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ABSTRACT

The level of reflection achieved by preservice teachers (N=21) at the end of their Master of Education program is analyzed in this exploratory study. Data were collected from class sessions and field experiences during three quarters. Subjects engaged in reflection by writing in journals about readings, class discussions, and field or student teaching experiences. Findings indicated that if preservice teachers engage in reflective activities, they improve their level of reflection but do not achieve the highest levels of reflection without specific training. Without any background in teaching theory, preservice teachers retold events without interpretation or analysis. Preservice teachers with training seemed to gain more understanding about the application of certain strategies or procedures. Results suggested that the theme of teachers as reflecting professionals should be pursued in preservice education and specific training should be extended in these programs. Includes five tables with statistics. (Contains 16 references.) (LH)

A LONGITUDINAL STUDY ON REFLECTION OF PRESERVICE TEACHERS

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Teacher reflection has been a topic of interest in teacher education since the 1980s (Bolin, 1989). Although the concept of teacher reflection was first introduced at the turn of the century by Dewey, his ideas have provided a foundation for much of the subsequent theoretical work. Today teacher reflection is considered to be a very important component of preservice teacher education. This exploratory study's objective was to systematically analyze the level of reflection which preservice teachers achieved by the end of their Master of Education program.

Theoretical Framework

Based on definitions given by Goodman (1984), Ross (1987, 1989), and Zeicher and Liston (1987), reflection can be viewed as a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices. Van Manen (1991) asserts that reflection can take place only if preservice teachers or teachers in general have the time to think about their teaching in terms of what was done, what could have been done, and what should be done. This carries the connotation of deliberation, making choices, and reaching decisions about a course of action. Shulman (1987) defines the process as reviewing, reconstructing, reenacting, and critically analyzing one's own and the class's performance. Cruickshank and Applegate (1981) define reflection as helping teachers think about what happened, why it happened, and what else they could have done to reach their goal. The process of reflection, as explained by Valverde (1982), is one in which teachers or preservice teachers ask value-laden questions about themselves as teachers, what they are doing, why they are doing it, and whether they are satisfied with their actions and decisions.

The development of preservice teacher thinking requires more than mastery of certain teacher behaviors associated with student achievement; rather, it involves student teachers in critical, reflective thinking about their work (Bolin, 1988). Dewey (1904) believed that people should be taught how to think by being involved in thinking, and that it could be even more important to prepare preservice teachers to think about their work than to teach strategies they would master for future application. By encouraging teachers to think about and reflect upon their work, ordinary thinking can be turned into critical thinking. Like Dewey, Kuhn (1986) believes that the only way to improve teachers' thinking is to involve them in it. This suggests that in order to improve preservice teachers' reflectivity, it is necessary to involve them in relevant exercises and opportunities to engage in reflective thinking.

Sparks-Langer et al. (1990) point out that asking the "why" question is essential in the development of reflection in preservice teachers. If students do not understand why something worked or did not work, they will have difficulty figuring out what to do next. Related to this, Smyth suggests that there are four forms of action that should be used to engage preservice teachers in reflection: describing (what do I do?), informing (what does it mean?), confronting (how did I come to be like this?), and reconstructing (how might I do things differently?). Such opportunities to engage in reflective thinking help preservice teachers link theory to practice, allowing them to try to balance learning styles and teaching styles with content, and thus challenge their own practices and assumptions as they strive for improvement.

Student teachers tend to be more reflective if the experiences upon which they are expected to reflect are real (Dewey, 1933). Preservice teachers need to have opportunities to reflect upon practice through observation in field experiences and in real school settings (Roth, 1989). This

enables them to analyze and interpret field experiences from a different perspective, discover assumptions, and arrive at implications for classroom practice (Bainer & Cantrell, 1993). Preservice teachers can be trained in reflection for self-development and self-monitoring. By starting this training early in the teacher education program, and by using a well structured format, preservice teachers can be helped to develop effective reflective abilities, learning how to reflect about their teaching in an objective and analytical way under controlled clinical teaching conditions (Bainer & Cantrell, 1992; Cruickshank et al., 1981). Activity and interaction serve as the support base for the thinking process leading to reflection.

Method

Subjects

The subjects of the study were 21 elementary school preservice teachers in a Master of Education (M.Ed.) teacher education program at a large mid-western university who were taking part in a two-quarter practicum experience followed by student teaching. Four students were males; sixteen were females. All were in the second quarter of their M.Ed. program. The subjects were at a typical age for university graduate students (range = 22-24), with the exception of four nontraditional students (ages 39 years, 35 years, 30 years, and 27 years).

