Inspiring Meaningful Reflection in Preservice Teachers

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As students reflect, they connect theory with practice. This is one of the primary goals of a teacher preparation program.

BACKGROUND

Methods of Teaching Physical Education ("Methods") is a required course for students seeking health and physical education teacher licensure. It is taken during the spring semester of their junior year. In the pilot study semesters, Fall 2004 and Spring 2005, there were nine and five students enrolled respectively. For the current study (Spring 2006), 12 students were enrolled. "Methods" is the first course in a two-course series formerly titled, Instruction and Curriculum I & II (HSES 320 & 410). "Methods" focuses on daily instructional skills, and its purpose is to prepare preservice teachers to design effective programs and assess progress toward program goals and national standards. "Methods" is designed to develop effective teaching skills (managerial, instructional, and interpersonal) that will enable students to create a classroom environment where learning takes place. Students systematically learn skills and then apply them in a variety of laboratory experiences. As stated on the course syllabus, the objectives are as follows:

Upon completion of this course, the student should be able to:

1. Demonstrate knowledge of effective teaching strategies in physical education.
2. Successfully implement effective teaching skills in a peer teaching situation and at a local school.
3. Reflect upon and assess his/her teaching skills and develop a plan for improvement.

Further, "Methods" is designed to enable students to:

1. Gain knowledge through readings, discussion, and the observation of teacher and student behaviors (live and on video).
2. Develop skills through laboratory experiences in which they practice selected teaching behaviors.
3. Reflect upon the quality of their skills and their ability to use them appropriately.

"Methods" utilizes readings, discussion, and videotaped teaching examples to introduce effective teaching skills, such as giving demonstrations, making clear task statements, providing active supervision and feedback, and bringing a lesson to closure. Students practice these skills in a series of lab experiences in which they participate in peer teaching episodes of one to eight minutes in length. During the last month of the course, each student teaches a full 40-minute lesson at a local elementary school. The lesson is videotaped, and they use the tape to conduct a systematic analysis of their own teaching as well as a reflection on their managerial, instructional, and interpersonal skills. Up until Fall 2004, this had been their only mandatory reflective assignment in the course. Several semesters of students' comments consistently indicated that the videotape analysis was a tremendously revealing and helpful experience.

Although I was pleased by the students' reaction to the mandatory analysis and reflection at the end of the course, I preferred that they engage in reflection throughout the semester. In Fall 2003, I attempted to encourage reflection on their performance in one of several peer-teaching episodes. I gave them an ungraded assignment in which they were asked to reflect upon the data they received from a peer observer. For the most part, I found their responses to be thin, lacking the depth of thought that I expect to see in any thinking teacher who desires to improve his or her skills.

Following that experience, I decided to encourage focused reflection after at least four of the six peer-teaching episodes. But before I assigned additional reflective exercises, I wanted to determine whether the peer-generated feedback was sufficient, or whether a visual record of their performance might encourage more meaningful reflection.

Project Notes

Course Syllabus (see PDF)

Peer observation and feedback:
One unique feature of the course design is peer observation and feedback. The students are encouraged to treat the development of teaching skills as a cooperative process that includes freely giving and receiving constructive criticism. After each teaching episode, students received verbal feedback from the instructor and/or formal observational data and comments from a peer. Most often, students received a checklist that included effective teaching behaviors that were discussed in class. Peers would note whether or not they observed those behaviors in that particular teaching episode. Another type of peer-generated feedback provided a count of the number of feedback statements, along with information about its content, mode, and direction. One advantage of peer observation is that feedback is immediate and usually accompanied by the verbal comments of the observer. A disadvantage, however, is that the veracity of the feedback data depended upon the skill and care exhibited by the observer.

Visual recording:
Prior to Fall 2004, a visual record of teaching was provided after the final teaching assignment at an elementary school, but not after the six peer-teaching episodes. One advantage of a visual record is that it enabled the preservice teachers to see and hear their teaching behaviors. This feedback was not immediate, however, and its usefulness depended upon the students' desire to review and reflect upon their teaching.

