Professional Development Through Reflection: A Study of Pre-Service Teachers' Reflective Practice, 5(6)

Hui-Ju Huang

hhuang@mail.nwmissouri.edu
Northwest Missouri State University

Abstract

The study is an investigation of pre-service teachers' reflective practice in the context of their micro-teaching performance. Results showed that the content of participants' reflections focused on eight areas of teaching practice: (1) teacher characteristics (82%), (2) delivery of instruction (78%), (3) classroom interaction (40%), (4) subject content knowledge (25%), (5) questioning techniques (23%), (6) instructional aids (15%), (7) students (9%), and (8) general education issues (4%). The conclusions of the study point to the need for improvement on reflection contents and reflective thinking. The recommendation includes a discussion of a support system in the teacher education program to deliberately engage pre-service teachers in meaningful reflection.

Introduction

Reflection is a cornerstone of learning and of personal and professional development (Baird, 1993). Educators support a need for reflection in teacher education as a means of encouraging teachers to examine their beliefs about teaching and to use their knowledge to construct change in their practice (Calderhead, 1989; Clift, Houston, & Pugach, 1990). Dewey (1933) distinguished "reflective thinking" from other forms of thought by two characteristics: a state of doubt or hesitation in which thinking originates in the practice situation, and an act of inquiring to find materials that will resolve the doubt and dispose of the perplexity. Therefore, to be a teacher in Dewey's terms is to establish a reflective capacity and to become clear and articulate about one's intentions. Schön's two books *The Reflective Practitioner* (1983) and *Educating the Reflective Practitioner* (1987) have influenced educators' thinking about reflection. Schön endorses "reflection in action" as a process which requires practitioners to "remake their practice worlds," and "promote flexibility and creativity" (1987).

However, the capability of reflecting on teaching practice is not automatically subject to growth. The pre-service preparation must initiate the process of helping novices to learn knowledge and

skills of reflective practice. In order to develop a support system to cultivate pre-service teachers' reflective thinking, we have to understand how well pre-service teachers do reflection. In a review of teacher education literature, it is found that research has been focusing on the areas of socialization of teachers, the impact of particular programs, the effect of cooperating teachers and university supervisors, few studies have directly addressed what teachers know about their teaching practice (Carter, 1993). Lederman, Gess-Newsome and Zeidler (1993) noted, "With as many aspects of the classroom being dependent on the thoughts and actions of the teacher, it is amazing how few dealt with this issue." Britzman (2000) also stated that there is little understanding regarding how those trying to teach actually learn from their practices, their students, or their incidental anxieties made from acquiring experience. There is a need to emphasize the conception of teaching on teachers' cognition and mental work and to study teachers' thoughts and actions about their teaching practice, so we will be able to gain insights into teacher's professional development.

In an attempt to bridge such a gap, the current study investigated pre-service teachers' reflective practice in the context of their micro-teaching performance by analyzing the contents of reflection journals. The framework of reflection in this article is concerned with how teachers deliberately examine their situations, behavior, practices and effectiveness, so they will be able to create what Shulman (1987) describes as the "wisdom of practice" within the complex and dynamic world of teaching.

Methods

Forty-five secondary teacher education program students in a midwestern U.S. university participated in this study. During 1998 Fall semester, participants took a teaching techniques course soon after they completed a subject method course. The method course focused on the development of curriculum in a specific subject area. The goal of the teaching techniques course was to introduce a variety of teaching techniques and to provide students with an opportunity to practice teaching techniques in a micro-teaching setting.

Participants were required to develop lesson plans by applying various teaching techniques. Then they taught lessons to a small group of peer students in the micro-teaching lab. The presentations of lessons were video-taped. Peer students were asked to write anonymous comments on feedback sheets . The videotape, peer feedback, and instructor's comments were given to participants every time after completing micro-teaching. In addition, participants were required to keep journals to reflect on their own teaching performance. The content of reflection was suggested to include the writings of strength, weakness, and improvement.

