jossey-Bass.

Cochran-Smith, M. & Zeichner, K. (Eds.). (2005). Studying teacher education: The report of the   AERA Panel on Research and Teacher Education. Mahwah, NJ: Lawrence Erlbaum.

Dall'Alba, G. & Sandberg, J. (2006). Unveiling professional development: A critical review of stage models. Review of Educational Research, 76(3), 383-412.

Damasio, A.,Grabowski, T., Bechara, A., Damasio, H., Ponto, L., Parvizi, J., & Hichwa, R. (2000). Subcortical and cortical brain activity during the feeling of self-generated emotions. Nature Neurosceince, 3, 1049-1056.

Darling-Hammond, L. (2000). Studies of excellence in teacher education. Washington, DC: American Association of Teacher Education.

Darling-Hammond, L. (2006). Assessing teacher education: The usefulness of multiple measures for assessing program outcomes. Journal of Teacher Education, 57(2), 120-135.

Feiman-Nemser, S. (2003). What new teachers need to learn. Educational Leadership, 60(8), 25-29.

Feiman-Nemser, S., Carver, C., Schwille, S., & Yusko, B. (1999). Beyond support: Taking new teachers seriously as learners. In M. Scherer (Ed.), A better beginning: Supporting and mentoring new teachers (pp. 3-12). Alexandria, VA: ASCD.

Fischer, K., Daniel, D., Immordino-Yang, M., Stern, E., Battro, A., & Koizumi, H. (2007). Why mind, brain, and education? Why now? Mind, Brain, and Education, 1(1), 1-2.

Goleman, D. (2006). The socially intelligent leader. Educational Leadership, 64(1), 76-81.

Grant, C. & Gillette, M. (2006). A candid talk to teacher educators about effectively preparing teachers who can teach everyone's children. Journal of Teacher Education, 57(3), 292-299.

Hole, S. & McEntee, G.H. (1999). Reflection is the heart of practice. Educational Leadership, 56, 34-37.

Huberman, M. (1995). Professional careers and professional development: Some intersections. In T.R. Guskey & M. Huberman (Eds.), Professional development in education: New paradigms and practices (pp. 193-219). New York: Teachers College Press.

Immordino-Yang, M.H. & Damasio, A. (2007). We feel, therefore we learn: The relevance of affective and social neuroscience to education. Mind, Brain, and Education, 1(1), 3-10.

Korthagen, F. & Kessels, J. (1999). Linking theory and practice: Changing the pedagogy of teacher education. Educational Researcher, 28(4), 4-17.

LeDoux, J. E. (1999). The emotional brain: The mysterious underpinnings of emotional life. New York: Touchstone.

Meijer, P., Zanting, A., & Verloop, N. (2002). How can student teachers elicit experienced teachers' practical knowledge? Tools, suggestions, and considerations. Journal of Teacher Education, 53(5), 406-419.

Smith, T. & Ingersoll, R. (2004). What are the effects of induction and mentoring on beginning teacher turnover? American Educational Research Journal, 41(3), 681-714.

Zeichner, K. & Conklin, H. (2005). Teacher education programs. In M. Cochran-Smith & K. Zeichner (Eds.), Studying teacher education: The report of the AERA panel on research and teacher education (pp. 645-736). Washington, DC: AERA.

Zembylas, M. (2007). Emotional ecology: The intersection of emotional knowledge and pedagogical content knowledge in teaching. Teacher and Teacher Education, 23(4), 355-367.

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