All students met the six criteria of the selection process (i.e., GPA >2.75; adequate GRE; three letters of recommendation; writing sample; and a BA or BS degree) for admittance into the Master of Education Program. During the study, subjects were enrolled in courses in social studies, science, math, and literacy, as well as a field experience. It was during the class sessions and field experiences that data for the present study were collected.

Instruments

The subjects involved in the study were engaged in reflective journal writing each quarter, of three types: reflections on selected readings, class discussions, and early field and student teaching experiences. The levels of reflection of the journal entries for course readings and field experiences were determined by using the following instruments: Ross (1989) "Criteria for Assessing Levels of Reflection," which was applied to the reflections on selected readings because its framework addresses reflection with readings; Galvez-Martin (1995) "Assessment for Levels of Reflection," which was used for field experiences and student teaching experiences (which combined two earlier frameworks in a step-by-step progression); and Shulman's (1987) "Model of Pedagogical Reasoning and Action," which was used with the journal entries for class discussions because it encompasses the whole process of teaching from preparation to reflection.

Orientation for Subjects

The first orientation session lasted 30 minutes. For the class journals, two entries were made: (a) reflections on the readings, focusing on what they learned for future teaching; and (b) reflections on what they learned from the class (referring to social studies and science). The class journals and reading journals were handed in weekly for five weeks. For the field journals, students were told that they could reflect on any event that caught their attention. They were to tell what had happened, how it was handled, and how it could have been improved. They were to hand in three journals for autumn and winter quarters after the field experience was completed. For spring quarter, the student teachers prepared three journal entries per week for eight weeks. These journal entries were handed in weekly following the same format as autumn and winter.

Data Collection and Analysis

The subjects were in direct contact with the principal investigator weekly during the three quarters the study lasted (autumn 1995, winter 1996, and spring 1996). Journal entries were collected weekly for all three focus areas. All journals were scored by three raters who were trained in the use of the three instruments, and all documents per student, per quarter, were also read by all raters in order to determine levels of reflection. The inter-rater reliability was determined by using Cronbach's alpha=0.95. Therefore, the overall inter-rater reliability was high.

A repeated measure of two factor completely within subjects design was used to analyze the levels of reflection in the data sets that corresponded to class readings and field experiences. Content analysis was performed on the class discussions using the categories that came from Shulman's framework. Percentages and frequencies were calculated per category. A chi-square analysis for independence was applied to a 2x6 contingency table to test the null hypothesis.

Validity

A representative sample of the population examined the three instruments with which the study was going to be conducted and agreed that the instruments measured what they intended to measure: reflective thinking. After ratings of the data were completed, a member check was used to verify results. Triangulation was carried out through the use of multiple instruments, methods, and investigators to increase confidence in the results of the study.

Results

The overall means and standard deviations of averaged scores per rater on Ross' levels of reflection on selected readings are displayed in Table 1 as well as the means and standard

deviations per quarter by rater.

Insert Table 1 about here

An examination of Table 1 revealed that the highest overall mean was the one associated with winter quarter (M = 1.57). Because the means per rater in winter quarter were higher than those from autumn quarter, it can be inferred that the students were somewhat more reflective on the readings in winter than in autumn quarter.

A two factor analysis to test for within subjects effects is summarized in Table 2. It was performed on a two factor completely within subjects design on Ross' levels of reflection on selected readings by quarter and ratings.

Insert Table 2 about here

An examination of Table 2 revealed that the interaction variable "quarter reflections" within was statistically significant, $F(2,40) = 7.51$, $p < .05$ This indicated that the students were more reflective on the readings during winter quarter.

A post-hoc Tuckey test demonstrated that autumn and winter quarters were statistically significant at experiment wise error rate of .05.

The overall means and standard deviations of averaged scores per rater on Galvez-Martin's levels of reflection on the field experiences are displayed in Table 3, as well as the means and standard deviations per quarter and rater.

Insert Table 3 about here

An examination of Table 3 revealed that the highest overall mean in the field journals was the one associated with spring quarter (M = 4.43). The second highest overall mean was associated with winter quarter (M = 2.76). The means indicated that students achieved an intermediate level of reflection by spring quarter, whereas they gained slightly in their level of reflection between autumn and winter.

A two factor analysis to test for within subjects effects is summarized in Table 4. It was performed on a two factor completely within subjects design on Galvez-Martin's levels of reflection on the field experiences by quarter and ratings.