Each participant presented five micro-teaching lessons and wrote five reflection journals. A total of 221 journal entries were collected. Initially, the content of each journal was analyzed and coded in three broad areas of teaching practice: the teacher, the student, and the curriculum/instruction. The area of "teacher" included the writings of personal features such as voice quality and attitude. The descriptions of the presentation of instructional materials were categorized in the area of "curriculum/instruction." The area of "students" concerned the writings of students' backgrounds and learning styles.

After a preliminary analysis, several specific themes emerged in the category of curriculum/instruction. Participants discussed how they presented instructional materials, the classroom interaction between each other, their subject content knowledge, how they asked peer students questions and the use of instructional aids. I thus expanded the category of curriculum and instruction to five specific areas, as mentioned above. In addition, a small amount of participants discussed general education issues such as, classroom management, evaluation, and micro-teaching experiences. Therefore, I will present and discuss pre-service teachers' reflection content in eight areas: (1) teacher characteristics, (2) delivery of instruction, (3) classroom interaction, (4) subject content knowledge, (5) questioning techniques, (6) instructional aids, (7) students, and (8) general education issues.

Results

The content of participants' reflection included a full spectrum of teaching issues and concerns in terms of eight areas, and the percentage of various areas is shown in Table 1.

Table 1. The content of pre-service teachers' reflection.

Content of reflection	Numbers of occurrence	% of journal writing that reflected the content (total journal entries collected = 221)
Teacher characteristics	181	82 %
Delivery of instruction	173	78 %
Classroom interaction	88	40 %
Subject content knowledge	56	25 %
Questioning techniques	50	23 %
Instructional aids	33	15 %
Knowledge of students	20	9 %
General education issues	9	4 %

Teacher Characteristics

The most frequently noted reflection focused on teachers' characteristics. Eighty-two percent of journal keepers wrote about teachers' voice quality, eye contact, attitude, non-verbal language, and other characteristics. The following quotes were taken from participants' journals:

1.
    1. Voice quality: "spoke clearly," "I said 'um' a couple of times," "voice a little sharp at beginning," and "don't mumble."
    2. Eye contact: "need to look at everyone to improve eye contact."
    3. Attitude: "comfortable in front of the class," "energetic," "confident," "enthusiastic," and "I fidgeted while they were writing down their thoughts."
    4. Non-verbal language: "get rid of funny hand gestures," "use hands too much," "stand in one spot too long."

A participant reflected extensively on her personal characteristics and wrote: (1) Strength of teaching: "I have a clear voice, I move around, I have good eye contact," (2) Weakness of teaching: "I move my arms too much – I don't know what to do with them, I talked kind of fast, shifted on my feet quite a bit," and (3) Improvement: "Move my hands less, try to concentrate on slowing down, stand more firm, but still move. Speak louder and not be afraid of saying something wrong as long as it is eventually corrected."

Delivery of Instruction

Another area participants commented on extensively was the delivery of instruction (78 %). The writings included introducing and ending lessons, explaining concepts, conducting discussion and other issues relating to the presentation of instructional materials. For example, a participant wrote about his strength: "I had a good intro and decent conclusion." Another wrote "I feel that I can communicate well and can make myself clear to the students." Some participants mentioned their ideas of improvement: "have a smooth transition," "I could have used better cue words and directional phrases to explain the concepts," and "… more points should have been emphasized with a better relationship between this activity and the rest of the lesson." Regarding the discussion lesson, several participants thought that they should "have more discussion," and "discuss in depth."

The following statements from a music education major demonstrated the typical reflection on the area of delivery of instruction:

Strength: "I showed a concise & clear 4/4 conducting pattern, and I used the step by step process."
Weakness: "I started with a concept that was too hard too fast."

Recommendation: "I need to realize that the students I am teaching don't have any clue what I am trying to teach. I have to start slower with easier topics and concepts- and then work to harder stuff." (Mike)

Classroom Interaction

An area common to the reflection was classroom interaction including teacher–student interactions and student–student interactions (40%). Some comments were: "I had good involvement of everyone involved. I made sure everyone in the group had a chance to speak," and "I called on different students." One participant wrote suggestions to herself: "be careful to react to students' opinion, let everyone have a chance to talk", and "let students work together and have them ask questions." Another stated that she needed to "bring out quiet people more, pull them out with subtle direction."

