

Chapter 5 – Conclusions and Discussion

The primary purpose of this section is to examine the two research questions:

RQ1 What needs are important to the first-year teacher?

RQ2 In what ways do teachers think their preservice program has prepared them (or failed to prepare them) to meet these needs?

First, however, in this section I will address the issue of whether or not the novice teachers in the study experienced the “reality shock” noted in the literature. Finally, I will make some suggestions for improving teacher education, based upon the ideas and experiences of my collaborators.

Was there a “reality shock” for the teachers in the study?

As noted in Chapter 2, the research literature indicates the occurrence of a phenomenon called “reality shock” found among beginning teachers. The “shock” is generally thought of as the result of a new teacher’s unrealistic optimism clashing with the hard reality of the classroom. The focus of the reality shock seems to be in matters of student discipline and behavior, as evinced by the following statement from one of the respondents to a study by Covert, Williams, and Kennedy (1991, p. 9):

... the first year teacher believes that this is going to be a truly enjoyable experience, only, in certain circumstances, to be faced with a pack of hungry animals.

Many of the authors cited in Chapter 2 blame the reality shock for a number of maladies that afflict education, from teachers leaving the profession early, to teachers falling back on older, more secure teaching methods as a “survival” measure. Many also

blame preservice teacher education for contributing to the reality shock by failing to give new teachers the knowledge and skills to cope with what they will face in the classroom. It is reasonable to ask the question in this study: Did the teachers in the study appear to suffer from the reality shock in their initial teaching experiences?

The answer appears to be no, at least not in the usual sense of the reality shock. Many of the student teachers in the study reported that they were concerned about student behavior headed into their student teaching experience. They had heard many “horror stories” about poorly-behaved or even violent students in the public schools, not only from their preservice classes, but also from friends and the popular media. “Naïve optimism” is certainly not a phrase that could describe the expectations of student behavior held by most of the student teachers going in to their student teaching experiences. Some mentioned that they were nervous about going into some of the host schools because of frightening rumors. Once they got into their host schools, however, many of the student teachers reported being pleasantly surprised by the behavior of most of their students. The reports of drug use, gang activity, and threats of violence did not match with what the student teachers experienced in actual classrooms. Some students were still not co-operative, but the incidents reported were mild and usually quickly resolved. The student teachers were clearly relieved. James happily concluded that the bad reputation of his host school was a “load of crap,” a sentiment expressed in kinder language by some of his fellows.

The student teachers were not immune to another kind of “reality shock,” however. Many reported being very taken aback by the lack of academic ambition displayed by their students. The only exception was Becky, who was fortunate to find herself in charge of honor classes, which attract a more motivated student clientele. To the others, a large number of their students seemed uninterested in their education (and, in the eyes of the student teachers, their futures). This situation baffled many of the student teachers, and they found it very discouraging:

Lisa: I just can't be in a school like that. I hate to say it, but I can't... I mean, I've experienced all sorts of school, but I've just never been in that environment, where kids just do not care like that. I've just never been around it before, so...

James: I dunno. (laughs) I didn't – I expected people to want to learn, I thought everybody wanted to learn, and it's just not the case... It's like I said, it's a problem getting those kids motivated. I could see how it would wear a teacher down, in that situation, just because there are so many kids that don't want to be there, that are there.

The bewilderment of the student teachers at their pupils' apathy is perhaps not very surprising. They are, after all, teachers, and most professed a great love of knowledge and learning as a reason for entering the profession. Additionally, they are students of science, a discipline notorious for being demanding and rigorous, and for requiring a great degree of motivation and interest of its students. Thus, it is very understandable that the student teachers would have a hard time relating to the apathetic attitudes of some of their students.

So it appears that the student teachers were well "inoculated" against traditional forms of reality shock by their preservice education. Aided by word of mouth and the popular media, the preservice classes provided the student teachers with ample warning about the possibilities of improper or even violent behavior from students. Most were relieved that the warnings were exaggerated. They were generally not prepared, however, for the high levels of student apathy that they encountered. To be fair, one can reasonably wonder exactly how their preservice education could have prepared them to confront such stubborn lack of motivation. The nature of motivation was an important topic in their courses on pedagogy, but as Derek pointed out, the discussions were far too abstract and theoretical to be useful:

... it was a topic that was discussed in almost all of the certification classes I had, and there was, you know, a tiny bit of general comment of what it is and what helps it, and once or twice there were attempts during preservice classes to really get into it. But I really felt... thoroughly ignorant of the subject when I was... when all of these efforts were done... And even then you could go through a textbook definition and do all the things that it says would help intrinsic motivation, and not do a darned thing to actual real-world students.

Perhaps the only way to prepare the student teachers to confront ubiquitous student apathy is to offer them frequent brief exposures to a variety of actual classrooms, as observers and guest teachers. The student teachers could see examples of student apathy in a “safe” – that is, non-evaluative – context, and have the ability to see how master teachers try to make science more appealing to students. They would then have the ability to reflect on those experiences and discuss techniques with cohorts, professors, and master teachers. It is clear from their reactions that the student teachers were not adequately warned about low student motivation by their few and fleeting classroom experiences prior to student teaching. The first time most of the prospective teachers in the study were really in a position to grasp the breadth and depth of student apathy was during their student teaching experience, a high pressure situation where they were “under the microscope” of intense evaluation.

