CHAPTER TWO

HOW CAN REFLECTION BE IDENTIFIED?

Perhaps the most central question ... is ... How would you recognise a reflective practitioner if you saw one? Copeland et al. (1993, p.348)

Not surprisingly, given the diversity of orientations to reflection discussed in the previous chapter, studies attempting to identify evidence of reflection in student teachers adopt markedly different methods. The present chapter reviews 16 such studies. These were selected from 45 studies of student teachers' reflection identified by a comprehensive, although not exhaustive, search of the teacher education literature.

Of these 45 studies (listed in Appendix 3), 13 were excluded from consideration for review for this thesis because they did not include a clear description or definition of what they meant by reflection. As explained previously, the diversity of orientations to reflection means that failure to make explicit the meaning one gives to reflection can lead to considerable confusion. Studies excluded on this basis include those by McMahon (1997), Kwan (1996), McLaughlin & Hanifin (1995), Hoover (1994), Tsangaridou & O'Sullivan (1994), Zulich, Bean & Herrick (1992), Cullen (1991), Surbeck, Han & Moyer (1991), Tama & Peterson (1991), Hillkirk & Dupois (1989), Morine-Dershimer (1989), Bolin (1988; 1990) and Calderhead (1987). An additional study (Baird, 1991) was excluded because it did not indicate how data collected were analysed.

From the remaining 31 studies, I originally intended to select studies which represented different orientations to reflection (see Chapter One). Categorising the orientation underpinning each study proved difficult, however, with only a few studies (e.g., Clarke, 1995; Harrington & Hathaway, 1994; Ullrich, 1992; Trumbull & Slack, 1991) based solely on one orientation. Some studies, including Tsang & Wong (1995), Sparks-Langer, Simmons, Pasch, Colton & Starko (1990), Ross (1989) and MacKinnon (1987), claimed to be based on a particular orientation but closer examination revealed little relationship between the study and that orientation. Other studies (e.g., Chen, 1993; Guillaume & Rudney, 1993; Richert, 1992) draw with varying understanding upon a number of different orientations to reflection. Given these difficulties and the need to recognise the complexity of reflection, I
decided instead to select studies which illustrate the differing extent to which this complexity is acknowledged.

This chapter contends that studies can be located on a continuum according to their awareness of the complexity of reflection. It identifies three clusters of studies: (i) those which appear to show relatively little awareness of this complexity; (ii) those which show greater awareness of this complexity but remain confined by analytical perspectives; and (iii) those which attempt to move beyond analytical perspectives in order to appreciate more fully the complexity of reflection. The following review includes exemplars which represent the diversity of approaches to identifying reflection within each of these clusters.

STUDIES SHOWING LITTLE AWARENESS OF THE COMPLEXITY OF REFLECTION

Overall, studies which show relatively little awareness of the complexity of reflection seem unaware of their responsibility to consider their "relative positionality" (Michelson, 1996, p.447) and little of the tentativeness that might be expected in the face of such complexity. In addition, they tend to share some of the following characteristics. Frequently, they are informed by only one orientation to reflection and fail to consider the existence or potential relevance of other orientations. Often they are based on a simplistic interpretation (in some cases amounting to misinterpretation) and uncritical acceptance of their chosen orientation. As well, they focus mostly on what they regard as measurable aspects of reflection and ignore the non-measurable. The following discussion highlights each of these weaknesses in turn.

Informed By Only One Orientation

In many respects, Pultorak's (1993; 1996) studies exemplify those constrained by reliance on one orientation to reflection (in this case Van Manen's) and a disinclination to consider the potential relevance of others. His 1993 study involved 31 student teachers, most of whom were enrolled in an elementary program. Although the stage of the program in which they were enrolled is not indicated, his 1996 report suggests that they were undertaking a 16 week final practicum. The later study reports findings concerning the reflection of subsequent cohorts of student teachers undertaking this practicum, providing a total of 82 participants. In each study,
a variety of reflective writing and transcripts of supervisory interviews were analysed according to Van Manen's (1977) levels of reflection. In both studies, Pultorak found that interviews provided more evidence of reflection than written products and concluded that some participants found it easier to reflect verbally than in writing. His 1996 study reports substantial development in reflection during the 16 week practicum in both oral and written reflection. It could be argued, however, that these studies were limited by his narrow focus on Van Manen's orientation.

Pultorak's passing reference to individual differences in student teachers' ability to reflect, for example, does not extend to considering the possibility that some student teachers might favour a less analytical and more contemplative style of reflection which might not be identified by Van Manen's levels. He also appears not to consider the possibility that although student teachers may have developed greater mastery of a reflective writing genre (Hatton & Smith, 1995) as measured by these levels during their 16 weeks of practicum, they may not have necessarily became more reflective, but rather simply more adept at meeting program expectations. Had Pultorak also incorporated Dewey's criteria of openmindedness, wholeheartedness and responsibility, for instance, he might have been able to distinguish between genuine development in reflective writing and a strategic (Gibbs, 1992; Ramsden, 1992) response to meeting the requirements of the practicum.

It is unclear why Pultorak seems so disinterested in other orientations. Considering the extent of the literature about reflection, it would appear unlikely that he is unaware of their existence. Perhaps he considers Van Manen's orientation superior to others, although his adoption of the term categories in preference to levels suggests that he is not totally accepting of Van Manen's hierarchical conceptualisation. More pragmatically, he might regard this framework as simpler to use than alternative strategies emerging from other orientations.

Regardless of the reasons for his singular focus, it could be argued that Pultorak's work would be strengthened by an explanation of his decision to rely solely on Van Manen's orientation. As it stands, his failure to explain his lack of reference to other orientations to reflection could suggest that he may not have considered how Van Manen's work, and hence his own study, might be enriched by other orientations. Given the diversity of orientations and the
rich array of ideas they collectively present, his focus indeed appears unduly narrow. The following writers also relied heavily on only one orientation but their studies were further weakened by their apparently tenuous grasp of these respective orientations.

**Simplistic (Mis)Interpretation**

The earliest of these studies (MacKinnon, 1987) was undertaken with an undisclosed number of elementary education student teachers at the time of their first practicum. MacKinnon sought to determine the appropriateness of Schon's (1983; 1987) notion of reflection-in-action to student teachers' reflection. Data consisted of transcriptions of lessons taught by student teachers and post lesson interviews between student teachers and supervisors.