Subject Content Knowledge

The area of subject content knowledge was discussed in 25% of the reflection journals. The writing showed that participants were confident about their subject content knowledge. One stated: "my subject knowledge is good. [I am] very informative and knowledgeable on the topic, and able to point out specific things with the video that the students may not have paid attention to." Another said, "I thought I knew and understood the information and I knew what I wanted the students to get out of the lesson." The comment from an art education major ("I gave examples on how they can have a aesthetic experience of their own") suggested that the good understanding of content knowledge related to the ability of using examples. One participant pointed out the need of improvement on her content knowledge in terms of "technical vocabulary" and "being spontaneous with the use of it in proper context."

Questioning Techniques

Participants were often concerned with the questioning techniques (23%). Some typical comments were: "I definitely need to have some more questions developed to help lead students in the class discussion," "[I have to] go through more questions possibly." The reflection on this area contained three specific aspects: developing questions, asking questions/responding to students' answers, and wait time. The following quotes represent these three aspects of questioning techniques.

(1) Developing questions: "I know [I need to develop] good questions to probe higher level thinking." "I would have liked to develop questions, which will bring about deeper thinking and more class discussion." "I asked too many closed-ended questions. I could have asked more open-ended questions that do not have a specific answer." (2) Asking questions/responding to students' answers: "I asked questions to everybody and asked questions of their answers and I also used follow-up questions." "[I] need to ask if there are any questions throughout and not wait until the end [of the instruction]." "[Students'] responses to questions were praised and/or followed-up by related questions." (3) Wait time: three participants mentioned the concept of 'wait time'. One stated: "my largest weakness was that I didn't allow the students more time to think and answer the questions." The second example was: "[I] didn't give much wait time I or II." The third one wrote extensively: " I need to break that fear of 'empty silence' and not fill that in with an 'um' or breaking it with the next topic too quickly – because a student may have something valuable to say. Allow a longer wait time for students to answer questions or give opinions."

Instructional Aids

About 15% of reflection journals discussed the use of instructional aids such as chalk board, videotapes, and supplementary materials. Participants' comments included: "Make sure if I write the topic on the board and it is easy to read." "The video gave the teaching an exciting start to get students interested." "I turned my back completely when I wrote on the board."

Students

A small number of participants (9% of reflection journals) were concerned with students' background knowledge and needs. One participant wrote her strength: "I tried to explain the concepts in terms the students could understand. I truly listened to and considered students' answers, and tried to respond accordingly." Others talked about the improvement: "I need to be more aware of the needs of the students," and "Make sure to get all the students involved a bit more by asking questions to specific students."

General Education Issues

Since participants did not experience the actual classroom teaching in micro-teaching setting, not many reflected on issues of classroom management or evaluation. Sometimes peer students tried to act out rowdy, one participant reflected and wrote: "I didn't do much with behavior management when it started getting out of control" because "it is hard to take seriously since I know my peer students so well." Another participant mentioned a similar experience: "I maybe let the students go too wild! I would hope a situation would never get that bad. I probably didn't take the situation serious enough so that the classroom was a little more calm." Only one participant wrote about evaluation, and he thought that he should "evaluate all students while performing actions and give them more feedback."

Although most of the reflection content focused on issues of teaching and learning, six participants specifically discussed their micro-teaching experience. For example, one participant talked about her first micro-teaching presentation: "The camera made me more nervous than I thought it would." Another wrote in her fifth journal: "I am much more comfortable as a teacher now. I even forgot about being taped, I was so into the lesson." In general, participants had positive comments on micro-teaching experiences, such as "Micro-teaching gives us opportunity to put our teaching ability on film to review," "I felt challenged in the micro-teaching labs, but it was very educational and motivational for me."

