New Applications for Multimedia Cases: Promoting Reflective Practice in Pre-service Teacher Education.

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In recent years, there has been growing interest in the use of multimedia cases for the purposes of pre-service teacher preparation. Case-based learning typically involves an analysis of a teaching scenario followed by a discussion of issues that emerge. While this kind of activity is consistent with theories of situated learning and social constructivism, it usually casts the pre-service teacher in the role of a detached observer who studies and critiques some aspect of another teacher’s lesson. It is proposed that it may be advantageous to personalize case methods by focusing pre-service teachers more directly on their own pedagogical decision-making processes. This paper describes an innovative study in which teacher candidates’ immediate reactions to videotaped teaching scenarios were recorded and made the subject of personal and group analyses. Results from the research suggest that this approach has the potential to help candidates develop deeper insights into their own classroom practice.
Korthagen and Kessels (1999) argue that one of the central problems with teacher education is that the theoretical body of knowledge taught in schools of education is not the kind of knowledge that teachers draw upon while teaching. For the most part, teacher education programs emphasize knowledge that is abstract, systematized, and independent of specific instructional settings. Unfortunately, this kind of knowledge does not readily come to mind during classroom practice. Teachers are constantly immersed in complex situations in which they need quick, concrete answers to a wide range of pressing problems. In such circumstances, the decisions they make are rarely the product of careful deliberation or the judicious weighing of educational principles, constructivist or otherwise. Instead, decisions are often based on split-second product of emotion, needs, values, habit, and a sense of the affordances and constraints of a situation. While on some occasions it may be possible to reflect briefly in the midst of acting (“reflection-in-action”; Schön, 1987), most teacher behavior during a lesson appears to be driven by the instructor’s immediate personal perceptions (Korthagen & Kessels, 1999). Decisions are often made automatically in reaction to the situation-at-hand.

Given the “in action” realities of teaching, Schön (1987) recommends that schools of education redesign their programs to help new teachers more deeply reflect upon their own classroom behaviors and their reactions to teaching situations. Accordingly, this paper describes a professional development activity in which teacher candidates respond quickly to authentic instructional scenarios, and then analyze their responses in small groups. The activity is organized around a multimedia case study of an elementary science lesson. On four occasions while viewing the lesson, the candidates are asked to describe, as quickly as possible, how they would personally respond to the situation facing the on-screen teacher. They are to do this without consulting others, and with minimal reflection. Once these initial reactions are recorded, the pre-service teachers meet in small groups to discuss the relative strengths and weaknesses of their responses. During this phase of the activity, the learners can construct, or co-construct, new responses to replace their initial intuitive ones. The intent of the exercise is to help teacher candidates develop a deeper awareness of their own reactions to real-life instructional scenarios and to encourage them to consider alternative instructional strategies.

The following questions guided the research:

1. To what extent do pre-service teachers feel they have time to think about the decisions they make while teaching? Do they feel they have time to reflect on the problems that they encounter?
2. To what extent, and in what ways, do pre-service teachers modify their immediate personal responses to the case teaching scenarios after reflection and discussion?
3. To what extent do pre-service teachers feel this exercise was useful in terms of their professional development?

NEW APPLICATIONS FOR MULTIMEDIA CASES

Korthagen (1993) uses the term “Gestalt” to refer to the dynamic juxtaposition of perceptual influences that people rely upon to create meaning out of complex situations. The notion of Gestalts is closely related to the Heideggerian notion of being-in-the-world. Winograd and Flores (1987) use the Heideggerian term “thrownness” to describe the notion of acting in settings where events are continually shifting and there are few opportunities to reflect:

We do at times engage in conscious reflection and systematic thought, but these are secondary to the pre-reflective experience of being thrown in a situation in which we are always already acting. We are always engaged in acting within a
Consequently, some contemporary studies of teacher cognition reject the assumption that practicing teachers can be detached, theoretically grounded decision-makers (Clark, 1986). Instead, a teacher’s behavior is heavily influenced by his or her Gestalts—holistic in-action perceptions produced through the ongoing interplay of social, cultural, situational, and psychological factors. However, Korthagen and Kessels (1999) suggest that teachers may be able to change their Gestalts by reflecting on them and developing schemata (i.e., conscious mental frameworks) and ultimately theories of pedagogy that become gradually internalized.