What are the needs of the student teachers in the study?

How well did their preservice education provide for those needs?

As stated in Chapter 1, this study initially adopted a definition of “need” in line with that of Monette (1977) as “a particular skill or body of knowledge relating to the task of teaching.” Surveying the results from Chapter 4, it may seem that this definition is slightly restrictive. The results suggest a broadening of the definition to include

attitudes as well as skills and knowledge. With this expanded definition, we can get a list of four such “needs” mentioned by the student teachers:

- A sense of “caring” – Although the student teachers could not agree on exactly what “caring” entailed, they all agreed that it was vitally important for teachers to be concerned with students’ success. Just as important was the ability to communicate this sense of caring to their students. Most of the collaborators believed that not only does this attitude motivate the teacher to work harder, but if students are aware that the teacher cares about their learning, the students might be more motivated as well.
- Classroom management skills – The student teachers were also concerned with being able to create and maintain a safe and efficient learning environment for all students, with a minimum of disruptions. The approaches varied, from Derek’s desire to “work his will” to James’s desire to create an atmosphere of friendly co-operation, but all of the students were concerned with finding out how to manage their classrooms effectively.
- Organizational and time-management skills – All of the student teachers realized that teaching is an intense and demanding profession, and most were concerned with developing various techniques for preparing lessons and planning all aspects of their teaching. Hand in glove with this concern was the desire to develop techniques for managing a resource in very short supply for them: time.
- Science content knowledge – Whether they were looking at the teachers they were working with or looking inward, the student teachers acknowledged the importance of solid science content knowledge. They saw it as essential to their success in the classroom, a mark of a teacher’s legitimacy in the eyes of colleagues and students.

It is interesting to ponder how well these felt needs synergize with the goals and objectives of the education courses that the student teachers took during their preservice experience. Examining the syllabus for one of the courses in the preservice program, the “methods” class, we can see that some of the goals for that course match with the felt needs of the student teachers that took the course. Quoting from that syllabus, three of these goals were:

- Plan, implement, and / or evaluate for meaningful learning a variety of techniques of classroom management and organization, planning instruction, and assessment in actual classrooms.
- Plan lessons for meaningful science learning in science skills and attitudes, concepts, and generalizations based on a constructivist approach.
- Develop a repertoire of methods and techniques which allow for efficient, flexible decision-making for meaningful science learning.

These goals match up well with the student teachers’ felt needs for organizational and classroom management skills. Even the “skill” of a caring attitude could be considered an element of this formidable course objective:

- Develop a professional attitude toward teaching science which involves being receptive to feedback, reflective thinking, ability to construct meaningful questions, continuously formulating and testing hypotheses in science teaching situations, and by selecting additional, self-initiated activities leading to more effective science teaching.

Given that these course goals synergize so well with the felt needs of the student teachers, we can wonder how well their preservice education actually provided for those needs. The first item on their list may be the most frustrating to address, since one can reasonably ask how a preservice education program can be expected to instill a sense of caring in prospective teachers. Indeed, such a sense may be a prerequisite for even considering the profession. Perhaps the most that can be asked of a preservice program is to help prospective teachers cultivate that sense of caring, and giving them advice on how to properly channel it. In this respect, the preservice program under study may have overstated the risks of teachers “caring too much” or demonstrating their concern in improper ways:

Lisa: And it almost made it discouraging, some of the things that he was telling us that you just can't do with students, even though to you it may seem harmless.... I mean they give us all these hypothetical situations... Well, things actually happened: situations where coaches and teachers caring too much I guess, and allowing students to know where they live and things like that, and just horrible things that ended up. Teachers losing their jobs, lawyers and lawsuits, and all sorts of things. So I mean basically they just scared everybody half to death, you know.

While the student teachers acknowledged that their preservice instructors were *trying* to teach them classroom management skills, the student teachers made it clear that they found little useful in these attempts. A few acknowledged that they picked up a “helpful hint” or two, but in many cases they claimed that even these were simple “common sense,” implying that they would have eventually thought of or been told about such techniques anyway. They generally felt that the advice and instruction they were being given was not relevant to the situations that they would be facing (or had already faced) in the classroom. Some were critical of the “microteaching” exercises, claiming that teaching a “class” comprised of their fellow student teachers to be too unrealistic to

be useful. Some had hoped that they could pick up some ideas from their host teachers, but they were for the most part disappointed. This could be one aspect of the perceived negligence of many of the host teachers, but it could also be possible that good classroom management is “invisible” to the observer, and hard to describe. The student teachers were nearly unanimous in their opinion that field experience is the most effective venue for learning classroom management skills.

Lisa: So, I mean...this past two and a half weeks has been the best education about how to deal with students than any of this, like, year or so worth of classes I've been taking, I think.

Amy: I personally think that they should have had us to teach more than one lesson during the observation semester. Um, I think that was great experience, and would have made us a lot less nervous for the first week or two during student teaching... I mean I feel, like I said earlier, [education classes] helped me some, but I feel that actually being in the classroom and teaching is the most important thing... Yes, I think experience tops them all.

Joy: That's the whole thing: it's hard to teach someone how to teach. It's just an individualistic thing, and it's just the kind of thing that you'll learn once you start teaching, you know?