Using Schon's concepts of problem setting and reframing, MacKinnon devised an analytical scheme based on a cycle of reflection which consisted of three phases - *initial problem setting*, *reframing*, and *resolve*. He used this cycle to identify the phase to which the data might belong and then applied four criteria or *clues* to distinguish reflection from rationalisation. These were:

- **Clue 1**: Can the phases of the reflective cycle be "seen" in the dialogue?...
- **Clue 2**: Is there evidence of a change in the perspective from which a classroom phenomenon is viewed?...
- **Clue 3**: Does reframing result in a change in the conclusions about the problematic phenomenon or in the implications that are derived for practice?...
- **Clue 4**: In the course of reframing, does the teacher draw from his or her personal experience as a student to make sense of the pupil's position? (p.140)

These criteria appear to have two major shortcomings.

First, they fail to do justice to the complexity of Schon's orientation to reflection. They do not incorporate, for example, the notions of intuitive feel and professional artistry underpinning Schon's work. Second, they suggest that MacKinnon may have misinterpreted the meaning of reflection-in-action. As discussed in Chapter One, reflection-in-action involves reflection which occurs simultaneously with action. Yet in MacKinnon's study, reflection took place after rather than during the teaching episodes, which suggests that he was investigating reflection-on-action rather than reflection-in-action. His apparent misunderstanding exemplifies the confusion concerning the
terminology and epistemological differences underpinning different conceptualisations of reflection referred to by many writers (e.g., Bengtsson, 1995; Hatton & Smith, 1995; LaBoskey, 1994; Copeland et al., 1993; Tom, 1992; Houston & Cliff, 1990; Calderhead, 1989).

Despite the inherent methodological difficulties involved, it could be argued that MacKinnon must find ways to recognise intuitive feel and artistry if he is to more fully explore Schon’s notion of reflection-in-action. One possibility might be to include a criteria which relates to student teachers’ use of metaphor and imagery to explain decisions made during their teaching in a similar way to which Russell (1989) uses metaphor and imagery to document experienced teachers’ reflection-in-action.

While MacKinnon’s emphasis on the dynamic nature of reflection makes some contribution to our understanding of reflection, it could be argued that his contribution would be greater if he were more aware of the complexity of this dynamism. He might well consider, for example, Griffiths & Tann’s (1992) notion that reflection operates at different levels of speed and consciousness. These writers anticipate differentiating between reflection-in-action and reflection-on-action on the basis of these levels. Yet, unlike MacKinnon, they do not appear to have trialled their conceptualisation. Indeed, in a later study, Tann (1993) appears to retreat from their earlier emphasis on differences in speed and consciousness. Perhaps the methodological challenges involved in identifying differences in these were too great to take this possibility further.

Interestingly, MacKinnon (1996), influenced by Tremmel (1993), revisits the notion of reflection-in-action almost a decade later to explore the potential relevance to reflection of Taoist notions of embodied or tacit knowledge. In his later work, he posits a similar argument to that underpinning this thesis, namely that different perspectives of reflection should be viewed for their potential contribution to a holistic understanding of reflection, rather than explored in a reductionist manner. Unfortunately, he stops short of suggesting how holistic understanding and reflection might be identified and represented. Although his later work is more tentative, it can be argued that it shows a far more sophisticated understanding of the complexity of reflection and thus makes a more valuable contribution to the literature than his earlier writing.
In contrast, it could be argued that Wenzlaff's (1994) apparent lack of awareness of the complexity of reflection limits her contribution to the literature. The focus of her research was to gauge the success of attempts to "train [my emphasis] student teachers to become more reflective thinkers" (p.278). Her choice of language suggests a mechanical view of reflection which is further supported by the simplistic nature of her findings. Data were collected from five participants undertaking a nine week practicum in either an elementary, middle or high school placement. Student teachers' daily journal entries, weekly peer coaching journal entries, notes from weekly supervisory meetings and surveys completed by student teachers at the beginning, middle and end of their practicum were analysed according to Van Manen's (1977) levels of reflection.

All Wenzlaff's data sources suggest a dramatic development in the participants' reflection, with most student teachers supposedly moving from technical to critical reflection. The sample data Wenzlaff provides as evidence of this shift, however, suggest that these findings are unduly optimistic. Her understanding of critical reflection initially seems reasonable as she notes that it is associated with "ethical and political concerns ... Equality, emancipation, caring and justice enter into curriculum planning and student assessment. Teachers begin to ponder the connection between the microcosm of the classroom and the broader setting engendered by social forces and structures" (p.280). Little understanding is evident, though, in her interpretation of the data. Note, for example, her claim that the following excerpt is an instance of critical reflection:

*These books (developed by students) will help students develop rules and the reasons why we have them. It will help serve as a constant reminder of how they are supposed to act in school as well as in the grocery store and other public places.* (p.283)

Her rationale for her interpretation is that this excerpt shows a "connection between the microcosm of the classroom and the broader setting" (p. 283).

Yet the nature of this connection suggests that this student teacher expects her students to conform to the status quo. As such, it seems to contradict the very essence of critical reflection. There appears no evidence, for example, to indicate any questioning of current practices or structures in terms of their implications for equity and social justice. Indeed, it could be argued that this excerpt illustrates the coercive nature of many widely accepted teaching
practices. Although it supposedly shows that students are encouraged to participate in a democratic process, the subtext strongly suggests that the outcomes or rules have been predetermined. In fact, a strong case could be made that this excerpt, far from showing evidence of critical reflection, indicates no evidence of reflection at all. It could be seen as simply reporting an event and as unquestioning acceptance of that event. That Wenzlaff considers this evidence of critical reflection appears to indicate a gross under estimation of what critical reflection entails. Consequently, her claim that participants in her study demonstrated dramatic development, with most moving from technical to critical reflection, needs to be treated with considerable caution.

The following studies appear to demonstrate a sounder grasp than Wenzlaff of their respective orientations to reflection. Nevertheless, it can be argued that they are limited by their narrow definitions of reflection which focus on supposedly "measurable" aspects of reflection and ignore aspects not amenable to measurement.