Given these insights into the process of teaching, many schools of education have responded by looking for better ways to tie instructional theory to the kind of messy, complicated activity that goes on in everyday classrooms. Often, this simply involves creating assignments for pre-service teachers to carry out during field experiences. However, other more creative techniques are also being explored. Video-based case methods have attracted considerable interest (Bencze, Hewitt, & Pedretti, 2001; Colburn & Tillotson, 1998; Harrington, 1995; Koballa & Tippins, 2000; Levin, 1995; Louden & Wallace, 1996; Tobin & Fraser, 1989) because they can present teaching episodes in rich, authentic, real-life settings (Carter, 1993). Through video, teacher candidates can examine in detail the planning of a lesson, its delivery, and the reactions of both teacher and students as the lesson unfolds. Video-based cases can also expose pre-service teachers to alternative practices—practices that they may not encounter during their field experiences (Marx, Blumenfeld, Krajcik, & Soloway, 1998). In these and other ways, case methods provide schools of education with a potentially useful means of moving beyond the transmission of decontextualized heuristics and prescriptions.

Unfortunately, video-based case methods suffer from a number of limitations. Video is intrinsically a passive medium. Simply observing a teaching episode is not likely, in itself, to effect a great deal of change in pre-service teacher beliefs or practices. Consequently, video cases tend to be used in conjunction with activities that engage pre-service teachers in analysis, personal reflection, and group discourse (Copeland and Decker, 1996). For example, teacher candidates may be prompted to focus on a key issue, or debate the effectiveness of on-screen teaching strategies. However, even in situations in which learners are actively engaged in this manner, the effect of video case methods is unclear. Viewing video lessons or discussing a controversial issue does not necessarily challenge pre-service teachers to confront and analyze their own pedagogical practices. Indeed, the first hurdle is often one of just becoming aware of what one’s own practices (and associated beliefs) really are (Abell, Bryan, & Anderson, 1998).

In an attempt to better focus new teachers on the choices that they make in instructional situations, a qualitatively different kind of multimedia case has been developed, one in which pre-service teacher decisions are the explicit topic of analysis. What distinguishes this research from other dilemma-based and decision-based case methods (e.g., Harrington, 1995) is the effort to tap into pre-service teachers’ immediate personal reactions to a teaching situation. The goal is to help foster a habit of praxis (i.e., critical reflective practice) by raising their awareness of their intuitive responses and challenging them to improve those responses through analysis and reflection. This approach is consistent with Fosnot’s (1989) mentoring strategy for pre-service education and Bencze’s (2000) pedagogical thinking cycle.

**DESIGN AND PROCEDURE**

Two classes of Primary-Junior pre-service teachers at the University of Toronto participated in this study. Several individuals were absent in each class, yielding a final participant count of 40. Both classes were part of a one-year, post-baccalaureate teacher education program. The case was administered after their first four-week practicum.
experience, but prior to their second practicum experience. Each participant spent approximately two hours on task.

The multimedia presentation contained a series of video vignettes that collectively depicted an innovative third grade science lesson on the topic of photosynthesis. The on-screen instructor was in her first year of teaching. Her objectives for the lesson were ambitious, but in keeping with the third grade Ontario Science and Technology curriculum: she wanted students to learn that plants create their own food out of water and carbon dioxide, and that this process yields oxygen as a byproduct. The lesson was divided into three parts: a 10-minute class discussion, followed by twenty minutes of hands-on small group activity, and finally, a 5-minute class debriefing. During the hands-on portion of the lesson, children constructed models of water and carbon dioxide molecules and then reassembled them into a simplified model of a sugar molecule. All groups completed the activity successfully, and all noticed that "oxygen was left over". The class discussion and the debriefing were filmed in their entirety. The recorded seatwork session contained some video segments of student discourse when the on-screen teacher was not present, and other segments in which the teacher counseled group members.