Although my department owned 8mm and digital camcorders, the lessons were videotaped with a clunky, old-fashioned VHS camcorder because most students were unable to playback an 8mm or digital tape without the appropriate camera. I considered using digital video and converting it to DVD, but the process was too time-consuming. Because I loathed dragging around and setting up that clunky old camera, I didn't pursue the idea of providing a visual record after all six peer teaching episodes. In Spring 2004, a grant enabled me to purchase a DVD camcorder to record the students' teaching on a mini DVD. With the use of this camcorder, it became convenient to provide a visual record after each peer-teaching episode.

IMPLEMENTATION

In Fall 2004 (Pilot 1), the students participated in six peer-teaching labs. After four selected labs, they received either peer-generated feedback or a visual record of their teaching. Peer-generated feedback data came in two forms: a checklist that reported the teaching behaviors observed, or a coding sheet that provided a count of the preservice teacher's feedback statements, as well as their content, mode, and direction. The visual record was a DVD recording of the students' teaching. I assigned optional reflective exercises after the four peer-teaching labs. Students were asked to respond to two open-ended questions or prompts. The purpose of the first prompt was to jumpstart the reflective process with a general query. The second prompt asked them to think about their teaching skills and reflect on what they might do to improve them. For the first lab, half of the class received peer-generated feedback, and the other half received a visual record of their performance only. At the next lab, each group received the other type of feedback. By the end of the semester, most of the students had received equal amounts of both feedback types. I received two reflections under both conditions from five out of ten students. I examined them and attempted to determine whether reflections based upon visual record were more meaningful than those inspired by peer-generated feedback.

When I taught the course subsequently in Spring 2005 (Pilot 2), the students once again participated in six peer-teaching labs. Procedures in the first two labs were similar to Pilot 1, but later I found that modifications were necessary. Since there were only five students enrolled, it became inconvenient to pull one student out to serve as an observer, so I dropped that component of the project. Furthermore, the return rate for the reflective exercises was poor. In an effort to boost the return, I asked all of the students to use the checklist and the coding sheet to analyze their videos from the third and fourth labs. Due to the small class size, a 75-minute period often provided sufficient time for me to offer comments and lead a short discussion after each student completed a teaching episode. Unlike the previous semester, when students received a completed checklist and brief comments or a visual record, these students also experienced an instructor-led discussion of their teaching skills. I received one reflective response under both conditions from three out of five students.

After the pilot studies, I modified the procedures for my next project (Spring, 2006). First, I gave all of the students two sheets after each peer-teaching lab—the reflective prompts and the feedback checklist or coding sheet. Some students were observed by a peer; therefore, their checklist or coding sheet contained data and comments from an observer. Other students received a blank checklist or coding sheet, and they were free to use it to analyze their own performance while they watched their DVD. This provided all of the students the opportunity to use the checklist and coding sheet as prompts for reflection. Second, during the labs, I made no specific comments about anyone's teaching performance. As the instructor of this course, I certainly believe I should provide feedback on the students' performance. But after Pilot 2, I feared that the individual feedback I gave after each student's teaching episode might have become the subject of the students' reflection. In essence, they might have been substituting my reflections for their own. Therefore, in the current reflective study, I held all comments until all of the teaching episodes were complete, and then I blanketed the students with thoughts and concepts related to the lab. It was my hope that they would consider all of my comments, then choose and reflect upon those that related to their performance.

I also modified procedures for data analysis in the current study. In the pilots, my analysis was primarily observational. Although I did compare the length of statements under both feedback conditions, for the most part, I merely took note of the types of reflective statements made by the students. For the current reflective study, data analysis was largely evaluative. I designed a rubric to enable me to assess the quality of the reflective statements. The data were used to categorize individual reflections into one of three hierarchical reflective groups—advanced, intermediate, and novice. Responses were analyzed for length, breadth, accuracy, and depth. Length was included as a general descriptor. Breadth scored the number of topics to which the students referred in their reflection. Accuracy indicated whether or not a teaching concept was referenced correctly. Both breadth and accuracy were weighted more heavily than length, because they are both indicators of the students' knowledge and understanding of the theory they should have learned in this course. The most heavily weighted category was depth, because it indicated whether students penetrated beyond vague conceptual statements to make real connections between learned theory and their performance. After evaluating all of the students' statements, I determined which type of feedback generated more advanced and intermediate reflections. Furthermore, I gave each student an overall rating of their reflective skills. As a final assessment, I asked the students to tell me which type of feedback inspired them to reflect more deeply about their teaching.