**Excessive Emphasis On Measurement**

All four studies reviewed here (Loughran, 1996; Tsang & Wong, 1995; Sparks-Langer et al., 1990; Ross, 1989) equate reflection with analytical thinking. Indeed, Sparks-Langer et al. prefer the term *reflective pedagogical thinking* which they define as "reviewing, reconstructing, reenacting and critically analysing" one's teaching (p.24). Similarly, Ross sees reflection as "a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices" (p.22). Although both claim to be influenced by Schon's orientation to reflection, there is little evidence of this for they make no mention of the notion of reflection-in-action based on professional artistry and intuitive feel which underlies much of Schon's work. Rather, Ross' study, like Loughran's, owes more to Dewey's notion of reflective thinking, as commonly (mis)interpreted (see previous chapter), while Sparks-Langer et al. rely heavily on Van Manen's conceptualisation. Tsang & Wong claim to be influenced by Zeichner's notion of critical inquiry, but their study demonstrates little evidence of this, nor indeed of the complexity of reflection.

of seven third year student teachers undertaking a two week practicum in a secondary school. Subsequently, "total frequencies, mean frequencies and frequencies for individual trainees were calculated. Percentage of reflectivity out of the total number of references made was further explored in terms of mean percentages of reflectivity for each trainee" (p.28). This approach enables the tabulation of frequencies of topics of reflection but provides little insight into the nature or quality of that reflection. This lack of insight is evident in their conclusion that a "trainee may thus be described as reflective under two conditions: the individual frequency of reflective traits is above the mean frequency and/or individual percentage of reflectivity is above the mean percentage" (p.28). Their approach suggests an assumption, which many might consider unfounded, that reflection results in "crisp, measurable products" (Yonemura, 1991, p.416). Furthermore, it could be argued that even had their sample been sufficiently large and suitably representative of the range of student teacher reflection reported elsewhere to support their conclusions, their reductionist approach does little to enhance current understanding of reflection.

In many respects, Loughran (1996) adopts a similarly reductionist approach, although his recognition of the complexity of reflection appears considerably greater than that demonstrated by Tsang & Wong (1995). His study involved 19 secondary student teachers enrolled in a one year postgraduate diploma, although he collected intensive data (journal entries, interviews and video footage) from only four participants. His study extended for an academic year and is, thus, of considerably longer duration than other studies reviewed so far.

In contrast to Tsang & Wong (1995), Loughran looks at the processes as well as the content of reflection. He coded his data according to Dewey's phases of reflective thinking, which Loughran refers to as suggestions, problem, hypothesis, reasoning and testing. Although he notes Dewey's concerns about viewing these stages as discrete, he seemed to have no reservations about using them as discrete categories for analysis. He also undertook a content analysis of journal entries, using grounded theory methods (Glaser & Strauss, 1967) rather than a predetermined framework like that used by Tsang & Wong. He found that all participants reflected and that some became more reflective over time. Those who did so were "more likely to reflect on issues that are further removed from themselves" (p.103).
Loughran reached these conclusions by counting, graphing and tabulating frequencies of content of reflection and the five processes he saw as constituting reflection. He also tabulated what he referred to as instances of wholeheartedness, responsibility and openmindedness. Although willing to accept that attitudes and emotional qualities are linked to reflection, he appears to have relatively little understanding of their importance (Fletcher, 1997). He notes, for example, that:

*The affective domain is important because a 'good' lesson can encourage a student-teacher to reconsider the learning from a teaching experience, while a 'bad' lesson (for some) might cause them to dismiss the episode completely and therefore limit their opportunities and pathways into retrospective reflection.* (p.114)

Those who find his view of the affective dimensions of reflection simplistic would probably give little credence to his attempts to quantify and tabulate the presence of emotional qualities and attitudes. They might also argue that the inherent difficulties associated with attempting to reduce a complex process to discrete parts require that his charts and graphs be viewed with considerable caution. They might consider his case studies more useful, though, because they provide a context for the participants' reflection and for Loughran's interpretations, as well as allowing him to draw on a range of orientations to reflection where relevant.

Ross (1989) and Sparks-Langer et al. (1990) also emphasise measurement. Drawing respectively on Kitchener & King's (1981) stages of reflective judgment and Gagne's (1968) hierarchy of thinking, they develop hierarchical frameworks consisting of seven levels or stages. Ross' framework constitutes an epistemological model. At stage one, the world is viewed as simple, knowledge is seen as absolute, and authorities are regarded as the source of all knowledge. At stage two, there is a perception of legitimate differences in viewpoint, a beginning ability to interpret evidence, and a growing awareness of the difference between unsupported personal belief and evidence. At stage seven, the highest level, there is an ability to make objective judgments based on reasoning and evidence, and to modify judgments according to new evidence. In contrast, Sparks-Langer et al.'s framework, focuses on the language of explanation. Level two, for example, involves simple description and no explanation; level four involves explanation with tradition or personal preference given as the rationale; while level seven involves explanation with consideration of ethical, moral, political issues.
These hierarchical frameworks were used to code data which, in Ross' study, consisted of assignment papers submitted for assessment by 25 elementary student teachers during the third year of their program. In Sparks-Langer's study, undertaken with 24 third and fourth year student teachers, half of whom were enrolled in an elementary program, and half in a secondary program, data consisted of interview transcripts and reflective journals. As in Tsang & Wong's study (1995), it is not clear whether these journals were assessed.

Ross found that most student teachers usually demonstrated a low level of reflection, although almost all demonstrated a high level of reflection occasionally. Sparks-Langer et al., on the other hand, found most students to be moderately, but not consistently, reflective. These findings need to be viewed with considerable caution, though, for a number of issues warrant further discussion.

First, to what extent might data collected from assignment papers submitted for assessment be influenced by attempts to accommodate perceptions of the reader's expectations (Francis, 1995; Hatton & Smith, 1995)? In other words, how trustworthy (Lincoln & Guba, 1985) is Ross' data? Second, is the effectiveness of these coding schemes limited by their respective emphases on reflective judgment and the language of explanation? Does this emphasis on aspects of reflection more amenable to measurement distort their findings? Third, how can linear coding schemes recognise the complex and multifaceted nature of reflection? Finally, to what extent can such frameworks take account of individual differences in communication skills, and preferred learning styles which might impact on the nature of reflection?