The multimedia presentation was organized around six gigabytes of high-quality (640x480) digital video divided into 26 video segments ranging from 30 seconds to four minutes in duration. The presentation also included a copy of the teacher's lesson plan, a copy of the activity sheets that were distributed to students, a textual description of the context and rationale for the lesson, and a number of still photos and videos depicting the classroom environment and student work. The organization of the online interface was straightforward (Fig. 1); the teacher candidates watched the lesson by clicking through the menu items on the left side of the screen, one at a time, starting at the top. On four occasions during the lesson, the video stopped at a point where the teacher was faced with an unexpected decision ("challenge"). When this happened, the pre-service teachers were asked to describe, as quickly as possible, how they would respond to the situation that the on-screen teacher was currently facing. In each case, the teacher candidates recorded their immediate reactions on a reflection sheet. They then moved into groups of two or three to compare their perspectives, discuss differing viewpoints, and if possible, improve their responses. Improved responses were recorded beneath the immediate reactions on the reflection sheet. The candidates were also permitted to play the video forward and observe how the on-screen teacher handled the situation. It should be emphasized, however, that the teacher’s approach was not presented as the "right" or "best" response. It was simply one of many alternatives and had to be weighed on its own merits.
All the challenges in the case study were authentic classroom problems that developed during the course of the lesson. All four incidents surprised the on-screen teacher when they occurred. They were selected because they represent the kinds of unexpected questions and problems that teachers typically encounter:

**Challenge 1.** The first on-screen challenge occurred during the initial class discussion. The teacher had just finished discussing the goals of the upcoming lesson when one of the students posed a question that seemed off-topic. It was not clear if the student had heard or understood what the teacher and her classmates had just been discussing. The teacher candidates were asked what they would do in this situation.

**Challenge 2:** The next challenge occurred a few minutes later when one of the students tried to catch the teacher’s attention by waving his hand frantically and making small distracting noises. At the time, the teacher was talking to the class about a previous experiment that they had conducted with bean plants, and she signaled to the anxious student that she would like him to wait until she was finished. When the teacher finally called upon him, he made an unusually advanced observation concerning chemical nomenclature -- an observation that some of the other students were unlikely to understand. This individual explained that the label H2O describes the molecular composition of water (i.e., water consists of two atoms of hydrogen and one atom of oxygen). Again, the teacher candidates were asked how they would respond to this situation.

**Challenge 3:** The third challenge occurred during the seatwork portion of the lesson. Three students were mid-way through a hands-on activity when one of them informed the
teacher that she did not understand why they had to break apart the water and carbon dioxide molecules after they had been constructed. The pre-service teachers were asked to respond to this concern.

**Challenge 4:** The fourth and final challenge took place during the wrap-up session after all of the groups had finished their seatwork. After reviewing the photosynthesis process, and speculating about the role of the leftover oxygen molecules ("Maybe they go into the air so we can breathe!"), one of the students asked the teacher about a previous class experiment involving the germination of bean seeds in a dark environment. How, the student inquired, could the seeds have sprouted in the dark without the light that photosynthesis requires?

The classroom teacher responded to each of these four situations with little or no hesitation. Only four challenges were included in the case materials because there were few other incidents in which the teacher was faced with an unexpected problem. Overall, her lesson flowed smoothly.

**DATA SOURCES**

The reflection sheets from the 40 teacher candidates served as one data source. Each reflection sheet contained four pairs of responses (one “reaction” and one “reflection” response per challenge). In addition, the discussions of three randomly selected groups from each class were videotaped and transcribed. Finally, at the end of the activity, all pre-service teachers completed a questionnaire in which they were asked to assess the effectiveness of the case method as a professional development tool. Additional written documentation was collected from the observations and field notes of the Principal Investigators.

The study’s data analysis technique followed the naturalistic research paradigm described by Lincoln and Guba (2000). Patterns surrounding the use of the case methodology emerged from the analysis of the data. Content analysis categories and themes were established through a process of negotiation involving two members of the research team.

**FINDINGS AND DISCUSSIONS**

**Research Question 1:** To what extent do pre-service teachers feel they have time to think about the decisions they make while teaching? Do they feel they have time to reflect on the problems that they encounter?