Insert Table 4 about here

An examination of Table 4 revealed that the interaction variable quarters within was statistically significant, $F(4, 80) = 12.78$, $p < .05$. This indicates that the students engaged more in reflection during spring quarter.

A post-hoc Tuckey test showed that autumn and spring quarters, and winter and spring quarters were statistically significant at experiment wise error of .05.

The main effects of the "quarter reflections'" variable indicated that, most of the cells were significantly different with exception of cells two and three, three and four, and three and five.

A content analysis was performed by three raters on the class discussion journals using

Shulman's six categories (comprehension, transformation, instruction, evaluation, reflection, and new comprehension) as shown in Table 5.

Insert Table 5 about here

An examination of Table 5 revealed that overall most of the journal entries were represented by the reflection category (47%), followed by the new comprehension category (28%). The other categories ranged between transformation (13%) and evaluation (3%). Notably, most of the students' reflections during autumn quarter, were rated 93% (average among raters) under the reflection and new comprehension categories. During winter quarter, 36% (average among raters) of the students' reflections were rated on the reflection category, 57% (among two of the raters) of the students' reflections were rated in the transformation category, and 33% (only the third rater) rated the students' reflections in the new comprehension category.

A chi-square for independence was applied to the content analysis to determine the dependence or independence between Shulman's categories and the rated reflections on the class discussion journals in autumn and winter quarters.

The results of this analysis revealed that there was dependence between the categories mentioned above and the rated reflections in which the students were engaged. ($\chi^2 = 109.5$, critical region = 18.31, reject the null hypothesis. The chi-square analysis indicated that the dependence between categories and the rated reflections was statistically significant, $p < 0.05$ (0.000).

Conclusions and Implications

If preservice teachers are engaged in reflective activities they improve somewhat on their level of reflection. However, this exploratory study suggests that without specific training, preservice teachers do not achieve the highest levels of reflection (i.e., analyzing teaching situations from multiple perspectives; and evaluating and adjusting one's own teaching performance in response to children's individual differences).

In this study, preservice teachers were asked to reflect on readings, class discussions, and field experiences, and over the course of the study the level of their reflections become higher. However, it is clear from the results of the study that simply asking preservice teachers to reflect will not turn them into practitioners who consistently reflect at the highest levels. For example, during autumn quarter's demonstrations of teaching strategies, the preservice teachers often reviewed or retold activities or events that occurred and from this stated new forms of knowledge gained from the retelling. Statements were made such as, "I would definitely use this procedure when I am a teacher." During winter quarter, the preservice teachers seemed to gain more understanding about why certain instructional strategies or procedures might be used by teachers to achieve their goals. However, during spring quarter's student teaching experience, the understandings gained in the classroom did not consistently articulate into high level reflections about their student teaching experience.

It thus seems clear that when preservice teachers are simply asked to reflect, they typically retell the events of the day without interpreting them or analyzing what the events mean. In order to achieve higher levels of reflection, preservice teachers need specific training in reflective thinking and need very structured guidance in its development.

Implications for future research include:

1. Future research should include two groups followed through the year; control and experimental.

2. Preservice teacher reflection needs to be studied more systematically. While several frameworks have been presented to analyze type and level of reflection, validity data on these frameworks are not always provided in the articles, and multiple studies using the frameworks have not been reported.

3. Future studies should offer strategies and specific exercises, based on current theoretical literature, to promote higher levels of reflection, and should examine their effectiveness in developing higher levels of reflection.

What we have seen suggests that the theme of teacher as reflective professional, as Wildeman & Niles (1987) and Pultorak (1993) suggest should be pursued vigorously in preservice teacher education programs and specific training should be extended throughout these programs.

Table 1

Means and standard deviations of the levels of reflection on selected readings per quarter by rater

Quarter	R1	R2	R3	0
Autumn				
M	1.37	1.30	1.30	1.32
SD	0.25	0.00	0.00	0.08
Winter				
M	1.41	1.78	1.53	1.57
SD	0.29	0.43	0.37	0.23
Overall				
M	1.39	1.54	1.41	1.45
SD	0.27	0.38	0.28	0.21

R1 = Rater 1
R2 = Rater 2
R3 = Rater 3
0 = Overall

Table 2

Two factor (quarter x rating) completely within subjects design of the levels of reflection on selected readings

Source	df	SS	S	F	P
Subjects	20	1.43			
Quarter Reflections	1	1.98	1.98	18.02	0.0004
Subjects by Quarter	20	2.20	0.11		
Within	2	0.53	0.26	3.48	0.0404
Subjects Within Quarter Reflections	40	3.03	0.08		
Within	2	0.97	0.49	7.51	0.0017
Error	40	2.59	0.07		
Total	125	12.73			