Project Notes

See PDF or doc files:
1. Reflective prompts
2. Skill demonstration and guided practice worksheet
3. Practice task demonstration and organizing for independent practice worksheet
4. Effective task communication worksheet
5. Feedback coding sheet
6. Reflection rubric

STUDENT PERFORMANCE

Current Reflective Study

In the current reflective study (Spring, 2006), there were twelve students enrolled, including two graduate students who were seeking teacher certification. All but one student submitted four reflections—two based upon peer-generated feedback and two based upon visual record. Using a reflection rubric, individual ratings for each reflection were averaged to provide an overall rating of each student's reflective skills. After evaluating all of the students' responses, the reflective skills of the students were distributed normally; two students were rated as novice (16.7%), eight were intermediate (66.6%), and two were at the advanced level (16.7%). Although a student was rated at a particular level, his/her individual reflections usually represented more than one level. For instance "KK," an intermediate student, wrote one advanced and three intermediate reflections. "GVR," wrote two novice and two intermediate reflections, but was categorized as novice. Below are examples of the three levels of reflection.

Novice – "Karen said I can better my performance by giving more exact feedback while teaching my lesson. Personally I feel I can improve by gaining more confidence in myself and what I am doing and I believe that will come with time." (DK)
This statement was rated as novice primarily because it focused on only one issue (breadth) and it merely restated the opinion of the peer, adding only vague language about improvement (depth). No connection was made to the student's performance. The statement could have been made without reflecting on the peer-generated feedback.

Intermediate – "My managerial task(s) could use work. I felt like I would disperse the group & then remember to tell them things. I need to make sure I go over everything before I disperse." (KK)
Although this statement received low ratings for length and breadth, it accurately referenced managerial theory (accuracy), and it was strongly related to the student's performance that day (depth).

Advanced – "I need to get closer to the students and teach with confidence & not shy away. I can do the relays in order & at the end do leap frog. That way they are already grouped the entire time & no time would have been lost. I need to start moving around randomly & not be so stationed." (LV)
This statement earned high marks in all four categories. The length was appropriate and the student addressed three conceptual issues accurately (breadth and accuracy). The reflection focused upon specific events, indicating a mental dissection of the elements of the teaching episode (depth). The statement also included an action plan for future improvement.

Novice, intermediate, and advanced reflections were generated by both types of feedback, but visual record inspired more intermediate reflections (59%) than peer-generated feedback (see Table 3). An equal number of advanced reflections were written based upon both feedback types. When advanced and intermediate reflections were combined, 56% of the reflections were based upon visual record. Peer-generated feedback was the source of nearly three-quarters of the novice reflections. These data led me to believe that a visual record is a useful tool in the effort to inspire meaningful reflection among my students.

As an additional assessment, I asked the students to tell me which of the two feedback types inspired them to reflect more deeply about their teaching. Eleven of 12 students responded that the visual record of their performance was more helpful. Then I asked them to articulate the value of each type of feedback. Their responses were as follows:

Values of Visual Record
1. Seeing is believing: Video allows self-examination; they do not have to rely on someone else's eyes and ears. (6 of 12; 50%)
2. Clarity: Video leads to greater understanding because it provides a picture that is clearer than a verbal description of their performance (4 of 12; 33%)
3. Repeated viewing: Video allows them to observe their own performance over and over. (4 of 12; 33%)
4. Rigorous self-assessment: Peers may be too "nice;" video allows them to conduct a more critical assessment of their teaching. (3 of 12; 25%)