James: I think you just have to get out and experience, and then... just have the information... and then incorporate that into your actual hands-on experience, and build on certain things that work, discard things that don't work. Um, just having the resources available I think is important, but experience... that's what you really need. And I just didn't get that from my classes. They can't provide you with experience.

Derek: Um, you know, what I have learned from this... from this process is that, uh, at least so far there's no substitute for experience. None of the coursework was as good as the field experience.

By creating a motivation for doing such things as lesson plans, and by providing a situation where these organizational tools could be critiqued, the preservice classes received qualified praise from the student teachers. Some credited the intense time demands of juggling science content courses, education classes, student teaching, and personal matters with forcing them to become disciplined and organized. A few were disappointed that they did not receive more advice from their host teachers, and noted that their host teachers confessed to being disorganized themselves!

The student teachers had the most positive things to say about their science content courses. For the most part, they found the courses useful and challenging – so much so that their education courses suffered by comparison. The two correspondents with Master's degrees especially felt well-prepared and secure in their content knowledge. Those pursuing composite teaching certification were less so, but did not fault their content courses for their lack of confidence.

Somewhat conspicuous in its absence from the list of frequently-mentioned needs is mention of teaching techniques and pedagogical knowledge. Such matters seemed to not be prominent in the minds of the student teachers. They seemed more concerned with being well-organized and knowledgeable going into the class than they were with what they would actually do in class. Once they got into class, they seemed more interested in maintaining order than employing particular teaching techniques. This seems to parallel the findings of Fuller and Bown (1975) that teachers just starting in the classroom are more concerned with “survival issues” than with matters of pedagogy. The student teachers in this study gave the impression that they believed if they could just “get through” their initial experiences and establish some basic skills in organization and

classroom management, they could then worry about the esoterica of pedagogy. We can see this phenomenon in Derek's experiences as he began his first year. His new school had a number of elements that made Derek feel more "safe" than he did at his host school during student teaching: reasonably well-behaved students, good facilities, colleagues that he could respect, administration that he could work with, and the absence of outside agencies evaluating him. Without so many distractions, and "masters" to satisfy, he began to concern himself with exactly what he was going to teach over the semester, how he was going to teach it day-by-day, and how he could adapt his teaching to his students.

Additionally, the importance that the student teacher's attach to "caring" may indicate their attitudes toward pedagogy. They seem to think that being able to "relate to" students is more important than being proficient in any particular pedagogical technique. This may be an indication that some of them consider teaching to be largely improvisational, and that the key is to "know your audience."

Amy: You never know what's going on behind doors, and I think you need to be able to relate to each individual... if they have to work, y'know eight hours after school, you need to be able to relate to their situation, y'know and not just get on them constantly.

James: I think you have to convince the kids that, uh, you're there to help them, you're not just there to get a paycheck. You're there to help them succeed in school.

Joy: I mean, you wanna, you know, have... you know, your students obviously think that you care about them, and have, like, expectations for them, I think. You know, it definitely helps out their motivations...

Lisa: I just... I'm not able to understand why they just feel like there's no future ... I'm finding it really hard to relate to them right now. Really hard.

The fact that the students spent little time talking about pedagogical techniques may also be an indicator of the failure of their preservice classes to connect pedagogical theory to classroom practice. James's preservice teachers may be very frustrated to read his expressed desires:

I really wish we could have had more with the teaching... how to actually teach... I think if we had more classwork like that, you know, actually... "You should try this experiment for this," you know. I... That really would have been helpful.

James's teachers may contend that they were trying to do exactly that. However, he (and many of his cohorts) could not see the connection between what they were being told about learning, and what they could do in the classroom. They may have little regard for pedagogical techniques and educational theory because they feel it was presented to them without context and in a superficial manner.

Amy: I guess sometimes... class would just be boring. I mean, it's just like we already, don't you think we already know this? We're grown! You know?

Joy: I mean, I'm sure the courses helped me prepare in some ways, but... you know, not that much because it wasn't, like, that experience-oriented. It was more like a lot of talking and just... you know, doing these little assignments here and there that, you know, you really have no connection with, in your mind, to any, like, experiences that you're having, you know? So since you're

not making any of those connections – it’s just in one ear and out the other – you have nothing to, like, you know, apply it to. So it’s just... that’s why, like, people think it’s a waste of time.

Derek: But, uh... but, uh, the ideal being that we read and talked about some theoretical, you know, models, and general approaches to classroom management, but it was very vague and sort of unreal, and more or less theoretical. Or at least that’s how it came across. And I found that when I was in a situation, I did not have ammunition or training in how to effectively, you know, work my will. How to have the outcome be positive.

Becky: Um, in education there weren’t even any real tests or anything, (laughs) I mean, your test was how well you did in the classroom, obviously, but I don’t think that that was one of the things that was even really stressed in the classes, so I dunno...