Although Ross appears unconcerned about such issues, Sparks-Langer et al. have some misgivings about their linear framework. Notably, they are the only authors represented in this cluster who express qualms about the adequacy of their approach. While their suggestion that a dual coding scheme be used to distinguish between reflection of a technical and moral nature seems to indicate a growing awareness of the complexity of reflection, a considerably more sophisticated form of representation may be required if the many aspects of reflection indicated by the different orientations reviewed in
Chapter One are to be recognised and validated. This issue is addressed in more detail later when studies representing the third cluster are investigated.

In contrast to the studies reviewed thus far, the following studies show considerably more awareness of the potential contributions of different orientations to reflection. They are also more inclined to explore critically the potential contributions of these orientations to enhancing understanding of reflection. Furthermore, because these studies are more aware of the complexity of reflection, they are less inclined to adopt simplistic forms of measurement.

**STUDIES SHOWING GREATER AWARENESS OF THE COMPLEXITY OF REFLECTION**

Greater alertness to the complexity of reflection led the writers reviewed below to adopt more sophisticated approaches in their efforts to identify evidence of reflection. As within the previous cluster, there are differences in how they conceptualised and attempted to identify reflection. Three broad approaches are discussed: the development of more broadly encompassing conceptual frameworks; an emphasis on connections and meaning; and a focus on the characteristics of reflective student teachers, rather than on reflection *per se*.

Some of the studies reviewed below were selected because of their seemingly more informed and insightful approach to issues raised earlier in this chapter. Hatton & Smith (1995), for example, address a number of concerns which Pultorak (1993; 1996) raises but fails to explore. Similarly, Rovegno (1992) proposes a conceptual framework which includes, but extends considerably beyond that developed by Ross (1989). Likewise, it could be argued that Harrington, Quinnleering & Hodson (1996), Clarke (1994; 1995) and Tann (1993) develop aspects of Tsang & Wong’s (1995) and Loughran’s (1996) work. Other studies (e.g., Korthagen & Wubbels, 1995; LaBoskey, 1994) were selected because they adopt different conceptualisations and approaches to identifying reflection than those reported thus far.

**More Encompassing Conceptual Frameworks**

Like Pultorak (1993; 1996), Hatton & Smith (1995) and later Smith (1997) investigate links between strategies used to promote reflection and the extent
and nature of ensuing reflection. Data, consisting mainly of written reports submitted for assessment, written self evaluations, responses to video tapes of participants’ teaching, and interviews between critical friends were collected from 60 secondary student teachers during the fourth and final year of their program. In an extension of the 1995 study, Smith (1997) collected similar but less comprehensive data from 20 additional participants.

Unlike Pultorak, Hatton & Smith drew on a range of orientations to reflection, including Schon’s reflection-in-action. Their definition of reflection as "deliberate thinking about action with a view to its improvement" (p.40) in many respects, therefore, seems surprisingly narrow, especially if they associate deliberate thinking with analytical thinking and improvement with solutions. On the other hand, they might readily acknowledge that it is possible to deliberately adopt a contemplative or intuitive approach. Similarly, they might see improvement encompassing not only notions of mastery and problem solving, but also harmony and transcendency. Whether they would acknowledge intuition, contemplation, harmony and transcendency as possible aspects of reflection is unclear. Although their descriptors of different types of reflection suggest not, their definition appears nonetheless to have the potential to incorporate these aspects.

A conceptual framework emerging from Hatton & Smith’s preliminary analysis of the data were subsequently used to identify four types of writing - **descriptive writing**, **descriptive reflection**, **dialogic reflection**, which involves "weighing competing claims and viewpoints, and then exploring alternative solutions", (Hatton & Smith, 1995, p.45) and **critical reflection**. All but the first of these were classified as different types of reflection. Hatton & Smith found most evidence of descriptive writing which involved the reporting of events or literature without reflection. Of reflective writing, descriptive reflection was most common and critical reflection least common. They conclude that reflection is most likely to be demonstrated when strategies involving critical friends or collaborative discussion in a supportive and trusting environment are adopted. Although limitations associated with assessed material referred to previously also apply to Hatton & Smith’s work, their study raises several important issues.

First, as Hatton & Smith point out, for writing to be identified as reflective, it must satisfy certain criteria which impose particular requirements concerning
language patterns and syntax. In effect, argue Hatton & Smith, these requirements amount to a reflective writing genre. Distinguishing between mastery of a reflective writing genre and reflection thus becomes problematic. If, as Hatton & Smith suggest, socio-economic background impacts on mastery of this genre, then equity as well as methodological issues arise when attempting to identify evidence of reflection.

Second, typical expectations of academic writing "are in many ways the antithesis of the personal, tentative, exploratory and at times indecisive style of writing which would be identified as reflective" (Hatton & Smith, p.42). Such expectations may inhibit reflective writing, but not necessarily reflection. Again, it is necessary to distinguish between the ability and willingness to write in a reflective style and the ability and willingness to reflect. It is also important not to discount the possibility that student teachers may be more reflective than their writing suggests.

Third, it could be argued that studies which analyse written data for evidence of reflection place undue emphasis on the text produced. Given the above concerns, it might be valuable to focus more on the writing process than the product. While proponents of narrative reflection have long argued that writing is a process of constructing meaning and finding one's voice, more recently, there seems to be increasing appreciation in the general literature about reflection of the importance of the writing process. Hatton & Smith (1995), Perry (1995) and Tann (1993), among others propose that description establishes a contextual base for understanding. Thus, it might be more appropriately seen as a vital process in reflection than evidence of low level reflection.

Just as Hatton & Smith extend Pultorak's work by introducing the above complexities which the latter apparently overlooked, Rovegno's (1992) study extends Ross' (1989) conceptual framework referred to earlier in this chapter. Although both Rovegno and Ross were influenced by Kitchener & King's (1981) stages of reflective judgement, Rovegno drew on Belenky, Clinchy, Goldberger & Tarule's (1986) seminal work into women's ways of knowing to incorporate a personal, intuitive and emotional dimension entirely missing from Ross' work. Citing Belenky et al., Rovegno (p.493) describes five ways of knowing, as follows:
(a) silence (women who felt voiceless and assumed they could not learn from hearing others),
(b) received knowledge (women who listened to the voices of others),
(c) subjective knowing (women who listened to their own inner voice),
(d) procedural knowing (women who listened to the voice of reason), and
(e) constructed knowing (women who integrated the voices).