Table 3

Means and standard deviations of the levels of reflection per quarter by rater

Quarter	R1	R2	R3	0
Autumn				
M	2.91	2.48	2.38	2.59
SD	1.48	1.29	1.24	1.21
Winter				
M	2.48	2.48	3.33	2.76
SD	1.33	1.33	1.16	1.13
Spring				
M	4.67	4.67	3.95	4.43
SD	1.28	1.28	1.02	1.12

R1 = Rater 1
R2 = Rater 2
R3 = Rater 3
0 = Overall

Table 4

Two factor (quarter x rating) completely within subjects design of the levels of reflection on the field experiences

Source	df	SS	S	F	P
Subjects	20	110.74			
Quarter Reflections	2	130.17	65.09	20.12	0.0001
Subjects by Quarter	40	129.39	3.24		
Within	2	0.77	0.39	0.77	0.4707
Subjects Within Quarter Reflections	40	20.12	0.50		
Within	4	19.93	4.98	12.78	0.0001
Error	80	31.19	0.39		
Total	188	442.30			

Table 5

Categories with frequencies per quarter by rater

	AU QTR						WI QTR					
Categories	R1 F	R1 %	R2 F	R2 %	R3 F	R3 %	R1 F	R1 %	R2 F	R2 %	R3 F	R3 %
Comprehension	0	0	2	1	6	2	38	7	32	6	22	6
Transformation	15	5	2	1	8	3	159	29	152	28	40	10
Instruction	0	0	16	5	10	3	31	6	34	7	33	8
Evaluation	0	0	0	0	0	0	52	9	50	9	8	2
Reflection	151	50	186	61	194	64	185	33	189	35	165	41
New Comprehension	139	45	97	32	86	28	90	16	81	15	132	33
Totals	305	100	303	100	304	100	555	100	538	100	400	100

AU QTR = Autumn Quarter
WI QTR = Winter Quarter
R1 = Rater 1
R2 = Rater 2
R3 = Rater 3

BIBLIOGRAPHY

Bainer, D.L. & Cantrell, D. (1993). The relationship between instructional domain and the content of reflection among preservice teachers. Teacher Education Quarterly, 20 (4), 65-76

Bainer, D.L. & Cantrell, D. (1992). Nine dominant reflection themes identified for preservice teachers by a content analysis of essays. Education, 112 (4), 571-578

Bolin, F.S. (1988). Helping student teachers think about teaching. Journal of Teacher Education, 39 (2), 48-54

Cruickshank, D.R. & Applegate, J.H. (1981). Reflective teaching as a strategy for teacher growth. Educational Leadership, 38 (7), 553-554

Cruickshank, D.R.; Kennedy, J.J.; Williams, E.J.; Holton, J.; & Fay, D.E. (1981). Evaluation of reflective teaching outcomes. Journal of Educational Research, 75 (1), 26-32

Dewey, J. (1933). How we think: A restatement of the relation of reflective thinking to the educative process. Lexington, MA: D.C. Health and Company

Dewey, J. (1904). The relation of theory to practice in education. In C.A. McMurry (ed). The relation of theory to practice in the education of teachers. (Third yearbook of the National Society for the Scientific Study of Education, Part 1) (pp 9-30). Chicago: University of Chicago Press

Galvez, M.E. (1995). The improvement on preservice teachers reflection through content-specific reflective teaching. Unpublished doctoral dissertation. The Ohio State University

Kuhn, D. (1986). Education for thinking. Teachers College Record, 87 (4), 495-512

Pultorak, E.G. (1993). Facilitating reflective thought in novice teachers. Journal of Teacher Education, 44 (4), 288-295

Ross, D.D. (1989). First steps in developing a reflective approach. Journal of Teacher Education, 40 (2), 22-30

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

Smyth J. (1989). Developing and sustaining critical reflection in teacher education. Journal of Teacher Education, 40 (2), 2-8

Sparks-Langer, G.M.; Simmons, J.M.; Pasch, M.; Colton, A.; & Starko, A. (1990). Reflective pedagogical thinking: How can we promote it and measure it? Journal of Teacher Education, 41 (4), 23-32

Van Manen, M. (1991). Reflectivity and the pedagogical moment: The normativity of pedagogical thinking and acting. Journal of Curriculum Studies, 23 (6), 507-536

Wildman, T.M. & Niles, J.A. (1987). Reflective teachers: Tensions between abstractions and realities. Journal of Teacher Education, 38 (4), 25-31

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