With possible exception of the emphasis on a caring attitude, the preceding list of skills and bodies of knowledge offers nothing particularly new; other investigators have identified these needs (Baird & Rowsey, 1989; Covert, et al, 1991; Thomas & Kiley, 1994; Adams & Krockover, 1997; Freiburg, 2002). Simply presenting a list of needs also offers little insight into how preservice education can be improved. Looking at the preservice experience through the eyes of these novice teachers can allow us to probe deeper than the original research questions might permit. A possibly more useful question than the original one posed is: What do student teachers need *from their preservice education* in order to succeed in the classroom? Listening to what worked and what did not work for the student teachers in the study reveals six of these practical needs:

1. **Student teachers need solid content knowledge *that is focused on the knowledge they will be conveying in the classroom.*** University-level science courses, especially at the upper levels, tend to be focused on specific topics, and those topics may be so advanced that there is no time to address them in a secondary science classroom. So secondary school teachers may find themselves in the position of having to teach material that was only lightly touched-on in their freshman-level survey courses, while the advanced material discussed in their junior and senior year classes may be mentioned near the end of the secondary school year, if at all. The situation is even worse for prospective teachers who come to teaching late in their university careers, and seek a composite teaching certification. These teachers may not have had any exposure to some of the material that they will be expected to teach. Closer coordination between the university curriculum and the secondary curriculum (which does not need to constitute a “dumbing down” of the university curriculum) will better equip new teachers and increase their confidence.
2. **Student teachers need knowledge of educational theory *geared to their needs as classroom teachers.*** One of the most frequent complaints logged by the student teachers was that the material in their education classes had little apparent connection to what they were experiencing in the classroom. Those connections which they were able to make were perceived as being so simple and obvious that many of the student teachers dismissed them as “common sense.” Certainly their professors would argue that profound connections do, in fact, exist between educational theory and classroom experience, but it is clear that many if not most of those connections were not evident to the student teachers. It seems that more of Korthagen and Kessels’ (1999) *phronesis* (theory relevant to a particular context) should be folded into the preservice curriculum. More integration between the theory taught in the university classroom and the situations encountered in the secondary classroom is needed, to assist prospective teachers in seeing the connections between theory and practice.

Derek: But I think that... I get a strong sensation – and this is shared by others – that the textbook writers and the professors are in “La-La-Land” and they haven’t done it in awhile. Um, they don’t have that same... they don’t impress me as being cognizant of the realities of the classroom, or having reconciled what they’re saying to what they did or what they saw.

Becky: And it seems to me like it would be very easy for them to come up with ideas to just take the theory and apply it and give us practical stuff using this theory, you know?

- 3. Student teachers need extensive and varied field experiences.** Another major point of agreement between the student teachers in this study was the need for more field experiences. Exercises like “microteaching” to cohorts and all-too-brief classroom observations seemed like poor substitutes to the correspondents, who cited their actual classroom experience as one of the few things they found helpful. An extended program of field experiences that places prospective teachers in a wide variety of situations, with a gradually increasing workload and level of responsibility will assist student teachers in “growing into” their teaching. We can see in Becky’s story the benefits of such a system of gradually increased responsibility, as it certainly helped her make the transition. Expanding opportunities for actual classroom experience can also assist in integrating theory with practice, where it will provide a context which will make theory more relevant, and give student teachers more opportunity to practice what they are learning.

Derek: So that could have – my preservice experience is very important to my preservice coursework. I would be more able to confront, discuss and ask the professors – among other things, in classroom

management. I would be able to more intelligently discuss with them the material they were trying to present, and maybe get some value of it if I'd had more real experience earlier on in the process.

Derek: I don't think the "seed" idea is realistic because you have so little experience teaching during and before your preservice that the theory is just going to be meaningless, just meaningless for the most part. Being a student and being a teacher are totally different, just night and day, so you can't step up... You know, you can't relate the theory enough to your own experience for it to be useful or meaningful or stick, in my opinion.

- 4. Student teachers need opportunities to reflect on their experiences in the classroom and relate those experiences to what they have learned.** Just increasing the amount of classroom experience will not be enough. Teaching is a high-pressure situation, especially for a student teacher, and expecting novice teachers to reflect on what they are doing in the classroom as they are doing it is unreasonable. Critical reflection is a skill that requires time and practice to develop, and student teachers need to have time set aside for them to reflect on their experiences, both alone and with colleagues. Many times the student teachers mentioned that the discussions that they had with their cohort members were very productive and affirming, even more so than their theory classes:

Joy: I think that [Professor's] class would have been just as useful if we would have just gotten together for about an hour, and talked about our experiences, and what was going on. You know, just as much as... you know, doing like all these assignments and things that, like, you just don't really care about, and want to put much effort.

James: Actually, I learned more from my other... the other future teachers than I did from any of the classes, so that was kind of valuable. But other sources... the classes themselves weren't that real helpful, but the interaction with other students were... was helpful.

Becky: On a scale of 1 to 10, I'd say like a 2. Well, the only reason it gets a 2 is because I think that I got... I did get some valuable information from the fellow student teachers. But in general I feel like I got... pretty much nothing from my education classes that's going to help me in teaching.

Derek: I mean, just the common sense I get from talking to other people around here is worth more than the class notes and the tests and the reading assignments. Certainly the textbook reading assignments were trash: oversimplified, um, drivel.