The ability of her conceptual framework to encompass more than analytical thought suggests that it might have considerably more potential to enhance understanding of reflection than those proposed earlier in this chapter.

Nevertheless, Rovegno's definition of reflection is somewhat unclear. Initially she implies that reflection is a process of "constructing knowledge" (p. 493). Later, she states that reflection is "a personal act of constructing knowledge based on confidence in one's inner voice" (p.508). Has she narrowed her definition to include only subjective knowing, or is she simply emphasising that confidence in one's inner voice is necessary for reflection? Given the developmental nature of her framework one assumes that she sees subjective knowing as the starting point for reflection. Certainly, she emphasises that those who favour silence and received knowing will find reflection extremely difficult as they have not learnt to trust their own voice. Presumably, however, she would acknowledge that reflection may also be involved in procedural or constructed knowing.

Using data from non-participant observation in practicum settings, interviews and documentation including written lesson evaluations, unit evaluations and dialogue journals, Rovegno profiled three elementary student teachers enrolled in an undergraduate physical education program. The stage of the program in which the participants were enrolled is not disclosed. One of the three student teachers strongly preferred received knowledge and discounted her own evident ability to construct knowledge. Consequently, although a dedicated student, she found reflection difficult and unsatisfying. Her image of the teacher as an authority "left little room for ambiguity, recognizing dilemmas, weighing alternatives, or valuing the role of personal philosophy and beliefs in teaching decisions" (p.500). In contrast, the other two students valued making connections among their beliefs, experiences and knowledge learnt from an authority. Rather than listening to one truth, they heard several voices, saw situations from multiple perspectives and constructed their own interpretations.
In comparison to those reviewed previously, Rovegno's conceptual framework has several strengths. It allows her to develop more comprehensive profiles of student teachers' reflection than those enabled by the more limited frameworks outlined in the previous section. In addition, although her study involves only three participants, her framework appears to provide a useful structure for studies involving larger numbers. Furthermore, as noted previously, it acknowledges the emotional and intuitive aspects so often overlooked by other studies. Nevertheless, it could be argued that her framework retains a bias towards analytical thought in that it appears to regard subjective knowing, with its emotional and intuitive components, less highly than procedural knowing based on rational thought.

**Emphasis on Connections and Meaning**

In a similar way to which Rovegno (1992) extends Ross' (1989) study, Harrington et al. (1996), Clarke (1994; 1995) and Tann (1993) appear to extend Tsang & Wong's (1995) and Loughran's (1996) work. To some extent, the latter five writers all utilised content analysis. Tsang & Wong and Loughran focus much more on measurement, however, whereas Harrington et al., Clarke and Tann are concerned more with meaning, complexity and connections. As such, the latter three seem to make a more meaningful contribution to the literature about reflection.

Like Loughran, Harrington et al. (1996) investigate the role of Dewey's notions of openmindedness, wholeheartedness and responsibility. Yet unlike Loughran, Harrington et al. explore possible variations of these qualities or attitudes and the connections between these variations and consequent reflection. They found that some student teachers appear more able to see situations from a teacher's perspective, others from a child's perspective, and others from a more inclusive perspective. Although all these student teachers could be said to be more openminded than their counterparts who could see no perspective other than their own, there were differences between the reflection emerging from these variations of openmindedness. These writers found similar variations in wholeheartedness and responsibility. In many respects, these finer shades of meaning appear to do more to enhance understanding of reflection than graphs and charts of frequencies of incidents of reflection.
In another example, Clarke (1994; 1995) develops case studies of four secondary student teachers' reflection during a 13 week practicum. He uses a conceptualisation based on Schon's notion of reflection-in-action to analyse data from supervisory discussions and stimulated video recall sessions. Although several of the criticisms related to Mackinnon's (1987) understanding of the complexity of Schon's orientation reviewed earlier in this chapter could also apply to Clarke's work, Clarke nevertheless extends on Tsang & Wong's (1995) and Loughran's (1996) studies.

Of the seven categories of reflective themes which emerged from Clarke's data, one led to a notably more holistic perspective. When participants developed a sense of ownership of their practice, they tended to focus on their practice as a whole. In contrast, those who lacked a sense of ownership, continued to focus on specific aspects of their practice which seemed to preclude them from developing a more holistic understanding. He also noted a range of emotions which seemed to precipitate reflection. These examples suggest that Clarke's emphasis on connections between the data might have considerably more potential for further enhancing understanding of reflection than the reductionist approaches of Loughran (1996) and Tsang & Wong (1995).

Like Clarke, Tann (1993) also focuses on the role of connections in reflection. To Tann, reflection involves identifying, exploring, analysing, problematising, comparing and reformulating one's personal theory or "set of beliefs, values, understandings, assumptions" (p.55) about teaching. She argues that until student teachers are aware of their personal theories they are unlikely to make connections with publicly recognised theories. It is interesting to speculate on links between her notion of personal theory as a medium for connecting with alternative theories in a way that enhances understanding and notions of universal interconnectedness underpinning many Eastern traditions and ecological and holistic perspectives in general. This is explored more fully in Chapters Three and Four as a possible direction for further research.

Tann's study involved 32 first year student teachers in the first year of an elementary B.Ed program during a four week practicum. Data consisted of student teachers' lesson plans and evaluations of these plans. Unlike several studies referred to previously involving similarly large numbers, Tann decided
against basing her analysis on a predetermined conceptual framework. While acknowledging that such frameworks might be useful for initial analysis, she argues that "they might well miss rich insights into student thinking" (p.59). She also rejected linguistic analysis, citing similar concerns to those expressed by Hatton & Smith (1995). As well, she refers to the difficulties in accessing and analysing "deep-structure meanings" by "surface linguistic features" (p.60), a methodological challenge discussed in more depth in Chapter Four. Because of her focus on connections, she decided instead to use thematic analysis.

Surprisingly, given Tann's interest in personal theories, her analysis focuses almost entirely on processes of analytical thought. She shows little awareness of the affective dimensions of personal theories and their potential for establishing connections. Similarly, she seems unaware of the arguments of proponents of narrative orientations with whom, philosophically, she seems in some ways aligned. This apparent lack of awareness leads her to rate relatively lowly evaluations "written in a 'story' style" (p.64) although she acknowledges that "this appeared to be a necessary stage for students to experience before they could begin to see patterns, trends, recurrent issues which could then form the basis of a more analytical approach" (p.64). While Tann seems to have an implicit awareness of the importance of affective dimensions, she has not made this understanding explicit. Despite her interest in connections, her conceptual understanding of the complex nature of these connections seems unduly constrained by an over-reliance on analytical perspectives. A similar tension between appreciation of the complexity of reflection and the constraints imposed by an over-reliance on analytical perspectives is also evident in the studies reviewed below.

