

**Measuring Practicum Student Teachers' Reflectivity:
The Reflective Pedagogical Thinking Scale**

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Abstract

The purpose of the original study was to investigate practicum student teachers' reflectivity. This paper describes the use of a revised version of the Reflective Pedagogical Thinking Scale (Sparks-Langer, et al., 1990) to measure reflectivity. The original scale was used by the developers to assess reflectivity through a structured interview. The present study employs a revised version of the scale to assess reflectivity based on student teachers' weekly journal writings. The participants consisted of 223 student teachers from Batu Lintang Teachers College who were undergoing their first phase of their student teaching practicum of six weeks. Student teachers' practicum journals were collected at the end of the practicum and each participant's level of reflectivity was assessed through the use of the revised reflective pedagogical thinking rating scale. Results of the analyses indicate that student teachers were hardly reflective, exhibiting very low levels of reflectivity based on van Manen's classification of levels of reflectivity. Interpretations of the results and recommendations are discussed in relation to the context of the study.

Introduction

The reflective pedagogy movement sparked off by Schon's model of the 'reflective practitioner' (1983, 1987) has become one of the most popular issues in teacher education (Copeland, et al., 1993). Some have reported the effect of reflection in changing and improving practices (examples, Bolin, 1988; Munby & Russell, 1989). Others reported the incorporation of reflection in programs (examples, Korthagen, 1988; Elbaz, 1988; Tabachnick & Zeichner, 1991). There are also many calls for reform towards a reflective pedagogy in teaching (Zeichner, 1983; Copeland, et al., 1993). However, there is little evidence to support the assumptions about its efficacy in practice (Copeland, et al., 1993). In the case of Malaysia, reforms in teacher education have moved towards a more school-based model that emphasizes an inquiry-oriented reflective practicum and the use of mentoring incorporating the clinical supervision approach to supervision. These changes have been the result of the increasing influence of international trends in teacher education.

Reflectivity

While many teacher education programs continue to promote reflection as a goal in teacher education, the term is fraught with diverse definitions and embraces a wide range of concepts and strategies (Hatton & Smith, 1995). The discourse on the concept, nature, and strategies for reflection continues to permeate the literature for the last fifteen years and there is no common consensus regarding these issues.

Schon's framework of reflection-in-action and reflection-on-action involve the idea of professional practice based upon knowing-in-action and knowledge-in-action (Munby & Russell, 1989) derived from the construction and reconstruction of professional experience. van Manen's (1977) proposal of three hierarchical levels of reflection derived from Habermas (1973) has been influential in providing a framework for much of the research into reflectivity. These three levels are similar to those described by Zeichner and Liston (1987). The first level is technical reflection which is concerned with examining the efficiency and the effectiveness of means to achieve certain ends. The second level, practical reflection, involves examining not only the means but also the ends, questioning the assumptions and the actual outcomes. The third level is critical reflection, which considers the moral and ethical issues of social compassion and justice along with the means and the ends, encompassing the first two levels.

Much of our understanding of the reflective process comes from ethnographic research and few studies have attended to this variable from a quantitative perspective. Some notable efforts to quantify reflectivity can be found in the literature (Kirby & Teddle, 1989; Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990; Korthagen, 1993;). Studies that attempt to identify and categorize teacher reflection have used various criteria for the purpose. For example, Ross (1989) used student teachers' essays to assess level of reflection based upon a list of descriptive criteria that reflects Van Manen's three levels. Hatton and Smith (1995) provide a list of criteria for recognizing evidence for different types of reflection ranging from descriptive writing, descriptive reflection, dialogic reflection, and critical reflection.

Dieker and Monda-Amaya (1995) assessed student teachers' reflective levels of problem solving by analyzing student teachers' journal writings using a list of criteria that categorize journal entries into seven levels. Other attempts to measure reflectivity are those of Kirby and Teddle (1989) who developed the Reflective Teaching Instrument to assess reflectivity, and Korthagen (1993) who constructed the Reflective Attitude Scale.

In another development, Sparks-Langer, Simmons, Pasch, Colton and Starko (1990) have conceptualized the construct of reflective pedagogical thinking derived from three sources of influence: Van Manen's three levels of reflection; cognitive psychology; and Kolb's (1984) experiential learning theory. Their framework for reflective thinking consists of seven levels of reflective pedagogical thinking. The procedure for assessing pedagogical reflective thinking involves an interview and interviewee's responses are then assessed using the framework as criteria. The seven levels within this framework are shown in Table 1.

Table 1 Framework for Reflective Thinking

Level	Description
1	No descriptive language
2	Simple layperson description
3	Events labeled with appropriate terms
4	Explanation with tradition or personal preference given as the rationale
5	Explanation with principle or theory given as the rationale
6	Explanation with principle/theory and consideration of context factors
7	Explanation with consideration of ethical, moral, political issues

Source: Sparks-Langer et al., Reflective Pedagogical Thinking: How Can We Promote It and Measure It? Journal of Teacher Education V41, N4, 1990.