During their student teaching, the only formal opportunity that the correspondents had to reflect and discuss with their fellows occurred during the "methods class," held on a weeknight, when the student teachers were worn out from a long day teaching. While the experiences may have been fresh, their energy levels were too low for the discussions sessions to be efficient. Additionally, many of the student teachers complained that some of their fellows would use the discussion sessions to relate personal tales of woe that had little connection to pedagogy. The student teachers needed opportunities to discuss and reflect with peers in a relaxed and safe atmosphere, unrushed and with adequate energy. Conscientious facilitation by the supervising professor is absolutely essential, to keep the discussion focused on professional concerns. Providing more opportunities for discussion could be very valuable in helping the student teachers engage in productive reflection which might help them forge better links between theory and practice.

5. Student teachers need dedicated, involved mentors. Perhaps the most striking result of this research is that only one of the student teachers in this survey had what could be interpreted as a positive experience with their cooperating host teacher. Most felt neglected at best, exploited at worst. While the task of mentoring should result in *more* work for the host teacher, some of the student teachers expressed concern that they were being used to *reduce* the workload of their host teachers. Even in instances where student teachers said that they enjoyed the “freedom” that their host teachers afforded them, one can see the tinge of feelings of neglect in their words. They received little in the way of useful advice and feedback from their supposed mentors, either because the host teachers could not articulate such advice or feedback, or because they were not interested. Amazingly, in a few instances the student teachers believed that their host teacher was undermining their efforts at classroom discipline or introducing new teaching techniques.

Lisa: She’s a great woman, but I don’t think she’s very supportive. I don’t feel like she’s even listening to me half the time when I say things. I feel like she’s kind of reading something, and she’ll look up and go, “oh, what did you say?” It’s just hard, that I don’t feel like she’s really there, or she’s really...paying attention... I mean, she has a right to leave, but I feel like she kind of leaves, and I can tell other teachers, kinda like, “She wasn’t there today?” You know you can kind of tell that something’s not right, a little like that, so... But I think she’s great... I guess the fact that I’ve gotten to do what I want to do is maybe a good thing. So that’s benefited me a lot.

Amy: Well, I should just say overall my host teacher is one of the best host teachers that any student teacher could have. However, (laughs) I feel I was worked to death, and I almost had like 5 or 6

nervous breakdowns because of the workload she placed on me. I don't know, because... my personality is "Oh sure! No problem! I can handle it!" And I never ever let it out to where, you know, "That's too much. Slow down." I called my Dad and I said, "I can't take it anymore. It's just... It's just...She's just... I feel I'm being... I feel like I'm a slave." I really did.

Joy: Uhhh, he's given me a lot of anxiety over, like, leaving me alone a lot. Even after I was supposed to be done, like with my teaching, and my total teach, and things, he still, like, wouldn't come to class, or say, "oh, I have to go do this." Run errands, and not come back... Kind of deserting me a lot.

Derek: Why can't they get me out of here? This guy is so demonstrably horrible that if anybody saw him, they'd be hard put not to kill him, never mind leave me here. I feel like it's been a big waste of my time. It's been frustrating. Um, I'm angry that I wasn't replaced...

Becky: I felt like it made life way more stressful than it should have been. And the kids were mad at me because she wasn't there and I was having to turn all these grades in... I mean, the cooperating teachers could have been better, but it wasn't a big disaster by any means. I mean, I didn't leave saying, "God, I never want to teach again." Which was, I think, the response of some of my other fellow student teachers; so it certainly could have been worse.

Derek, who arguably faced the "perfect storm" of an unproductive host teacher assignment, went so far as to request a change in his assignment, to no avail. It seems that these host teachers either did not appreciate or did not care about the tremendous responsibility that mentoring a new teacher involves. An increased

effort to recruit dedicated host teachers, to articulate more clearly what is expected of them, and to monitor their performance as closely as the student teachers are monitored, is needed to insure that high quality mentors are provided to new teachers. Or, as Lisa put it:

These [host] teachers need to know that having a student teacher does not give them permission to take a two-month vacation.

- 6. Student teachers need guidance and feedback from people who are not in a position to evaluate them.** Reading the stories of the dysfunctional relationships that most of the student teachers had with their host teachers, one is moved to wonder why *more* of them did not complain. None of the correspondents except Derek mentioned making a formal complaint about what was happening – or not happening – with their host teachers, and the reflective “journal entries” e-mailed to the university supervisor had little mention of problems. Even someone with as strong a personality as Derek, who did lodge complaints about his placement and asked to be removed, gave up when his request was denied. Why would the student teachers “suffer in silence” if their experiences were so bad? Perhaps the answer can be found in the fact that while by and large the student teachers seemingly did not feel comfortable discussing their host teacher difficulties with their university professor, the professor’s graduate assistant, or the host teacher, they had no problem discussing it with a disinterested “third party,” namely myself. Almost everyone who was in a position to provide feedback to the student teachers, and to act as a sounding board for their problems, was also in a position to evaluate them. It is possible that the student teachers did not want to seem weak or incompetent, or to be perceived as complainers or troublemakers by people who could make or break their careers as teachers. I made it very clear to the correspondents at the very beginning of the project that I was not connected with the teacher education program in any way, and that my opinions and commentary would have no influence on their ability to become certified as a

teacher. It is possible that my status as a fellow teacher who was not in authority over them made them more able to confide in me. Although Fuller and Bown (1977) contend that teachers are “loathe to report their feelings,” I found my correspondents to be open, candid, and in some cases brutally honest in their expressions of their feelings, for which I am quite grateful. I can only ascribe this level of trust to my status as an “outsider” that the student teachers did not have to impress. This is a strong indication that mentoring for new and prospective teachers absolutely needs to be non-evaluative, so that the new teachers can feel safe in being open and honest about their difficulties.