**Characteristics Of Reflective Student Teachers**

Many argue that when dealing with complex phenomena such as reflection, description may be preferable to definition. They point out that efforts to make meanings more precise may result only in loss of clarity (Smith, 1990). As well, they assert that definitions can operationalise and reduce what are best understood as complex processes and abstract values into behaviour that is "generalizable, observable, and teachable" (Richardson, 1988, p.14). The studies reviewed here highlight the issue of description versus definition, and consequent implications for identification of reflection.
Because of its complexity, LaBoskey (1994) prefers to describe rather than define reflection. She sees reflection as a process of constantly envisioning and considering alternatives. While reflection involves making decisions, she argues that these are never conclusive but always subject to reconsideration. In this sense, she considers that reflection is characterised by a state of flux. She asserts that the constant repositioning which constitutes this flux may involve many processes and refers specifically to emotional and intuitive responses, systematic and logical analysis, and contemplation. As such, she draws on a range of orientations to reflection.

In contrast, Korthagen & Wubbels (1995), who are influenced primarily by Schon's orientation, prefer to define reflection. To them, "reflection is the mental process of structuring or restructuring an experience, a problem or existing knowledge or insights" (p.55). Like LaBoskey, however, they acknowledge that reflection is more than "a purely rational process" and argue that "emotions and attitudes play a crucial role" (p.70).

Given their respective preference for description and definition, it seems somewhat ironic, therefore, that LaBoskey initially proceeds to attempt to measure reflection, while Korthagen & Wubbels, perhaps more astutely, recognise the enormity of this task, and concentrate on identifying characteristics of reflective student teachers. Yet it is LaBoskey who eventually appears to develop more insight into the affective aspects of reflection, although ultimately, she arrives at these insights through description, rather than measurement. One wonders whether her decision to describe rather than define reflection, may have allowed her to move beyond boundaries which definitions tend to impose (Bullough, 1989).

LaBoskey's study is of particular interest because its purpose is somewhat similar to that of the present study. She investigates the nature of and changes in reflection of twelve student teachers enrolled in a postgraduate secondary teaching program, and attempts to identify factors which might impact on the development of reflection. Korthagen & Wubbels' investigation into the characteristics of reflective student teachers, on the other hand, constitutes a small part of a larger study into the effectiveness of a secondary mathematics teacher education program. LaBoskey's study is longitudinal, covering an academic year, while Korthagen & Wubbels present a snapshot
taken at a particular period in time during the larger longitudinal study (see also Wubbels & Korthagen, 1990).

The two studies share some similarities, particularly in their selection of participants. In both cases participants were selected on the basis of their scores in a questionnaire. LaBoskey’s questionnaire asked participants about their initial perceptions of teaching and learning. Using a simple numerical scale, she then coded the reflectiveness of their responses to determine their initial reflectiveness. Subsequently, she selected six participants identified as reflective and six identified as non-reflective. In a similar way, Korthagen & Wubbels selected three participants, two of whom they regarded as reflective and one as less reflective. They asked student teachers to report on their external / internal orientation to learning, which they then equated with likely reflectiveness. Although both approaches have weaknesses, the self-reporting nature of Korthagen & Wubbels’ questionnaire might leave less room for misinterpretation by the researcher.

Both Korthagen & Wubbels and LaBoskey then developed case studies of participants, with the former using interview transcripts and the latter data gathered primarily from written assignments. Korthagen & Wubbels’ snapshot approach precluded investigation of any changes in reflection while LaBoskey’s findings indicated that initial differences between the reflective and non-reflective student teachers remained stable, suggesting that their teacher education program had little impact on their propensity to reflect. If replicated by further research, these findings appear to raise serious implications for teacher education programs which place a particular emphasis on reflection.

There seem several limitations, though, in LaBoskey’s method. First, her data consisted mainly of material submitted for assessment. Potential difficulties associated with this have been described previously. Second, she does not explain how she arrived at her initial criteria for identifying reflection. Third, her criteria appear to bear only partial relationship to her description of reflection. Based on three categories - problem setting, means-end analysis and generalisation - they ignore non-analytical aspects of reflection and appear to overlook the importance she supposedly attaches to the potential role of emotion and intuition in reflection. Fourth, the simplistic numerical weighting given to various criteria fit oddly with her acknowledgment of the complexity
of reflection. Fifth, like Loughran (1996) she relies mainly on numerical scoring to identify changes in reflection, rather than exploring instances of change through her much more informative case studies.

It might be argued that many of the above contradictions arise from the inevitable methodological constraints involved in identifying a process as complex as reflection. LaBoskey, however, neither acknowledges nor offers explanations for these contradictions, and in this respect her study is disappointing. That her study, despite its limitations, was awarded a prestigious educational research prize indicates the extent to which research into reflection is still essentially confined to analytical perspectives. So too, does Korthagen & Wubbels' decision to adopt the methods they did, despite Korthagen's (1993) discussion two years previously of the need to move beyond the constraints imposed by analytical perspectives.

Arguably, LaBoskey's most important contribution to the literature is her identification of characteristics typically associated with the more reflective student teachers. In contrast to Korthagen & Wubbels, who identify what could be seen as somewhat predictable characteristics closely associated with analytical thinking, LaBoskey identifies attributes which have the potential to explain and enrich current understanding of the role of emotion in reflection. Key amongst these attributes is the possession of a passionate creed.

According to LaBoskey, more reflective student teachers tend to be guided by strong beliefs, or passionate creeds, which permeate their thoughts and feelings about teaching and inspire them to reach towards what is important to them as teachers. Because they actively seek to make sense of their passionate creed and to understand the implications for their teaching, they have a propensity for asking "Why?" questions. Less reflective student teachers, in contrast, are unlikely to have a passionate creed, are more attracted to conformity and more likely to ask "What works?". LaBoskey argues that because passionate creeds play such an important role in reflection, they need to be explored further if reflection is to be more fully understood.