The levels in this framework reflect Gagne's (1968) hierarchy of thinking and van Manen's (1977) idea of critical thinking (Sparks-Langer, et al., 1990). Levels 1 to 6 encompass cognitive reflection while level 7 is critical reflection. The progression of levels indicates a growing sophistication in teachers' schemata, from technical rules

and concepts to contextual and ethical thinking (Sparks-Langer & Colton, 1991). This framework has also been used to measure student teachers' reflective thinking in another study by Siens and Ebmeier (1995). Findings from these studies indicate that student teachers seldom progress beyond level 5 and 6. Among the assumptive factors that contribute to student teachers' reflectivity are supervisor coaching and peer coaching in a developmental approach utilizing the procedures of clinical supervision (Siens & Ebmeier, 1995), and appropriate field placement contexts (Gipe & Richards, 1992).

Purpose of the Study

Subramanian (1997) studied the journal writings of ten participants of the Batu Lintang Teachers College. Using the grounded theory's strategy of the constant comparative method, his findings indicate that student teachers were unable to reflect beyond van Manen's (1977) second level of reflectivity. The purpose of this study was therefore to further investigate practicum student teachers' reflectivity using a different approach to measure reflectivity employing a large sample of student teachers.

Method

Participants consisted of 223 student teachers from the Batu Lintang Teachers College. These student teachers kept weekly journals during the practicum for the purpose of reflecting on their teaching experience. Each participant was supervised by a college lecturer and a cooperating teacher from the placement school. Student teachers' journals were collected at the end of six weeks of practicum.

Initially, attempts were made to use the Reflective Pedagogical Thinking Scale of Sparks-Langer et al. (1990) as the criteria to rate each journal entry based on the seven levels of reflective pedagogical thinking. However it was soon found that the criteria described in the scale were somewhat not suited to the data obtained and a revision of the descriptive criteria in the scale had to be done without affecting the

conceptual framework of the scale. In order to revise the scale, it was necessary to identify the types of entries and categorize them into conceptual categories.

Twenty journals were randomly selected for content analysis and the method involved the use of open, axial and selective coding so that data could be broken down, examined, compared, conceptualized and categorized. This procedure resulted in reducing the number of types of entries into four main categories of entries, which are descriptions of: (a) events that occurred; (b) problems; (c) supervisor's comments; and (d) personal suggestions for future actions. These were further hierarchically categorized into three levels, ranging from the lowest level where the description was non-judgmental, to description that was judgmental but without reasons or justifications, and description that was judgmental with reasons or justifications. Using the Reflective Pedagogical Thinking Scale of Sparks-Langer et al. (1990) as the basis, the third level was further hierarchically subdivided into four levels based on the nature of the reasons or justifications given for the description of the event, problem, supervisor's comments, or personal suggestion for future action. Table 2 shows the final revised scale used to rate the journal entries.

Table 2. Revised Reflective Pedagogical Thinking Scale
(Adapted from Sparks-Langer et al., 1990)

<u>Level</u>	<u>Description / Criteria</u>
1	Non-judgmental report/description/narration of events/supervisor's comments.
2	Judgmental report/description of events/problems/supervisor's comments/personal suggestions for future action with no reasons or justifications/rationale given.
3	Descriptions/explanations of events/problems/personal suggestions for future actions with tradition/personal preference given as reason/justification/rationale.
4	Description/explanation with principle or theory given as reason/justification/rationale.

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| 5 | Description/explanation with principle/theory and consideration of contextual factors given as reason/justification/rationale. |
| 6 | Description/explanation with consideration of ethical, moral and political issues. |
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The revised scale, though retaining the conceptual framework of the original scale by Sparks-Langer et al. (1990) has six instead of seven levels. Level 3 in this scale is the equivalent of level 4 in the original scale and levels 4, 5 and 6 are parallel to levels 5, 6 and 7 in the original scale. The first three levels in the original scale have been replaced with only two levels in this revised scale. This was necessary due to the ambiguity of the original scale's criteria. For instance, the criteria for level 1 in the original scale is "No descriptive language" which is non-applicable in the case of journal entries. As for levels 2 and 3 in the original scale, it was difficult to discriminate between "layperson description" and "events labeled with appropriate terms" especially when journal entries were written in the Malay language where it becomes difficult to differentiate between "layperson" and "appropriate pedagogical" terms.

The revised scale was then used by two independent raters to rate five journals containing a total of thirty entries. Each rater was given the scale with explanatory notes and examples together with similar copies of the thirty entries. The inter-rater agreement was computed using the percentage of agreement in the ratings and was found to be 73% for a total of 30 ratings. The differences in ratings were all found to differ by one level, notably between level 3 and 4 where raters had difficulty deciding whether the justifications given for the explanation of an event was based on personal preference/belief or based on principle/theory. This ambiguity is mainly due to the use of the Malay language where the terms used may not accurately indicate the presence of the use of a principle or theory in the explanation of an event.

