QUESTIONS OF VALUE:

AN INQUIRY INTO THE NATURE OF RESEARCH

ON TEACHER THINKING

by

DEBORAH COURT

B.A., University of British Columbia, 1974, M.A., University
of British Columbia, 1984.

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Department of _Curriculum and Instruction, Faculty of Education_

The University of British Columbia
Vancouver, Canada

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Abstract

Early in this dissertation a defensible conception
of teaching is laid out. This conception specifies that
there are learning conditions for teaching, whereby teachers
do their best to bring about learning in students, and that
there is a moral condition for teaching, whereby teachers
accord students dignity and respect. With this conception
laid out, analyses are undertaken of literature on teacher
thinking. The main purposes of these analyses are to see
what conception of teaching is implicit in studies of
teacher thinking, and to compare this conception with the
conception presented early in the dissertation.

As a framework for analysis of literature on
teacher thinking, Lakatos' idea of a research program is
used. Literature on teacher thinking is viewed as a research
program, the "hard core" of which is the implicit conception
of teaching. Lakatos' idea of "problemshifts" is used to
examine the moves from the study of teacher decision making,
to teachers' practical knowledge, to teacher reflection.

Studies of decision making and practical knowledge
are found to be based on a conception of teaching which
meets the learning conditions of teaching but not the moral
condition, because these studies investigate teachers'
knowledge but not their values and beliefs.

Several reasons for the lack of investigation into values are postulated and explored, among these the possibility that values are seen by researchers as tacitly held and therefore inarticulable. Investigation of Polanyi's idea of tacit knowing leads to the argument that material which is tacitly held can indeed be articulated.

The concept of values is then explored and it is argued that teachers' values should be investigated. The main reason why this investigation is important is that teachers' classroom actions and decisions are to a large extent motivated by their values. To understand teacher thinking, it is argued, researchers must understand how teachers' values affect their practice. It is also argued that to change and improve their teaching practice, and to meet the moral condition of teaching, teachers must gain insight into their own values.

From the study of practical knowledge, research on teacher thinking is shown to be moving to the study of teachers' reflection on their practice. Work on reflection is in its infancy, but examination of writing on teacher reflection indicates that this research focus may offer potential access to teachers' values in a way that previous research has not. It is suggested that if research into teacher thinking includes teachers reflecting on their values, improvement of practice could result, and the "hard core" of the teacher thinking research program could change to include the moral condition of teaching.

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Chapter One

Introduction

Research on teachers has been conducted almost as long as there have been schools. This research has moved from early work, which focussed mainly on identifying the traits of effective teachers, to present day studies of teacher thinking.

The purpose of this dissertation is to evaluate a portion of that research history, viewing studies of teachers' interactive decision making, teachers' practical knowledge and teachers' reflection on their practice as parts of a coherent research program on teacher thinking. The idea of a research program comes from the work of Imre Lakatos, whose paper on this topic will be discussed later in this chapter. Lakatos argues that research programs have an unquestioned "hard core" and a changing "protective belt", and that a move from one theory to another within a research program can constitute a "progressive or degenerating problemshift". These terms, mentioned in the statement of purposes below, will be explained in the ensuing discussion of the Lakatos paper.

Specifically, the purposes of this investigation are:

1) To identify educational norms through the explication of a defensible conception of teaching, and to use this conception of teaching as the main basis on which studies of teacher thinking will be evaluated.

2) To examine research on teacher thinking and identify the "hard core" of this research so as to determine

    a) What fundamental, unquestioned assumptions underlie this work?

    b) What conception(s) of teaching is/are implicit?

    c) How does this conception (how do these conceptions) relate to the conception of teaching explicated early in this dissertation?

    d) What questions do the assumptions and conception(s) implicit in this research allow us to ask and what questions do they discourage us from asking?

    e) What changes in the "protective belt" accompany the moves from the study of decision making, to practical knowledge, to reflection, and do these moves constitute "progressive problemshifts"?

3) To generate, based on the findings of these analyses, a set of recommendations for future research into teacher thinking.

One of the main vehicles for "unpacking" the implicit assumptions in this literature will be examination of the use of language by different writers. Concepts which are identified as needing clarification will frequently be investigated by ordinary language analysis.

It will be the case on two occasions that a discussion related to the main argument, while pertinent, is too lengthy to present in the main text without disrupting the general flow of argument. In these cases the discussion will be presented in an appendix.