The pre-service teachers were asked to describe the extent to which they feel they can think about their actions as they teach. Schön (1983) refers to this as “reflection-in-action”, or the "capacity to respond to surprise through improvisation on the spot" (Schön, 1987 p. 2). This ability to 'think on your feet' is one of the qualities that Schön (1983) attributes to expert practitioners.

The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behavior. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation. (p. 68).

The response from the class was fairly uniform: most felt that it was important to work toward reflecting-in-action, but they found it could be a difficult process because of inexperience and time pressures. Some sample responses include:
“I try to think a lot about my classroom teaching decisions as I teach. I find this difficult at times when there are so many situations and questions coming at you. It helps to think beforehand about some questions or scenarios that might happen therefore making it easier to think about decisions as I am teaching.” (Respondent 1.03)

“I often question my reactions to student behavior or questions as I am teaching. Sometimes I find that I am so pre-occupied with keeping the lesson flowing and engaging the children that I have little time to reflect on my decisions until afterwards.” (Respondent 1.12)

“I might correct myself if I think I made a bad decision, but there is not a lot of chances to reflect while you are teaching.” (Respondent 1.19)

“I try to take a second to reflect, but sometimes reactions are too strong and too quickly at the surface.” (Respondent 1.21)

Some suggested that too much reflection-in-action could lead to indecision that could make matters worse:

“I do question my teaching decisions, while I teach to some extent. However, this often leads to a teacher manner that appears indecisive and lacking in confidence.” (Respondent 1.04)

“I think I have made it a habit to think about my classroom teaching decisions as I teach, but this can sometimes be distracting and disrupt the flow of a lesson, i.e., when you decide you are unhappy with a decision you tend to backtrack and cause a momentary upset in your lesson.” (Respondent 1.06)

“Sometimes I think that I have made a bad decision. Then I dwell on it and it can distract me or put me off for a moment.” (Respondent 1.09)

All of the teacher candidates claimed to reflect on their practice after teaching. Schön (1983) refers to this as reflection-on-action. Often they discussed their lesson with their faculty supervisor or their associate teacher. Some maintained a teaching log. Implicit in most responses was the notion that it is important to focus on the troublesome parts of instruction so that problems can be diagnosed and performance can improve over time.

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"After each day, I believe it is important to evaluate the day’s progress. Establish what you could of improved on and what you should be aware of.” (Respondent 1.01)

“I think a lot about my teaching decision after I teach. I always go back over what decisions I have made and how I could have made them better.” (Respondent 1.03)

“I do think about my decisions more after I teach, particularly if I think that my lesson did not go as smoothly as I had hoped.” (Respondent 1.12)

There was also a general recognition that teachers act in-the-moment in the kind of “thrownness” that Winograd and Flores (1987) describe. Consequently, it is easy to make mistakes:

“This doesn’t mean that I always make the correct decisions. The limited amount of time to think always forces you to make a decision without knowing if it is a good one. I believe that you became better at making classroom decisions as you teach with, in other words, with experience. One has to be in the situation often enough to know how to best handle it.” (Respondent 1.05)
“I feel that I’m put on the spot and have to respond pretty quickly, so I don’t always wait to think through fully before I answer. I feel rushed so I answer the best I can under pressure. Usually afterwards I am able to think of better ways to have handled the situation.” (Respondent 1.10)

To summarize, a prevailing theme in the teacher candidate responses was the notion that they frequently think about their lesson after it is over, but have difficulty reflecting-in-action. Given their lack of experience in the classroom, this is probably an accurate self-assessment. Many new teachers undoubtedly feel preoccupied with the complexities of lesson delivery, and have little time to weigh alternatives when faced with an unexpected event. As some people pointed out, too much reflection during a lesson might worsen matters by making the teacher appear indecisive in front of the students.

**Research Question 2:** To what extent, and in what ways, do pre-service teachers modify their immediate personal responses to teaching scenarios after reflection and discussion?

The reflection sheets were examined to determine the extent to which pre-service teachers modified their initial reactions after discussing the situation with their peers. Three categories of transformation were established:

1. **No Change:** The pre-service teacher response remains relatively unchanged after discussion and reflection.