5. Student perspective: Video allows the teacher to see what the student sees. (1 of 12; 8%)

Values of Peer-Generated Feedback
1. Extra eyes and ears: An outside observer will see things that the teacher might miss. (5 of 12; 42%)
2. Different perspective: The observer may provide a different perspective of the same aspect of the teaching performance. (3 of 12; 25%)
3. Qualified observers: Feedback from peers is trustworthy because they are knowledgeable of the assignment as well as the capabilities of the teacher. (2 of 12; 17%)
4. Encouragement: Peers provide immediate and personal encouragement following the teaching episode. (1 of 12; 8%)
5. Observer benefits: The observer benefits because they are able to reflect on the teaching concepts while watching a real model. (1 of 12; 8%)

Project Notes

Pilot Studies:
Specificity. In Pilots 1 and 2, I compiled and analyzed student responses from the second reflective question ("How can you do it better, or what steps will you take to improve?"). Responses from students who used a visual record appeared to be slightly more specific than those based upon peer-generated feedback. For example, most students commented on their verbal statements. Based upon peer-generated feedback, student reflections on verbal statements were general. For example: "I will continue working on using my words wisely and taking out tag words," or "I think improving voice quality will (be) a major influence on enthusiasm." Reflections based upon a visual record were often more detailed, listing the type and frequency of words they used or the quality of their voice. For example: "I will definitely say a different prompt besides 'good job' which I said about 10 times," or "I also have to make it a point not to mumble and project my voice." This indicates a close examination of their language that is not possible following a peer observation. They also made observations about their movements, such as "I was not moving around...," or I was trying to watch that ball." No reflections regarding movement were made by students after reviewing their peer-generated feedback.

Length. Data from Pilots 1 and 2 indicate that reflections based upon visual record were longer in length than those based upon peer-generated feedback. For the five Pilot 1 students who submitted two reflections under both conditions, four out of five wrote longer reflections after watching their videotaped performance. Reflections based upon peer-generated feedback averaged 33.8 words each, and those based upon visual record averaged 42.6 words each (see Table 1). Likewise, in Pilot 2, reflections based upon visual record were longer for two out of three students, and each reflection on peer-generated feedback and visual record averaged 58 and 67.7 words respectively (see Table 2). I concluded that reflections on the visual record were approximately one sentence longer than those based upon peer-generated feedback. My expectation was that there would have been a greater difference between the two.

One reason for the similarity in the length of Pilot 1 responses might have been the fact that when the students reflected upon peer-generated feedback, they received a checklist or coding sheet that had been completed by their peer. The checklist consisted of a list of teaching

behaviors that were observed by the peer. This list provided prompts for their reflection. However, when Pilot 1 students reflected on their visual record, they did not receive a checklist and had to generate responses without help. Even without prompts, however, some students were able to produce lengthy reflections, exhibiting knowledge and understanding of the skills and concepts learned throughout the course.

In Pilot 2, students received checklists after peer observation, and they also used the checklists when they viewed their DVD. It is difficult to draw conclusions in Pilot 2 because only three students submitted at least one reflection under both conditions. Furthermore, I believe their reflections were strongly influenced by my discussion of their performance after their teaching episode. It is unclear whether or not their reflections were truly based upon self-critique.

Content. In Pilot 1, future improvements were the focus of the majority of the reflective statements under conditions, peer-generated feedback (52.1%) and visual record (71.6%) (see Table 1). This was not surprising since future improvement was the focal point of the reflective question. Students generally listed the teaching aspects that they wanted to change. For example: "One thing I can do better is to slow down and think about what I am going to say." But I noticed a second type of statement—a critique of their performance. They would report the existence of a particular teaching behavior and include some type of self-assessment, such as: "I didn't do a very good job of specific feedback." The percentage of critiques was similar for both peer-generated feedback and visual record (20.7% and 17.1% respectively).

Occasionally, in a third type of statement, students would reference teaching concepts in their reflections. For example, "Using routines can save lots of time during managerial transitions." As their instructor, I was always gratified to read this type of response, because it was an indication of their knowledge and understanding of the theory I had taught in class. Peer-generated feedback produced more conceptual statements (14.5%) than the visual record (7.7%), again possibly because they received a checklist with the important teaching behaviors and concepts related to that teaching episode. The checklist provided “topics” on which they could comment in their reflection. It may have also generated the fourth and final type of statement which I call “shouldas.” These statements express regret regarding a particular teaching behavior. The student offers suggestions for what they "shoulda" done instead, such as: "I think I should have paid more attention to their practice and critique them or help them more." There was a higher percentage of “shouldas” in reflections based upon peer-generated feedback (12.7%) than visual record (3.5%). Possibly the checklist they received reminded them of all the points that they should have remembered while they were teaching.