This introductory chapter will begin with an overview of research on teachers, followed by a description of ordinary language analysis, and finally by a summary of Imre Lakatos' work on research programs.

A. Overview of research on teachers

From the earliest time, the major purpose of research on teachers, whether stated or unstated, has been to improve teaching practice. Understanding of what successful teachers do in classrooms has implications for the training of new teachers and the professional development of experienced teachers. Much research has been directed to understanding what successful teachers do.

Early research on teachers focussed mainly on identifying the traits of effective teachers. Techniques of measurement and analysis were few, and researchers often conducted their studies by asking students to describe

favorable and unfavorable characteristics of teachers they had known. Examples of this type of research can be found in the last century (for example, Kratz, 1896) and during the following fifty years (for example, Witty, 1947).

Researchers have not only sought student descriptions of teachers, they have also extensively observed and recorded teachers' classroom actions. Doyle and Ponder (1975) summarize this work by saying, "After more than sixty years of research, investigators have successfully isolated and described the frequency and patterns of a large number of specific behaviors. It is now possible to describe with some measure of confidence the behaviors teachers exhibit with regard to questioning practices, direct vs. indirect verbal influence, nonverbal communication, pedagogical moves, and the logic of teacher discourse, to name but a few" (p.184).

This research has yielded much valuable information and many ideas for improving practice. Ideas now accepted as truisms, such as that teachers do most of the talking in classrooms, tend to ask questions requiring factual recall, and often treat girls and boys differently, have all been documented through the observation of teacher actions. Despite the value of such studies, however, this kind of research does not take into account the nature of classroom life. Teacher actions do not occur in isolation. They are expressions of a whole human being acting in a context. In the last twenty years people like Jackson

(1968), Lortie (1975) and Goodlad (1982) have sought to describe and understand the complex milieu in which teachers operate.

Modern researchers have more sophisticated methods of data gathering and analysis, but some of their work is not dissimilar to the earliest studies of teachers. Current studies of 'expert' teachers (for example, Berliner, 1986), though more complex methodologically and having the advantage of knowledge gained through many years of research, are remarkably similar in intent to much earlier work. The "Pursuit of the Expert Pedagogue" (Berliner, 1986) seeks to identify the things good teachers do in classrooms, and the "Characteristics of the Best Teachers" (Kratz, 1896) really sought to do much the same thing.

It is rather as if we are visiting a foreign country again and again and gaining each time a deeper understanding of the lives of the natives. We are still interested in the meals they cook, in their politics and their religion, but now we are able to see these not as colorful oddities, but as meaningful practices inextricably bound in the web of culture.

Our repeated visits to classrooms have led us to much deeper understanding of the lives of the natives, both students and teachers. Here the metaphor breaks down, however, for while we would not presume to 'improve' on another country's cultural practices (the efforts of missionaries and empire builders notwithstanding), all

research into teaching should ultimately be seen to improve practice, and indeed, this has been the driving force behind the hundred years of research on teachers. Researchers sought for many years to describe teacher 'behaviors' and then teaching 'skills', with the idea that these could be communicated to beginning teachers and to experienced teachers wishing to improve their teaching. Only relatively recently have researchers sought to understand teachers' thinking, realizing that teachers bring to their profession distinctive personalities and varying bodies of personal experience. Teachers do not accept unquestioningly suggestions, ideas and curriculum changes which come 'down' to them. Better understanding of the nature of classroom life and of teachers' thinking thus has implications for the implementation of new educational programs as well as for teacher education and professional development. Researchers investigating teacher thinking are contributing to this understanding.

B. Ordinary language analysis

The conceptual investigations in this dissertation will be conducted largely through ordinary language analysis, and so a discussion of this method is in order. Ordinary language analysis, or conceptual analysis, is a useful method for helping us to 'step back from' and understand the ways in which we view the world. We view the world through a set of concepts, a conceptual structure, and

our language is the public embodiment of that conceptual

structure. We learn our concepts through learning language,

and studying language helps us to study concepts. Conceptual

analysis has its roots in Wittgenstein's linguistic approach

to philosophy, and though it has evolved since Wittgenstein

it can still be said that conceptual analysis assumes

basically this: "For a large class of statements--though not

all--in which we employ the word 'meaning' it can be defined

thus: the meaning of a word is its use in language"

(Wittgenstein, 1953, p.43). There is not, of course, one

meaning for the vast majority of words, but a variety of

usages and thus a variety of meanings and shades of meaning.