In summary, the studies reviewed above reveal considerably more appreciation of the complexity of reflection than those in the previous cluster.
On the whole, however, they remain unwilling or unable to move beyond the constraints of analytical perspectives. In contrast, those reviewed below seek to transcend these constraints, albeit with varying success.

STUDIES ATTEMPTING TO TRANSCEND ANALYTICAL PERSPECTIVES
Only two of the 45 identified studies of student teacher reflection considered for inclusion in this review (Sumsion, 1995; Yonemura, 1991) attempted to any great extent to move beyond what this thesis contends are the overly analytical perspectives dominating much of the research into reflection in teacher education. Consequently, to add depth and breadth to the following discussion, two studies involving experienced teachers (Miller, 1994; Louden, 1992) which seek to venture beyond analytical perspectives are also included. The studies reviewed below focus respectively on the use of two dimensional conceptual frameworks, exploration of personal theory, and contemplation as tools and techniques for transcending these constraints.

Two Dimensional Conceptual Frameworks
Both Louden (1992) and Sumsion (1995) posit that two dimensional frameworks might provide a more effective means of acknowledging and investigating the complexity of reflection than the one dimensional frameworks referred to previously. Consequently, both develop matrixes to identify evidence of reflection, determine the nature of that reflection and develop profiles of reflective styles. Conceptually, however, their matrixes differ.

In many respects the more conventional of the two, Louden's matrix draws upon the range of orientations to reflection identified in Chapter One. He labels one axis interests and the other forms. The former refers to the goal or purpose of reflection; the latter to the process. The interest dimension derives primarily from the work of Habermas (1973) and Van Manen (1977) and includes the categories technical, personal, problematic and critical. As such, Louden subdivides Van Manen's level of practical reflection into personal (in the narrative sense) and problematic (resolution of problems of professional action). Unlike Van Manen, however, he does not imply a hierarchical relationship between the categories. The categories on the form dimension - introspection, replay and rehearsal, enquiry, and spontaneity - represent the different processes of reflection and are distinguished according to the interrelationship between thought and action. Introspection, for example, is "a
process of thinking or feeling separated from action" (p.192) while spontaneity is akin to Schon's notion of reflection-in-action which takes place at the moment of action.

Adopting a more encompassing view, Sumson argues that different orientations to reflection highlight different facets of what is ultimately a holistic process and that reflection is best conceptualised as a search for meaning. She asserts that there are two fundamentally different approaches to this search for meaning. One is dependent on what could be called traditional Western conceptions of logical and systematic analysis; the other is not. Thus, she labels her axes rational and non-rational dimensions of reflection. Derived from Ross (1989) and Sparks-Langer et al. (1990), the categories on the rational dimension are description, explanation, recognition of alternatives, recognition of inconsistencies and consideration of consequences and implications. Drawing on literature associated with emotions, intuition, and beliefs, Sumson develops corresponding categories for the non-rational dimension which she terms reaction, insights into reaction, recognition of beliefs, values and attitudes, contemplation of beliefs, values and attitudes, and reconsideration of beliefs, values and attitudes. Succeeding categories build on those before and are, therefore, indicative of more complex reflection. She emphasises, though, that more complex levels are not inherently more worthwhile but that different types of reflection may be more appropriate in different contexts.

Sumson uses the matrix to develop profiles of the reflective styles of 12 early childhood teachers, half of whom were in the second year of their program and half in their third and final year. Her study provides a snapshot of these student teachers at a particular point in time and has no longitudinal dimension. In contrast, Louden profiles an experienced secondary teacher, Johanna, over a 12 month period.

Interview transcripts constitute the main source of data for each study and are coded according to the categories on the respective matrices. Noting interrelationships between processes and content, Louden concludes that Johanna tended to reflect on personal issues through introspection and on problematic issues through replay and rehearsal, enquiry, and spontaneity. Neither he nor Sumson found much evidence of technical or critical reflection. Yet, like LaBoskey (1994), Sumson found that more reflective
student teachers appear to be guided by underlying themes which appear to act as scaffolds for their developing understanding of what it means to be a teacher. The considerable variation in reflective style amongst the more reflective participants led Sumison to conclude that logical analysis should not necessarily be viewed as an inherent component of reflection.

Compared to others reviewed thus far, in some respects, these studies offer alternative schemas with considerable potential to recognise the multifaceted nature of reflection. Louden's introspection category, for example, seems potentially able to incorporate Eastern traditions of contemplation as previously described by Tremmel (1993) and Yinger (1990). Similarly, Sumison's non-rational axis provides a justification for the inclusion of aspects such as passionate creeds. In addition, it might be argued that the non-hierarchical nature of their frameworks validate different aspects of reflection and are thus less biased towards conceptualisations of reflection as solely or predominantly analytical thought than many linear schemas (e.g., Rovegno, 1992; Sparks Langer et al., 1990; Ross, 1989). Furthermore, Louden and Sumison argue that their two dimensional frameworks provide more scope for acceptance of individual styles of reflection, and "a more subtle and textured account" of reflection than a linear framework (Louden, p.209). Moreover, as Sumison points out, while not offering the depth of narrative accounts, they can be used in studies involving a relatively large number of participants.

Both studies are seriously flawed, however, particularly in a philosophical sense. Although Louden and Sumison argue that the categories of their matrixes are not rigid or definitive distinctions, the very nature of the matrix structure contradicts their arguments. The dualism inherent in Sumison's matrix is especially contradictory, given her emphasis on the holistic nature of reflection. As Sumison acknowledges, matrixes encourage "a reductionist approach to analysis which artificially fragments and distorts" (p.138). Furthermore, she admits that while her non-rational dimension usefully highlights a long overlooked aspect of reflection, this paradox remains problematic. So, too, does "the use of an indisputably analytical tool to understand the non-rational" (p.138). Ironically, therefore, these matrixes perpetuate many of the limitations associated with an over reliance on analytical thought which Sumison, in particular, seeks to overcome.
Methodologically, these matrixes present additional difficulties. Sumison, for example, notes that the complexity of the matrix hinders inter-coder reliability, especially for data which do not obviously involve a second dimension. She concludes that her matrix is "too complex to use reliably, yet too simplistic to do justice to the complexity of reflection" (p.138). While Louden remains silent about such issues, it seems likely that these methodological difficulties would apply equally to his matrix. If such conceptual frameworks are to be used, it seems essential that their limitations be acknowledged.