2. **Modification:** The pre-service teacher response remains fundamentally the same but the response is refined with additional material or caveats. Example: One pre-service teacher’s immediate reaction to the first challenge was to reply to the student, “Yes, but this is how plants make sugar.” After reflection and discussion, she decided to clarify her response: “Yes, we are going to review that and expand it to include how the plant uses the water to make sugar.”

3. **Re-invention:** The pre-service teacher abandons his or her immediate response and takes a completely different approach. Example: One pre-service teacher’s immediate reaction to the third challenge was to reply to the student as follows: "We made them <the molecules> in order to recreate the process in which plants make food, which is sugar. Each one of these water and carbon molecules are separate. When heated, they join to make sugar." After reflection and discussion, she decided a better course of action would be to “wait to see if her friend responds or to redirect the question <to one of the other students in the group>.”

The results of this analysis are summarized in Table 1. In a few instances, pre-service teachers failed to record either their initial reaction or their response after reflection. These missing data are listed in Table 1 as Non-Responses. Subsequent analysis revealed that non-responses were caused by a number of different factors. Three of the non-responses to Challenge 4 were due to lack of time. One group had not completed their Challenge 4 discussions when the trial ended. Another six of the non-responses (one in Challenge 2, one in Challenge 3 and four in Challenge 4) were due to a perceived lack of information. In particular, some teacher candidates felt that they did not understand the process of photosynthesis well enough to construct a response to Challenge 4. The remaining five non-responses (three in Challenge 2, one in Challenge 3 and one in Challenge 4) remain unexplained. The candidates did not provide a rationale for the missing data.

In each of the four challenges, the majority of teacher candidates (70% to 80%) either made modifications to their immediate response or re-invented their response entirely after group discussion. A substantial percentage of the candidates (ranging from 38.9% to 75.0% across the four challenges) abandoned their initial response altogether after debating alternative strategies with peers.
Table 1. Degree of Transformation in Teacher Candidate Responses after Reflection

<table>
<thead>
<tr>
<th></th>
<th>Challenge 1</th>
<th>Challenge 2</th>
<th>Challenge 3</th>
<th>Challenge 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Change</td>
<td>9 (22.5%)</td>
<td>11 (30.6%)</td>
<td>4 (10.5%)</td>
<td>7 (21.9%)</td>
</tr>
<tr>
<td>Modification</td>
<td>15 (37.5%)</td>
<td>11 (30.6%)</td>
<td>12 (31.6%)</td>
<td>1 (3.1%)</td>
</tr>
<tr>
<td>Re-Invention</td>
<td>16 (40.0%)</td>
<td>14 (38.9%)</td>
<td>22 (57.9%)</td>
<td>24 (75.0%)</td>
</tr>
<tr>
<td></td>
<td>40 (100%)</td>
<td>36 (100%)</td>
<td>38 (100%)</td>
<td>32 (100%)</td>
</tr>
<tr>
<td>Non-Responses</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

Analysis of Re-Invention Category

Each of the re-invented responses (76 in total) was compared to its original, immediate response in an attempt to better understand the nature of the transformation. Analysis of the data yielded the following categories, displayed in order of frequency:

1. Changes involving the creation of a new explanation (38.2%): In many cases, teacher candidates’ immediate reaction to a challenge was to respond with an explanation. This was particularly common in the first, third and fourth challenges, which were framed as student questions to the teacher. After reflection and discussion, many candidates decided to replace their old explanation with a new one. For example, one teacher candidate’s initial reaction to the fourth challenge was to respond by saying, “The bean is in the ground (it hasn't come out yet) so it doesn't need the sun to grow.” After discussion and deliberation, the candidate created a new explanation, one that offered more information: “The bean has stored energy -- once it's out of the ground, it develops leaves and uses the sun to grow.” A few of the revised explanations contained metaphors or examples intended to clarify issues that the teacher candidates thought might be confusing to students.