Investigating the different ways in which a word is used

gives us a kind of map of the meanings of that word.

Conceptual analysis is usually only undertaken

when we have a problem with some concept: it would be

foolish to analyze everything. In education, many frequently

used words like 'needs' (as in 'student needs' and 'needs

assessment'), 'intelligence' and 'education' itself are used

by different people in different ways, with different sets

of assumptions, and we may in educational discourse

frequently be talking at cross purposes with each other.

This does not mean that analyzing a concept will make clear

what the 'real' or'right' definition of that concept is. The

purpose is to better understand the assumptions and

connections which underlie our use of words. Soltis (1968)

states this well:

"...many of us...would be hard pressed if asked to spell out in single words the ideas contained in such ordinary concepts of education as teaching, learning or subject matter. Yet these very concepts are basic to any intelligent thought or discussion about education. Furthermore, I believe that an explication of these ideas would invariably result in the unveiling of important nuances of meaning which we unconsciously assume in our discourse and in our actions as students or teachers. As a result, we would not only become more sophisticated and careful in their use, but we would also gain a deeper insight into education as a human endeavor. This is the point of the philosophical analysis of educational concepts" (p.7).

In this spirit the concepts of decision, skills, values and reflection will be analyzed. These terms merit analysis by virtue of their importance in the literature that is to be examined in this dissertation and their unclear or conflicting uses in that literature.

C. Imre Lakatos and the evaluation of research programs

In a now famous paper entitled "Falsification and the Methodology of Scientific Research Programmes" (1965), Imre Lakatos argues that scientific theories cannot be evaluated in isolation, but should be seen in relation to

the theories which precede and supercede them. Such series

of theories form what Lakatos calls research programs.

Lakatos argues against several influential schools

of thought. One idea he disclaims is the positivistic notion

that any claim must be testable and its truth provable or it

is meaningless. For many years in science this was the

prevailing view, and because of it much creative speculation

was disallowed.

Lakatos claims that Kuhn (1962) and Polanyi (1958)

argue that scientific change from one dominant theory to

another is a kind of "mystical conversion" which is not

governed by the rules of reason but by "the psychology of

discovery". Lakatos calls this "truth by consensus" and

attempts to discredit the idea. He shows his scorn for the

"sociology of knowledge", which he says serves as "a cover

for illiteracy" when he retells a story recounted by Polanyi

(1958, pp.12-14) about how the audience of scientists at the

1925 meeting of the American Physical Society remained

firmly committed to Einstein's theory despite the remarks of

the society's president that he had overwhelming evidence

for the opposing theory of ether-drift. Polanyi suggests

that psychological, rather than rational factors were

responsible for the scientists' commitment to Einstein's

theory. Lakatos, however, reconstructs the series of

theories of which ether-drift was an earlier and Einstein's

a later member, and his "reconstruction makes the tenacity

of the Einsteinian research programme in the face of alleged

contrary evidence a completely _rational_ phenomenon and thereby undermines Polanyi's 'post-critical'-mystical message" (p.163).

In Lakatos' view Kuhn and Polanyi present scientific revolutions as something like religious conversions, with change occurring through the "psychology of discovery", whereas Lakatos himself agrees with Popper (1959) that scientific change is rational and occurs via the "logic of discovery".

Lakotos states that all scientific theories are fallible, but that we can neither prove nor disprove any of them. This leads to the question, if no theory can be disproved, then on what grounds can we ever eliminate any theory? We must eliminate some theories or there will be a chaotic proliferation. Lakatos suggests that to ensure the survival of only the fittest theories, their struggle for life must be made severe and a theory should be considered 'acceptable' or 'scientific' only "if it has excess empirical content over its predecessor (or rival), that is, only if it leads to the discovery of novel facts" (p.116).

Lakatos calls a series of theories _theoretically_ _progressive_ if each new theory "has some excess empirical content over its predecessor, that is, if it predicts some novel, hitherto unexpected fact" (p. 118). He calls such a theoretically progressive series of theories _empirically_ _progressive_ "if some of this excess empirical content is

also corroborated, that is, if each new theory leads us to the actual discovery of some new fact" (p. 118).