Suggestions for improving teacher education

This report concludes with a number of suggestions for improving teacher education, based on the experiences and observations of the student teachers in the study. In many cases, they affirm steps already taken in some current programs, and all preservice programs would do well to implement them, to better meet the needs of prospective teachers.

1. **Perhaps the most important improvement that many preservice programs can make is to incorporate more field experiences into the preservice curriculum.** By way of analogy, imagine a college-level physics class structured as follows. The first 12 weeks of the class consists almost exclusively of lectures about concepts and physics theory. Only a handful of demonstrations and computer simulations are used, and minimal problem solving is done. For those first dozen weeks, students never lay hands upon physics equipment, although they may *hear* about experiments or see demonstrations. The remaining weeks are spent almost exclusively in laboratory activities and problem solving, with little to no guidance from the professor who had been teaching the theory. A teaching assistant is supposed to help the student with the experiment, but in some (perhaps most) cases, the assistant is too occupied with his or her own work to help the students, or expresses contempt for the theories taught earlier in the

semester, or has also been unable to connect the theory with the experiments. Students are evaluated separately on the theory and application.

No one would seriously suggest teaching a physics class – or any laboratory science class – in such a manner. And yet the scheme laid out above is similar to the way that many teacher training programs are laid out. For many semesters, prospective teachers are shown a kaleidoscope of educational theories, with little mention of concrete ways that these theories can be applied in a classroom. They engage in a few “microteaching” exercises, with their fellow student teachers playing the part of pupils, and do a classroom observation or two. However, they do not perform serious application of the theory they have learned – classroom teaching – until their very last semester, in a 40-day whirlwind of activity. The people who tried to teach them educational theory are not usually the people charged with helping them apply it, and occasionally those helpers are not terribly helpful. The system certainly seemed absurd to Derek:

So with student teachers, you teach them everything, then you give them three months, and then they're ready? What? Or three months, ten – fifty days, ten weeks, fifty days is the requirement. And of course it works out to 12 or 13 weeks, with the realities of schedule and all. But, you know, it's just... it was just pretty silly to have a semester of classroom management, and then that semester ends, and then you have a couple of weeks of "issues in schooling" – whatever the hell that means – then three months of student teaching, and then what?

It is almost axiomatic that in order for science classes to be effective, instruction in theory needs to be presented side-by-side with discovery-oriented experiments. Science students need to “be scientists,” to experience the phenomena that they are being told about, in order to make the explanations of those phenomena more real to them. It should be similarly axiomatic that in order to be effective, teacher education programs

need extensive field experiences made up of authentic classroom instruction, where student teachers can “be teachers.” Contrived simulations like traditional “microteaching” are ineffective substitutes for real field experiences, since there is no way that a group of fellow student teachers can successfully simulate the reactions, requests and behaviors of a classroom of adolescents. Even if they possessed the requisite “acting” ability, they would be unlikely to make things too difficult for the “microteacher,” or give highly critical feedback, since they would not want to offend or hurt the feelings of one of their peers. A microteaching process similar to the one described by L’Anson, et al. (2003), with a small group of real secondary school students as the student teacher’s “audience,” would present a more authentic experience. It is also vitally important that field experiences be spread out over many semesters, and that they are integrated with courses in educational theory, so that student teachers may more readily see the connections between theory and application. As noted by some of the researchers in Chapter 2 (Stover, 1990; Feiman-Nemser, 2001; Taylor, 2000), science teacher educators need to “practice what they preach” in preservice education.

The UTeach Program at The University of Texas at Austin, described in Chapter 2, has as one of its hallmarks the incorporation of extensive field experiences into teacher education. As noted earlier, prospective teachers in the program are working in actual classrooms almost from the very start. Over the semesters, as the prospective teachers take courses in pedagogy and science content, they get many opportunities to hone their skills and knowledge in classroom settings at all levels of pre-college education. The program is designed so that by the time formal “student teaching” begins and the prospective teacher is fully responsible for a class, the classroom is no longer an unfamiliar place. While no formal research about the UTeach program has yet been published, personal communications with program directors and participants have revealed that graduates were in general well-pleased with the many field opportunities they were given. The program at Towson University described by Haines (2002) also follows this philosophy of gradually integrating student teachers into the classroom, with

extensive expert supervision and opportunities for reflection and discussion. These programs provide excellent models of productive field experiences.

2. **Preservice education programs need to pursue greater integration between all elements of the programs.** Under no circumstances should the results of this research be interpreted as evidence that educational theory should be eliminated from the preservice curriculum. While it is true that the student teachers interviewed in this study often contended that their theory classes were a “waste of time,” the interviews also gave insight into *why* they felt that way. The student teachers did not feel that their classes were less than useful because of the subject matter; rather it was because the subject matter was largely presented in a manner that was disconnected from the reality experienced in the field. Naturally, these field experiences cannot occur in a vacuum either.

Preservice science education can be envisioned as a triad consisting of field experiences, courses in pedagogical theory, and courses in science content. From the comments of the student teachers in this study, these three elements were too isolated and independent for the preservice program studied to be effective and valuable. Clearly, more integration is needed between the elements of the triad.