Discussions and Implications

The capability of reflection is basic to teacher professionalism and needs to be a major disposition among those who are preparing to teach (Raines & Shadiow, 1995; Perrone & Traver, 1996). Micro-teaching lab is a simulated setting that allows pre-service teachers to experience teaching situations and to cultivate reflective thinking. Pre-service teachers are expected to give those situations careful and thoughtful consideration so they will be able to increase the understanding of teaching and learning.

The current study presented what and how pre-service teachers reflected on their micro-teaching. The results showed that participants' reflection contents were mostly at the level of reporting what occurred, rather than at a level of analyzing. The participants need to improve themselves in order to become critical and reflective teachers. The teacher-education program must offer pre-service teachers opportunities to promote the desired ability of meaningful reflection and to link reflection to pre-service teachers' professional development. The implications of the study include several suggestions: the need for improvement on reflection content, the need for improvement on reflective thinking and the need for compiling teaching portfolios and sharing reflection to engage pre-service teachers in meaningful reflection.

Improvement on Reflection Content

Teachers need to express feelings before any substantive analysis of the teaching can occur (Richert, 1993). The writing of reflection journals provides an opportunity for the expression of feelings and analysis of work. However, the simple guideline of writing strength, weakness, and improvement of teaching is not sufficient. Reflection on teaching practice does not occur in a vacuum but within broader issues of purposes, goals, values and constraints. A concrete conceptual guideline is needed for directing reflection. Teacher professional knowledge is a useful schema to help pre-service teachers expand their scope of reflection. Shulman (1987) identified seven types of teacher knowledge:

1.
    1. general pedagogical knowledge,
    2. content knowledge,
    3. curriculum knowledge,
    4. pedagogical content knowledge,
    5. knowledge of learners and their characteristics,
    6. knowledge of educational contexts ranging from the workings of the groups or classroom, the governance and financing of school districts to the character of communities and cultures, and
    7. knowledge of educational ends, purposes, and values, and the philosophical and historical grounds.

Among these categories, general pedagogical knowledge is of special interest to most participants of the current study. Participants reflected upon generic issues of general pedagogical knowledge, such as teacher characteristics, delivery of instruction, classroom interaction, questioning techniques, and instructional aids. In other words, they were concerned with questions such as "was the class under control?" and "did I move through the curriculum in a timely fashion?" This was probably due to the immediate demand of performing well. As a result, highlighting the immediate or pressing matters, such as what works and what doesn't work, or simply how to do things better were the kinds of issues that were prevalent in the reflection journals. However, participants proceeded without giving thoughtful consideration to other types of teacher knowledge.

Pre-service teachers should be encouraged to seek out who they are as educators and what their educational practice is grounded in. Their initial reflection on general pedagogical knowledge

needs to be connected with other types of teacher knowledge. For example, pre-service teachers have to reflect on how to develop curriculum out of particular subject matters with adaptation to the diverse interests and abilities of students. They need to ask themselves whether the instructional decisions are considered in light of the political and social conditions. They should write about how their teaching practice relates to normative questions about the purpose and goals of education.

Improvement on Reflective Thinking

In this study, one participant wrote what she did in the classroom and what she could improve: "I look nervous, but I don't feel nervous. I also go too fast sometimes. I think, from now on, I need to take my time and think more about what I am doing" (Carrie). Reading this statement, we may wonder about several questions. Why did this participant say, "I go too fast"? Did she simply mean that she talked fast? Did students tell her so? Or did she assume the content was easy to understand, so she went fast? If she needs to "take time and think more about what she is doing," then what will be specific strategies she may implement in order to improve her teaching? We worry that this participant might not be able to figure out a refined plan based on this level of thinking.

Other participants were also caught at a similar level of "common sense" thinking and they presented simple, layperson descriptions, or explanations with a tradition of personal preference given as the rationale. For example, one stated that "I had a lot of fun with this lesson, I think they (peer students) did too." Another wrote that "I think I could have developed the characters and setting a little bit more so there could have been a bit more in-depth role playing, and maybe role-play a scene myself to model the activity."