These are different criteria than the time-honored empirical demand that a satisfactory theory must accord with observed facts. In Lakatos' scheme, the criteria for judging a series of theories is that each succeeding theory should produce new facts. A series of theories is connected by a continuity which welds the theories into a research program.

A research program may be appraised, even after its elimination, for its heuristic power, that is, how many new facts it produced and how great its capacity was to explain the refutations and anomalies that arose during its growth. The history of science, Lakatos claims, has been and should be the history of competing research programs.

Lakatos also discusses what he calls the "negative heuristic" or "hard core" and the "postive heuristic" or "protective belt" of research programs. These are connected with methodological rules in the following way: the hard core of the program consists of the "irrefutable", unquestioned assumptions which may not be challenged and which thus tell us what paths of research to avoid. This is why Lakatos calls it the negative heuristic. The positive heuristic tells us what paths of research to pursue. Since the hard core must be protected "we must use our ingenuity to articulate or even invent 'auxiliary hypotheses' which form a protective belt around this core...It is this

protective belt which has to bear the brunt of tests and get adjusted and re-adjusted, or even completely replaced, to defend the thus-hardened core" (p.133).

A research program is successful, Lakatos says, if all this leads to a progressive problemshift. He offers as an example of a successful program Newton's gravitational theory, the hard core of which was Newton's three laws of dynamics and his law of gravitation. Early on many scientists gave counterexamples to Newton's theories but "Newtonians turned, with brilliant tenacity and ingenuity, one counter-instance after another into corroborating instances, primarily by overthrowing the original observational theories in the light of which this 'contrary evidence' was established" (p.133).

To sum up, Lakatos says that "The negative heuristic specifies the 'hard core' of the program which is 'irrefutable' by the methodological decision of its protagonists; the positive heuristic consists of a partially articulated set of suggestions or hints on how to change, develop the 'refutable variants' of the research-programme, how to modify, sophisticate the 'refutable' protective belt. The positive heuristic of the programme saves the scientist from becoming confused by the ocean of anomalies" (p.135).

While Lakatos has concerned himself with scientific theories, he intimates that this discussion is relevant also to the social sciences. The clash between his own and Popper's ideas on one hand, and the ideas of Kuhn

and Polanyi on the other, "...is not about a mere technical
point in epistemology. It concerns our central intellectual
values, and has implications not only for theoretical
physics but for the underdeveloped social sciences and even
for moral and political philosophy. If even in science there
is no way of judging a theory but by assessing the number,
faith and vocal energy of its supporters, then this must be
even more so in the social sciences: truth lies in power"
(p.93). Lakatos offers another way of examining and
evaluating successive theories, as logical progressions
within a research program. On this view a new theory should
by accepted over an old one if it predicts and leads to the
discovery of new facts. This is what Lakatos calls "the
logic of discovery".

It would probably be exceedingly difficult to
apply Lakatos' principles to moral philosophy, an area in
which 'facts' are hard to come by, though also, as in
political philosophy, an area in which the adage "truth lies
in power" is often dangerously accurate. In the social
sciences as well, 'facts' about human experience are usually
arguable. Even in science the idea of 'facts' is not
unproblematic: in theoretical physics, for instance, 'facts'
may not be the best term to use in discussions of waves and
particles that no one will ever see.

In this dissertation the work of analyzing
selected portions of the literature on teacher thinking will
be done using a Lakatosian framework; however, some

liberties will be taken with Lakatos' ideas. The notion of "hard core" will be used largely as Lakatos has defined it, as the basic set of unquestioned assumptions which determines the kinds of questions which can and cannot be asked and which methodologies may be used. The "hard core" of a program of research on teaching will largely be the conception of teaching that is inherent in the program, and it is toward uncovering that conception that much of the analysis will be directed. In terms of the "protective belt", this will be seen as the shift to new "sensitizing concepts" (for instance, from "decision making" to "practical knowledge") which change the focus of research and thus allow new questions to be asked, but do not change the "hard core".

In the attempt to evaluate whether a progressive problemshift has occurred in the teacher thinking literature, considerable liberties will be taken with this notion. A progressive problemshift will not be defined as one which has led to the prediction or discovery of new 'facts'. Rather, the question will be asked, has the move from the study of decision making, to practical knowledge to reflection allowed us to ask new questions which give new insight into the ways teachers think about teaching? Are we learning more about teachers' motivations for their classroom actions, and if so, will this new information aid us in the improvement of practice?