2. Changes involving a re-direction of the original query (34.2%): As mentioned previously, teacher candidates typically reacted to a student query by responding to it directly with an explanation. However, after reflection and discussion, some abandoned this approach in favour of re-directing the query, either back to the student who asked it (i.e., "That's a good question. What do you think?") or to the class in general (i.e., "Can anyone answer Andrea's question?"). Re-direction revisions were developed more frequently in response to the third and fourth challenges. It is proposed that these challenges were more conducive to re-direction strategies since they both required the teacher to address a question from a student. In contrast, re-direction would tend to be a less effective teacher response when dealing with an off-topic question (Challenge 1) or when acknowledging a student’s interesting discovery (Challenge 2).

3. Changes relating to the pace of the lesson (19.7%): Some changes appeared to be associated with a need to keep the lesson flowing and not be sidetracked. For example, a statement such as, “Good observation, we’ll look at that more closely after we do the next exercise,” suggests a desire to keep the lesson focused on the teacher’s instructional objectives. These kinds of revisions were more frequent during the first two challenges than the latter two. This is perhaps not surprising, since the first two challenges took place during the teacher’s presentation of the lesson, when timing was a greater concern. In contrast, the third and fourth challenges occurred during the small-group seatwork activities and the lesson wrap-up, respectfully, when the time pressures were less severe.

4. Changes relating to classroom management (6.6%): In the case of the second challenge in particular, some teacher candidates felt that classroom management was a more pressing issue than the content of the student’s discovery. The boy who shared his discovery had been waving his hand excitedly and making distracting noises in an effort...
to capture the teacher’s attention while she was teaching her lesson. After reflecting on
the situation and replaying the video, a small number of teacher candidates thought that it
would be more appropriate to address the student’s behavior first, and his discovery
second. This focus on classroom management surprised the research team, since the
child’s behavior did not appear to be particularly problematic and his observation about
chemical nomenclature was unusually advanced. It is possible that their response reflects
sensitivity to student behavior patterns. Classroom management tends to be one of the
more pressing concerns of novice instructors, and this may subtly affect how the teacher
candidates interpreted and assigned value to events in a case study video.

To summarize, in over 70% of the cases, pre-service teachers either modified or
re-invented their immediate personal responses after conversing with their peers. Group
discussion brought new considerations to the attention of many pre-service teachers,
including timing issues, classroom management concerns, and the possibility of turning
problems back to students.

Future studies are planned that will extend the aforementioned activity by
focusing pre-service teachers on the differences between their immediate responses and
their responses after reflection. Through this kind of analysis, it may be possible for
teacher candidates to develop deeper insights into their own instructional practice. In
particular, it is hoped that they will develop a better sense of how they tend to react to
certain classroom situations and how those reactions differ from the kinds of responses
they generate when they have time to reflect and talk with others.

**Research Question 3:** To what extent do pre-service teachers feel this exercise was useful
in terms of their professional development?

Almost all of the pre-service teachers felt that the activity was professionally
valuable. Most suggested that it increased their awareness of their own reactions to
teaching situations:

“I think we are learning how to treat students and create a caring classroom
environment, but today’s activity made us more aware of ourselves and our
reactions.” (Respondent 1.14)

“I think today’s exercise is really helpful in training teachers to have better
reactions i.e., giving teachers scenarios and asking them what they would do. It
trains teachers to react appropriately and also gives them a pool of scenarios
and responses to store in their memory and refer to when similar situations
arise.” (Respondent 1.23)

Other felt that the activity highlighted the benefits of sharing one’s reactions
with fellow teachers:

“Very useful, allows us to see how a teacher thinks, how we think, how the
partner and to see differences or how common we as educators think about a
particular theory or subject. Good for reflections and getting ideas. Exercise
was very useful and necessary.” (Respondent 2.10)

“I enjoyed this activity that we did today. It allowed me to think of my
decisions and obtain an immediate chance to collaborate with my colleagues. I
wish to have more opportunities such as this.” (Respondent 2.01)

In addition to the 40 students who took part in the exercise, one other teacher
candidate viewed the case study. However, this particular individual arrived late, well
after the other groups had begun examining the case. Not wanting to disturb her
classmates, she asked if she could work through the activity without a partner. This
request was granted; consequently, she was the only teacher candidate to view the case
materials alone. Since the circumstances of her participation were significantly different
from those of her classmates, her responses on the reflection sheet were not included in
the main data analysis (i.e., Table 1). Nevertheless, her thoughts about the case study
activity were interesting. She was the only teacher candidate in either class who reported
that it had not been a useful learning experience. When asked if the exercise had been
valuable or not, she responded,