Figure 3 illustrates one way that this integration can be visualized. Field experiences provide opportunities to implement elements of pedagogical theory, and provide a medium for reflecting on those theories. In turn, courses in the theory of teaching and learning need to be focused on providing students with specific, concrete strategies for the classroom situations that student teachers will be encountering (the *phronesis* of Korthagen and Kessels, 1999), so that they can try out these strategies in their field experiences. Courses in pedagogy also need to make more of an effort to address the possibility that different subjects require different teaching strategies; this is especially true of science classes, which typically have a laboratory component that other disciplines do not have. Thus, education courses need to focus specifically on concrete

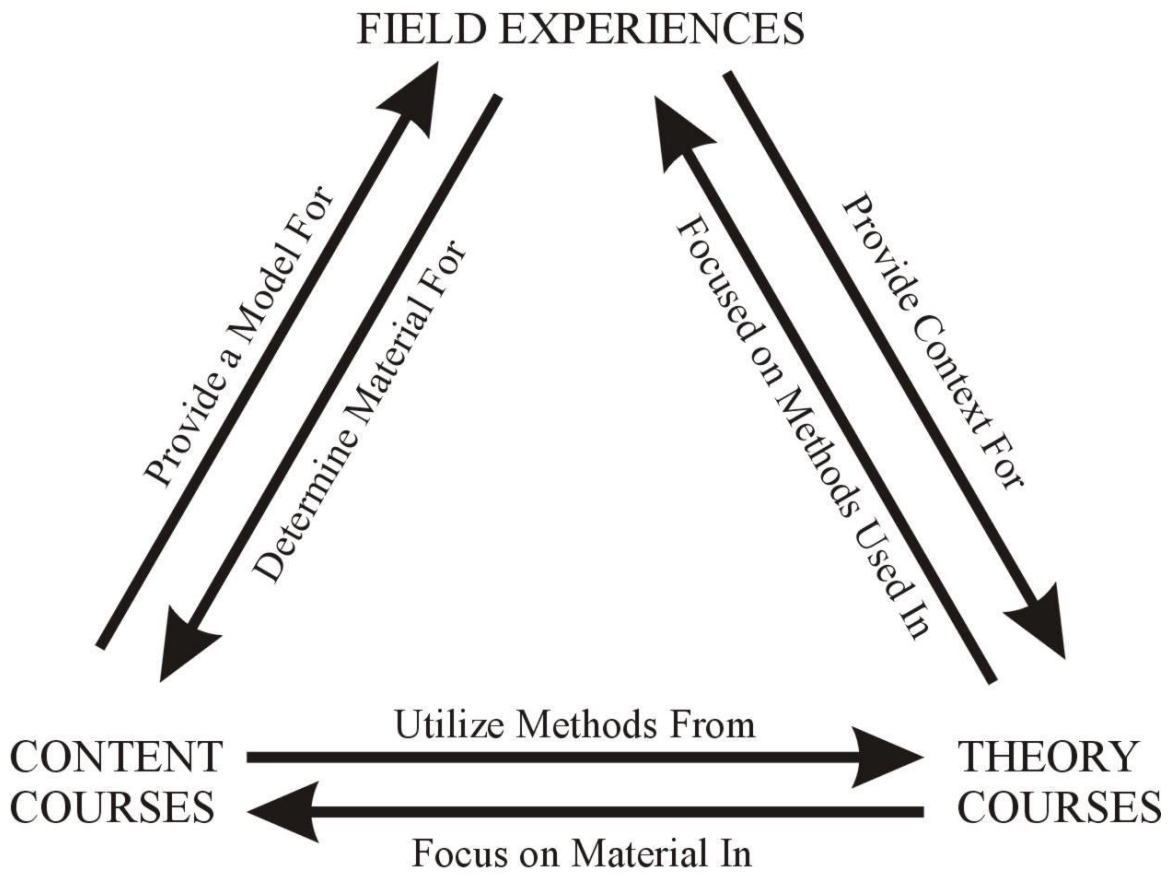


Figure 3: Integration of the Elements of the Preservice Education Triad

methods for teaching the subject matter teachers will be called on to convey in their classrooms. In turn, science content courses need to be structured so as to model sound, cutting-edge pedagogy, so that when teachers “teach as they were taught,” they will be equipped to do so in an effective manner. Finally, field experiences need to be integrated with science content courses, so that prospective teachers can learn the science content that they will be expected to teach in the field. Such integration is no doubt a difficult prospect, with the hardest sell probably being to those teaching science content at the university level, who may be as cynical about education research as Derek was. However, unless concerted efforts are made to forge strong links between the three elements of the preservice triad, it will be difficult for prospective teachers to make connections between theory and application, just as it would be for science students in a class where conceptual lectures and laboratory experiences are not integrated.