Given the above limitations, it was decided that a single rater would rate all the journal entries to ensure a high degree of consistency. A single rater therefore rated all the journal entries using the following procedure. Firstly, all the journals were numbered from 1 to 223 and the rating followed this numbering from 1 to 223. Once

all had been rated, a second round of rating starting from the first number till the twentieth were rated again. The results of the second rating were then compared with the first rating to find out the percentage of agreement between the first and the second rating. The percentage agreement was found to be 86% for the first twenty journals. The next twenty journals from number 21 to 40 were then rated a second time and the percentage agreement with the first rating was found to be 94%. At this degree of agreement it was unnecessary to continue the second rating for the rest of the journals and the second rating of the first forty journals were taken as the final score for analyses. This procedure was used to ensure a high degree of consistency in ratings. The total score for the six weekly entries constitute the score for reflectivity for each participant.

Results and Discussion

Data on reflectivity revealed that the weekly mean level of reflective pedagogical thinking based on the scales used for assessing reflectivity, was at level two, that is merely making judgemental report or description of events, problems, supervisor's comments, or suggestions for further action with no reasons, justifications or rationale given. This represents a very low level of reflective pedagogical thinking. Table 2 shows the frequencies and percentages of each level of reflectivity for the total number of 1338 journal entries (223 participants x 6 entries).

Table 2. Frequencies and Percentages of Journal Entries by Level of Reflectivity

Level	1	2	3	4	5	6
Frequency	402	584	288	63	1	0
	(30.04)	(43.65)	(21.52)	(4.71)	(0.07)	(0)

Note: Figures in parentheses are percentages.

The data reveals that 73.7% of the journal entries were at Level 2 or below, while 21.5% were at Level 3 and only about 4.8% of the entries were beyond Level 3. In other words, majority of the journal entries did not articulate beyond mere description of events, their supervisors' comments, problems, or suggestions for future action,

with some evaluative remarks but did not give reasons, justifications or rationale for these entries. Only about 25% of the entries provided reasons or justifications for the entries, of which a mere 5% was at Level 4, giving reasons based on pedagogical principles or theories. Given that Levels 1 to 4 in this scale represent van Manen's lowest level of reflective thinking which is at the level of technical rationality, the data shows very little evidence of reflectivity beyond this level and is agreement with Subramanian's (1997) findings of low levels of reflectivity among student teachers of the college.

Within the context of this study and the usual limitations of the methodology, the low level of reflectivity found among student teachers, to some extent, may be interpreted to indicate little success of the program to promote reflectivity. This interpretation seems alarming but a possible alternative explanation for the low level of technical reflection during practicum teaching may be viewed from a developmental perspective. Student teachers entering initial teaching have been found to focus most of their concerns and energy on tasks related to management and teaching. This perhaps explains their preoccupation with technical rationality rather than reflecting beyond these immediate concerns. Time and duration of practice and support are important factors for progressing to higher levels of reflectivity (Clift, Houston, & Pugach, 1990; *Journal of Teacher Education*, 1989; Gore & Zeichner, 1991; McNamara, 1990; Sparks-Langer et al., 1990; Cryns & Johnston, 1993). Given the six weeks of practicum in this study it is strongly suspected that not enough time and experience were allowed to effect higher levels of reflection.

Conclusions

Two conclusions can be made from this study. Firstly, this study indicates the limited usefulness of the Reflective Pedagogical Thinking Scale in measuring reflectivity. The scale is useful only when used as intended by its developers, and that is to measure reflectivity based on an interview. On the other hand, its conceptual framework, as used in this study, indicates that its usefulness can be extended to measure reflectivity based on journal writings. However, the revised scale used in this study is by no means a universal scale that can be used to assess all forms of

practicum journal writings. Within the context of the study, the revised scale was found to be useful because efforts were made to identify and categorize the types of journal entries to fit into the conceptual framework of the original scale. Given a different context this revised scale may not be usable unless the journal writings are also similar in terms of entry types that can be categorized according to the present scheme of categorization. Secondly, apart from the limitations of the scale, the evidence of low reflectivity among student teachers suggests the need for program designers to consider further changes in terms of prepracticum preparation and supervision strategies that may promote reflectivity among student teachers. Efforts should be made to ensure the link between mentoring practices and reflectivity. Supervisors should be trained not only in the practice of clinical supervision but more importantly in a role that could ensure the enhancement function of the supervisor to promote reflection. The use of journal writing in the format used in this program which focuses on the reflection of aspects related to teaching and learning seems theoretically sound. However, without the encouragement and the deliberate role of supervisors to promote reflection, reflectivity tends to remain at the lowest level of technical reflection. Reflective practice requires much change, much support, and much patience (Vaughan, 1990).

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