In Pilot 2, approximately a third of the reflective statements made under both conditions focused on future improvements (see Table 2). But over half of the reflections based upon peer-generated feedback (58.6%) contained conceptual statements. Although I was pleased that my students accurately referenced theory in their reflections, I can’t ignore the fact that they were probably influenced by my discussion of their performance immediately after they completed their teaching episode. By the same token, I believe the high percentage of critique in the reflections based upon visual record (43.8%) was also influenced by my comments. As they watched their DVD, they were probably taking note of all the points I had raised in the discussion of their performance.

See PDF or doc files:
Student reflections Fall 2004 & Spring 2005
Student reflections Spring 2006
Student opinions about feedback

Table 1. Number of reflective words by category and feedback type
(Pilot 1—Fall 2004; five of nine students)

	Future improvements	Critiques	Conceptual statements	Shouldas	Total (10 reflections)	Avg
Peer-generated feedback (w/checklist or coding sheet)	176 (52.1%)	70 (20.7%)	49 (14.5%)	43 (12.7%)	338	33.8
Visual record only	305 (71.6%)	73 (17.1%)	33 (7.7%)	15 (3.5%)	426	42.6

Table 2. Number of reflective words by category and feedback type
(Pilot 2—Spring 2005; three of five students)

	Future improvements	Critiques	Conceptual statements	Shouldas	Total (3 reflections)	Avg
Peer-generated feedback (w/checklist) & discussion	65 (37.4%)	7 (4%)	102 (58.6%)		174	58
Visual record (w/checklist or coding sheet) & discussion	64 (31.5%)	89 (43.8%)	41 (20.2%)	9 (4.4%)	203	67.7

Table 3. Number of reflections by category and feedback type
(Reflective Study - Spring 2006; 12 students)

	# of Novice reflections	# of Intermediate reflections	# of Advanced reflections	# of Advanced & Intermediate reflections
Peer generated feedback (w/ checklist or coding sheet)	8 (73%)	9 (41%)	7 (50%)	16 (44%)
Visual record (w/ checklist or coding sheet)	3 (27%)	13 (59%)	7 (50%)	20 (56%)

REFLECTIONS

After the three semesters I've spent studying this topic, I have learned a great deal. My experiences have convinced me of the importance of reflection for preservice teachers. When students produce meaningful reflections, at that moment they make a connection between theory and practice that I can't make for them. Once that connection is made, they finally take ownership of the course content, and I know it will serve them long after they leave my classroom.

As a result of this project I will, first of all, continue to use visual records to inspire reflection in my students. Although the data pointed to the usefulness of video, the final comments of the students provided the evidence that convinced me. Their vote for visual records of their performance was overwhelming and I will continue to provide them for future classes. Second, I will provide peer observers for each teacher (as class size permits). There are benefits for both the teacher and the observer—the teacher receives an alternate perspective of their teaching, and the observer connects theory to practice in a live context. Finally, I will continue to hold my comments until the end of the lab. This helped to keep the pace of the lab brisk, and it compelled the students to tune into all of my feedback instead of tuning out while I critiqued an individual performance.

In the future, I may redesign the reflective prompts, providing more structure and guidance to help the students as they respond. The prompts for this project were purposefully vague because I wanted to see how students would respond without limits or standards. I've learned that for some students reflection must be taught. Therefore, I may implement a reflective model that requests a description, justification, and critique of meaningful class events. With new reflective prompts, I am obliged to create a new rubric so I can collect data as the students' reflective skills develop. Reflection is the focus of one of ten Initial Physical Education Standards from the National Association for Sport and Physical Education (NASPE) and the National Council for the Accreditation of Teacher Education (NCATE). Since the importance of reflection is recognized nationally, I hope to infuse reflection in all of our program's field experiences and encourage other teacher education faculty to emphasize reflection in their professional courses.