**Exploration Of Personal Theory**

In contrast to the conceptual frameworks described above, Yonemura (1991) adopts a narrative approach to investigating and identifying reflection. She sees reflection as a process of understanding one's *inner world* and its implications for practice. To Yonemura, *inner worlds* are best described in terms of "images, personal philosophy, rules, practical principles, rhythms, and narrative unity" (p.398, citing Connelly and Clandinin, 1988).

Yonemura’s study focuses on a graduate student teacher, Kate, during the two years in which she was enrolled in a Masters degree program in early childhood education. One of only five of the 45 studies originally identified to focus on early childhood rather than elementary or secondary student teachers, Yonemura’s study also adds a longitudinal dimension lacking in most other studies of student teacher reflection.

Using data collected through interviews, observation of practice teaching supervisory conferences, journal entries and various assignment papers, Yonemura explores Kate’s personal philosophy, values, beliefs and images to understand her inner world. Kate’s story begins with an overview of her *cherished values*, and tells of the tensions and conflicts which arise when she attempts to put her images, personal philosophy, and cherished values into practice. Kate’s cherished values, or passionate creed (LaBoskey, 1994) include a belief in the need for children to experience autonomy in their learning. Interestingly, Rovegno (1992) and LaBoskey (1994) found a similar belief in the more reflective students in their studies, which suggests that reflective student teachers may share some common characteristics and interests.
Kate's profile supports Tann's (1993) argument that understanding personal theories or inner worlds assists in establishing connections with public theories. It also illustrates what Yonemura refers to as a dialectical relationship between past and present experiences and the role of emotion in making sense of those experiences. In elaborating on the importance of images, emotions and beliefs as primary aspects of reflection, Yonemura extends the tentative efforts of several studies reviewed in the previous cluster to transcend conceptualisations of reflection as essentially analytical thought.

As Hadfield & Hayes (1993) point out, critics of narrative approaches might argue that Yonemura's study, like narrative accounts in general, focuses too heavily on the person and insufficiently on the process of reflection. On the other hand, if reflection is indeed an inherently personal process, then it can be argued that one must first understand the person to understand reflection (Tann, 1993). Additionally, it could be argued that those who are accustomed to reports of reflection which focus on analytical thought might find it difficult to recognise the significance of other aspects of reflection, such as emotions and images. Those who aim to heighten awareness of these aspects, therefore, appear to have a responsibility to make explicit why they consider these aspects equally important to reflection. This challenge is addressed in the following chapter.

The final study differs from others reviewed in this chapter. Instead of attempting to identify or describe evidence of reflection, Miller (1994) focuses on the experience of reflection. Moreover, his is the only study reviewed which derives solely from a contemplative orientation to reflection.

**Experience Of Contemplation**

Miller (1994) advocates contemplation as a means of transcending the dualism characterising Sumson's (1995) and Louden's (1992) studies. Like Tremmel (1993), he sees contemplation involving a form of understanding beyond that attainable through rational thought. Rather, it is based on a deep sense of connectedness such that "the person is not thinking or reflecting on something but in some sense has become part of what he or she sees" (Miller, p.55).
Unfortunately, the details of Miller's study are vague. Basically, he describes his graduate students' experiences of meditation, a form of contemplation, as reported in their journals maintained as part of course requirements. He does not disclose the number of participants, nor does he explain whether the journals were assessed. Data analysis involved identifying key themes emerging from journal entries.

Initially, Miller notes, many participants found meditation difficult, possibly because of their strong task-orientation. As he explains, "one way to look at meditation is that it is simply being present in the moment, which runs counter to the whole concept of striving to achieve a specific task or objective" (p.61). With perseverance, though, participants reported several benefits. These included heightened self understanding; feelings of calmness and centredness; an ability to view their experiences from a larger perspective; and a growing sense of interconnectedness and interrelatedness. Some of these benefits, such as the broadening of perspectives, are similar to those associated with more analytical perspectives. This appears to add weight to claims (e.g., MacKinnon, 1996; Sumson, 1995) that reflection is a holistic process, only partially understood from any one perspective or orientation.

While it could be argued that Miller's study offers few insights concerning identifying evidence of reflection, at least from an analytical perspective, it suggests that an alternative approach to identifying evidence of reflection might be to look for indications of reflection having taken place. The benefits of contemplation as reported by Miller's participants might well constitute such an indication. If combined with LaBoskey's (1994) and Korthagen & Wubbels' (1995) interest in the characteristics of reflective student teachers, a more indirect approach of this nature may ultimately do more to enhance understanding of reflection than approaches which concentrate solely on direct observation and measurement.

CONCLUDING COMMENTS
As this chapter has demonstrated, studies attempting to identify evidence of student teachers' reflection have been characterised by their diversity of approach; the varying extent to which they recognise the complexity of reflection; their frequent reluctance to challenge the constraints imposed by a reliance on analytical perspectives; and the methodological difficulties encountered in the few attempts to transcend those constraints.
Consequently, despite the considerable number of studies which have sought to identify evidence of student teacher reflection, our understanding of this phenomenon remains limited. Many but by no means all studies, for example, suggest that student teachers tend to engage in relatively little critical reflection. Similarly, there is little agreement about the extent to which other aspects or types of reflection can be promoted.

As such, it could be argued that there is a lack of convincing evidence to support the current emphasis on reflection in preservice teacher education programs. On the other hand, this lack of evidence, in part, might be due to the paucity of longitudinal studies, especially those involving more than a very small number of participants, and extending beyond a few weeks or months. Further studies, preferably of a longitudinal nature, therefore, seem warranted provided they attempt to address issues which appear to contribute to the apparent impasse in current research.

In particular, it seems that future studies must confront three major challenges. The first is to develop greater understanding of the complexity of reflection, particularly the contribution of aspects other than analytical thought. The second is to find ways of loosening the methodological constraints currently impeding the exploration, identification and representation of this complexity, even though this may involve taking considerable methodological risks. The third involves acknowledging that "there are elements of understanding that will always evade any theoretical understanding" (Gillette, 1988, p.308) and that any representational mode will have a limited ability to capture the richness, complexity and diversity of reflection. These challenges are addressed in the following two chapters.