When William James (1983) lectured to Harvard's future teachers in 1899, he warned teachers against their habituated thinking, their automatic associations, their unconscious wishes, and what he called "a certain blindness in human beings." Initially, pre-service teachers may be unaccustomed to careful, thorough, and purposeful reflection on themselves or their teaching. They need to work on overcoming the limitations of experience and change their beliefs and practice. The process is labor-intensive and requires considerable reflection on practice, but, in doing so, they will develop a deeper understanding of teaching and learning. Therefore, they will be able to move from common-sense thinkers to reflective thinkers (Table 2).

Table 2. <u>Characteristics of common-sense thinkers & reflective thinkers</u>

Common sense thinkers	Reflective thinkers
Self-orientation	Student-orientation
Short-term view	Long-term view
Reliance on personal experience in learning to teach	Grounded in knowledge of self, children, and subject matter
Unaware of need to learn, feeling of already knowing much from having been in classrooms as a student	Open to learning, growth-oriented
Metaphor of teacher as transmitter	Metaphor of teacher as facilitator

A higher level reflective thinking requires the recasting of situations and identification of problematic issues at an initial step. For example, if the participant wrote, "I think I could have developed the characters and setting a little bit more so there could have been a bit more in depth role playing…", then he could provide a description of how role-playing activity occurred in the classroom and how students reacted to the activity, so he would be able to recognize what went wrong. Continuously, he needed to analyze situations and rethink the assumptions on which the initial understandings of a problematic issue were based. In conclusion, he had to develop a range of possible improvement ideas, and the suggestions should be constructive and practical so he would actually apply those ideas in the future. For example, he might write down the expectation of "in-depth role-playing", and design a plan to "develop the characters and setting a little bit more." Overall, the reflective thinking needs to be supported by explanations of educational principles or theory given as rationale, and with consideration of contextual factors, ethical, moral, and political issues.

A Support to Engage Pre-Service Teachers in Meaningful Reflection

Reflection is not just a point of view, but rather a process of deliberative examination of the interrelationship of ends, means, and contexts. Shulman (1986) identifies reflection as one stage of pedagogical reasoning. During this stage, teachers look back on their teaching. The process of "looking back" should be conceptualized as one of re-enactment, rather than just looking back to recall what occurred in the teaching episodes. The critical reflection of "looking back" requires skills that pre-service teachers may lack or may not develop fully. It is apparent that the participants in the current study need a strong support in developing reflective thinking and must be provided with opportunities for analyzing teaching.

Compiling teaching portfolios. Guba and Lincoln (1985) suggested that the reflection would be enhanced by having teachers establish an audit trail of their classroom experiences similar to the other kinds of audit trail, for example, that a series of architectural tracings would provide an architect, or case records would provide an attorney. Such an audit trail for pre-service teachers might take the form of a teaching portfolio. It may includes materials such as, micro-teaching

videotapes, lesson plans, peer feedback, and comments from the instructor or the supervisor. The portfolio will not only help them remember what occurred in the flurry of classroom action, but also focus their thinking by grounding their ideas in issues represented by the portfolio materials.

The content of most participants' reflection journals did not specifically relate to lesson plans, peer comments, nor describe teaching episodes out of videotapes. Pre-service teachers need to make the best use of portfolios when doing reflection. In the process of contemplating teaching practice, the initial response to the emotional content of the teaching should further link to particulars of practice, such as the characteristics of students, nature of the instructional task, and contextual constraints. For example, the participants could not simply say: "I had a lot of fun with this lesson, I think they (peer students) did too." What this participant could do is to re-examine her lesson plan and discuss how her instruction carried out the plan by referring to videotape or instructor's comments. She also needed to discuss students' reaction from videotape or quoted students' feedback to verify "students had fun."

By referring to portfolio materials, specific aspects of teaching practice are more likely to be identified and appropriate action could be decided upon. As pre-service teachers practice these processes, the focus of reflection will gradually turn toward a specific construction that assists in operating the nature of good teaching. Writing reflection journals thoughtfully will thus help underscore the coherence and continuity of an individual's experience.