“Unfortunately, not much… It <the exercise> makes some a little more aware
that they may react spontaneously in teaching a class, but I believe that the best
method for learning is experience! Trial and error has to be a teacher’s best
friend.” (Respondent 2.16)

This person's reflection sheet showed no differences between her immediate
reactions and her reflections. When asked in a follow-up interview to pinpoint the source
of her dissatisfaction, she hypothesized that much of the value of the exercise might have
come from comparing one's instantaneous reactions to those of other candidates, and then
exploring the reasons for the differences. Since she did not have a partner, she missed the
benefits that others enjoyed.

CONCLUSIONS

The preceding case study methodology represents a departure from the way that
case studies are traditionally used in pre-service education. The purpose of the case was
not to showcase exemplary teaching, nor was the intent to pose classic instructional
dilemmas for the candidates to analyze and solve. Rather the goal was to elicit candidate
reactions to common, everyday teaching situations and then to explore how those
responses might be improved through discussion and reflection. The results of the
analysis suggest that this instructional approach was beneficial in several respects. First,
it encouraged pre-service teachers to talk about teaching in terms of the moment-by-
moment decisions that practitioners make in classrooms. Too often, teacher education
programs neglect the situated, “in action” reality of classroom instruction, choosing
instead to focus on theory and decontextualized pedagogies. Second, the case study
approach made it apparent to pre-service teachers that their immediate reactions to
classroom situations are not always ideal. After reflection and discussion, many found
themselves discarding their intuitive responses in favor of a different course of action.
Finally, the case activity highlighted the advantages of discussing teaching practice with
other teachers. Some pre-service teachers were surprised to discover that their colleagues
did not react to the four challenges in the same way that they did.

Although the interactive case-based approach appeared to be effective in terms
of encouraging pre-service teacher introspection, it is important to note the limitations of
such methodologies. While the pre-service teachers could respond to the on-screen
challenges, they were unable to see how their responses would have actually played out.
They could only speculate about the relative effectiveness of different instructional
interventions. In addition, the case challenges were constraining in the sense that they
prompted teacher candidates for a single response to a particular situation. In real life,
teacher-student interactions often involve a series of connected exchanges in which the
instructor can gently probe a problematic situation before committing to a course of
action. One of the limitations of interactive case studies is that they cannot easily or
accurately replicate the dynamic nature of classroom interaction.

In spite of the aforementioned limitations, interactive multimedia case studies
appear to be successful in terms of fostering introspective analysis and discourse about
teaching practice. Another less obvious benefit of this approach is that it subtly shifts the
focus of learner attention away from the performance of the on-screen teacher. One
problem with conventional multimedia case studies is that they place the on-screen
teacher under a tremendous amount of scrutiny. Viewers of video cases can replay
segments at their leisure and analyze conversations, facial expressions, and body
language in depth. This raises ethical dilemmas for producers of multimedia materials since a case study can easily degenerate into a game of second guessing the on-screen teacher's decisions. Every misspoken word, every hesitation, and every missed opportunity provides viewers with an opportunity to criticize. Interactive cases, in comparison, focus most of the learners' attention on their own reactions to situations. In the preceding study, there was little criticism of the on-screen teacher's actions. While this may be due to the superior quality of her lesson, it is proposed that the interactive nature of the activity may have also fostered a sense of respect for her efforts. The teacher candidates recognized that she was responding to the same challenges as they were, and within a similarly restrictive time frame. Thus, by making the viewer's own responses the subject of analysis, criticism tended to be directed inwards rather than at the teacher.

In summary, the findings of this study support the claim that case methods can be tailored to engage pre-service teachers more personally than they have in previous research. By projecting their immediate responses onto those of the situation, and making those responses a subject of analysis, teacher candidates can potentially develop deeper insights into their own practice and the complex nature of teaching. While case-based activities of this sort cannot replace reflections on actual action, it is our hope that they will inspire habits of praxis that pre-service teachers will carry with them into the classroom.

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REFERENCES