3. The effectiveness of field experiences (and indeed all three elements of the triad) could be greatly enhanced by extended opportunities for prospective teachers to reflect on their experiences and discuss teaching with their peers. Over and over the teachers in this study sang the praises of two elements of their preservice education: field experiences and discussions with peers. Not only do such discussions provide catharsis and affirmation, but they also provide student teachers with opportunities for critical reflection in a safe environment where they can collaborate with their peers. The process would be very similar to the “critical friends groups” described by Bambino (2002): a conference of equals in an atmosphere of peer mentoring. In such a situation, university education professors could play the dual roles of facilitators (to keep discussions safe, focused, and productive) and experts (to provide needed information, ideas, and insight). However, it is vital that discussions be focused on the student teachers, and driven by them.

It is also vital that a considerable amount of time be set aside for reflection and discussion. Such time cannot be viewed as “unproductive” in the face of the effusive praise of the student teachers in this study. A system similar to that employed by

Grankvist (1996) could be the optimal solution: one day a week devoted to guided planning, three days in the classroom, and one day devoted to guided reflection, discussion, and critique. While some may object to “losing” two days of classroom experience each week, the time spent in planning and reflecting can also be instructive and productive, with proper guidance by supervising professors and dedicated host teachers. Even sacrificing a half-day of classroom time per week to have a period of reflection and discussion could pay great dividends.

4. Finally, it is essential that some degree of the mentoring and guidance provided to prospective teachers be non-evaluative. The mentoring studies cited in Chapter 2 – especially Abell, et al. (1995) – maintain that the most effective teacher mentoring takes place when the mentor is not in a position to evaluate the novice teacher. The reasons why can be seen in the openness of the correspondents in this study to sharing their experiences and feelings with me. I was not in authority over them, and thus not a “threat” to their career plans. They shared experiences and problems with me that they did not share with the supervising professor, the graduate student assistant, or their host teacher. Since all three of these individuals could cut short their future plans with a bad evaluation, the student teachers were very guarded around them. This diminished their effectiveness as mentors. It should be no surprise that so many of the student teachers praised their cohort members, family members, or other teachers as being helpful; such people were not in a position to evaluate their performance. To increase the effectiveness of preservice education, there needs to be less emphasis on evaluating student teachers, and more emphasis on assisting them. While some degree of evaluation is naturally needed, perhaps the host teacher could be relieved of evaluative duties, a strategy which would admittedly require a higher degree of involvement from university instructors. Alternatively, a fourth individual could be brought into the process to serve only as a mentor, sounding board, and guide.

As seen in Chapter 2, many of the proposed improvements that have grown out of this research project are already being implemented in programs considered on the

“cutting edge” of teacher education. But more change is needed, if the massive criticisms leveled against preservice education are to fade away.

Suggestions for future research

Hopefully, the results of this research project will provide fuel for the fires of reform, by showing the felt needs of preservice teachers in their words and through their eyes. Just as hopefully, this project will also inspire future qualitative research into the “lived reality” of teachers. Below are some possible avenues of research that could be pursued in the future:

- The current study is limited by its time frame, following most of the prospective teachers only through their student teaching semester, and only following one as far as the end of the first year. Yet the research reveals that the needs and attitudes of teachers continue to evolve for their entire careers. It would be very interesting to follow a group of teachers over a longer period of time, from student teaching to around their fifth or sixth year of teaching and even beyond, to see how they view their preservice education with the perspective of experience. Such a project would be challenging, but could provide very worthwhile longitudinal information.
- One of the more surprising results of this study was the array of bad (occasionally even traumatic) experiences that all but one of the prospective teachers had with their cooperating host teachers during their student teaching period. Every story has at least two sides, however, and it would be an interesting avenue of study to get the host teachers’ side of the student teaching experience. A parallel study of student teachers and their host teachers, with interviews of both parties and perhaps even classroom observation of mentoring interactions, would shed some light on this very complex relationship. University education professors could

also be included in such a study, to flesh out the mentoring relationship even more.

- Limiting the current study to only six participants admittedly limits its transferability to other situations and programs. While the information gleaned probes very deeply, the focus is narrow. It would be interesting to see if a broader spectrum of data could be gathered about the experiences of novice teachers, even if that broadening of participants must perforce result in a more shallow understanding. Perhaps a questionnaire, similar to the “critical incident surveys” of Brookfield (1986, 1995), could be given to a large number of new teachers, to discover certain aspects of their experiences in a less time-intensive manner than an interview. Even more comprehensively, teachers at all level of experience could be surveyed, to gain insight into how teachers’ opinions of their preservice education evolves with time and experience.
- As noted in the literature, there are a number of innovative teacher education programs that have developed in recent years. Such programs have been focusing on providing more field experiences, more opportunities to reflect on experiences, and more effort to integrate various elements of the program. It would be interesting to perform a study similar to this one with student teachers in such a program, to see if the novices’ experiences and attitudes are any different in the different program.
- It would also be interesting, once enough data is available, to see if the graduates of new programs that incorporate some of the suggestions that arise from this research and projects like it are any more successful than graduates of traditional programs. A number of measures of success could

be employed: retention in the profession, job satisfaction, development of skills and attitudes, student performance, and so on.

More information is needed about the lives and experiences of novice teachers, if attempts to improve teacher preparation are to have hope of success. It will not be easy to change preservice education for the better, nor will it be cheap, but few worthwhile enterprises are easy or cheap. As a conclusion, below is an admonition from the quotable Derek:

Now maybe that'll cost a lot of money, but let's put it this way: the current system isn't cheap, and it is wasting everybody's time, in my ever so humble opinion.