Sharing reflection. The reflection content and level of thinking represent an individual's interpretation of roles and strategies available to him or her within the particular situation, and which may be generated as individual solutions to practical problems. Individual reflection may be more like personal interpretive hypotheses. It needs to be shared and negotiated with colleagues so teachers reinforce one another. The sharing of reflection gives pre-service teachers the opportunity to come together in collegial groups and reflect together in their work. Collaborative efforts are more powerful and will increase an individual's sense of satisfaction. A group of pre-service teachers can meet together to identify problems, share information and determine appropriate action regarding the "what,' "why," "how," and "how well" of teaching practice. It is important for pre-service teachers to generate and exchange different views in a group process and to envision concrete alternative courses of action if they are to become self-sustaining in reflective processes.

Conclusion

Thinking beyond doing challenges teachers to learn from a more deliberate wakefulness about how and why they teach as they do and then to use what they discover about themselves to benefit the students they teach. Encouraging pre-service teachers to do critical reflection is the best way to give them a true "voice" in their practice and to learn from those experiences. Facilitating the process of pre-service teachers' professional development requires the understanding of what and how they think about their teaching practice. Investigations like the current study provide a better understanding of pre-service teachers' reflection content and thinking skills. Such information should be integrated into the planning of teacher education programs. Necessary attitudes and resources, such as time for writing journals and compiling portfolios and collegial support for nurturing reflection are essential in teacher education

programs. With the support of the systematic nature of reflection, we thus facilitate pre-service teachers to grow as professionals.

References

Baird, J. R. (1993). Collaborative reflection, systematic inquiry, better teaching. In Russell, T. & Munby, H. (Eds.) Teachers and teaching: From classroom to reflection. New York: Falmer Press, Taylor & Francis Inc., 33-48

Britzman, D.P. (2000). Teacher education in the confusion of our times. Journal of Teacher Education, 51(3), 200-205.

Calderhead, T. (1989). Reflective teaching and teacher education. Teaching and Teacher Education, 5(1), 43-51

Carter, K. (1993). Creating case for the development of teacher knowledge. In Russell, T. & Munby, H. (Eds.) Teachers and teaching: From classroom to reflection. New York: Falmer Press, Taylor & Francis Inc., 109-123

Clift, R., Houston, R., & Pugach, M. (Eds.). (1990). Encouraging reflective practice in education: An analysis of issues and programs. New York: Teachers College Press.

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. Chicago: Henry Regnery Co.

Guba, Y. S., & Lincoln, E. G. (1985). Naturalistic inquiry, Beverly Hills, CA: Sage.

James, W. (1983). Talks to teachers on psychonlogy and to students on some of life's ideals (F. Bowers, Ed.) Cambridge, MA: Harvard University Press. (Original work published in 1899).

Lederman, N. G., Gess-Newsome, J., & Zeidler, D. L. (1993). Summary of research in science education– 1991. Science Education, 77, 465-559.

Perrone V., & Traver, R. (1996). Secondary education. In Sikula, J., Buttery, T. & Guyton, E. (Eds.). Handbook of research on teacher education, 2nd edition. New York: Simon & Schuster Macmillan, 392-409.

Raines, P. & Shadiow, L. (1995). Reflection and teaching: The challenge of thinking beyond the doing. Clearing House, 68(5), 271.

Richert, A. E. (1993). The content of student teachers' reflections within different structures for facilitating the reflective process. In Russell, T. & Munby, H. (Eds.) Teachers and teaching: From classroom to reflection. New York: Falmer Press, Taylor & Francis Inc., 171-191.

Schön, D. (1983). The reflective practitioner. New York: Basic Books.

Schön, D. (1987). <u>Educating the reflective practitioner</u>. San Francisco: Jossey-Bass.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. <u>Educational Researcher, 15</u> (2), 4-14.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. <u>Harvard Educational Review, 57</u>(1), 1-22.

Author Notes

Hui-Ju Huang, Assistant Professor

225 Brown Hall
Department of Educational Leadership
Northwest Missouri State University
Phone number: 660-562-1225
Email: hhuang@mail.nwmissouri.edu