Lakatos' ideas must be adjusted in another way for use here. While it does not seem unreasonable to call research into teacher thinking a research program, the different threads within that program, namely decision making, practical knowledge and reflection, are not theories in the way that Lakatos talks about scientific theories. They are lines of research with different sensitizing concepts, and these sensitizing concepts, namely decision, practical knowledge and reflection, will be explored as the different lines of research are examined.

Despite these adjustments to Lakatos' ideas, the framework used in the dissertation is clearly Lakatosian, and this framework was selected specifically because it offers certain things useful for this analysis that other frameworks do not. The notion of a research program's hard core which contains unquestioned assumptions and leads researchers away from certain research questions is a clear, well defined idea that helps to do the work of uncovering the implicit conception of teaching in literature on teacher thinking. As well, the notions of progressive problemshifts and of changes in the protective belt of a research program lend specific direction to the analysis of movements within the teacher thinking research program. An alternate framework might have been Kuhn's notions of paradigms and paradigm shifts, but these are vaguer, less explicit and less useful for the analysis to be undertaken here.

The main component of the hard core of the program of research on teacher thinking is the conception of teaching that is implicit in the literature. Before examination of the literature begins, the first purpose of this dissertation, stated at the beginning of the present chapter, must be fulfilled; namely, the identification of educational norms through the explication of a defensible conception of teaching, so that that conception can serve as the main basis on which to evaluate the program of research on teacher thinking. It is to this task that the next chapter is devoted.

Chapter Two

A Conception of Teaching

A. Concepts and Conceptions

In the first chapter of this dissertation an explanation was given of ordinary language analysis. Ordinary language analysis offers one way of uncovering the basic uses of terms in language so that we can understand and use concepts more clearly. This is important in educational discourse because many of the major concepts in education are used in diverse and unclear ways. Sometimes just the exercise of focussing on and examining a concept helps us to gain clarity.

The Oxford Dictionary defines a concept as "a general notion", and getting clear on our use of concepts helps us to understand the general notions that underlie and guide our thinking. A conception, on the other hand, is defined as "a thing conceived; an idea". It is more complex, more fully developed, may be fashioned from several concepts and may vary more in the ways it is used and understood by different people. A concept may be seen as a publicly-held set of 'rules' or norms governing the use of a term, and a conception as an individual's more idiosyncratic interpretation of a concept or cluster of concepts.

The concept of education, for instance, is a general notion, although one which needs clarifying if educators are to discuss it productively. Many of us probably share a basic general notion of what education is. But a conception of education will involve many more details about how, why and what education entails and when and where it should or does take place. A conception of, say, 'liberal education' or 'gifted education' may be an even more complex idea which is likely to need considerable explanation by the person using it if it is to be understood as he or she intends.

Sometimes people fashion conceptions self-consciously and systematically to do specific jobs, or when they feel that existing conceptions are inadequate. This may involve clarifying concepts that are vague or confusing and laying out their boundaries. Someone might, for instance, want to develop a conception of 'gifted education', a term in frequent current use, and this would involve, among other things, clarifying both of the constituent terms. In the purposeful development of a conception one lays out and justifies an idea or set of ideas to serve a particular purpose. Such a purpose might be the development of a program for gifted education. A first step in this kind of conception development will likely be the conceptual analysis of constituent terms. It is also important to examine the views of different authors on the conception and perhaps on the constituent terms. As well,

one should make clear what order or category of things are being discussed to avoid confusion. Someone constructing a conception of critical thinking, for example, would have to come to grips with the often confusing discussions of 'skills' in literature in this area (are there such things as 'thinking skills'?). Someone interested in "personal practical knowledge" might notice that values and knowledge had been confounded in previous literature, and attempt to rectify this in a new conception. In education the conception one fashions should be clear and coherent, compatible with known empirical data and heuristically fruitful.

One of the most famous examples of self-conscious conception construction is Rawls' (1971) conception of justice. Rawls carefully lays out the conditions of various conceptions of justice and imagines how a person in the "original position" would choose between them. The "original position" posits a person functioning behind a "veil of ignorance", possessing general knowledge of the workings of people and the world, but not of his or her own talents and place in society. This allows an impartial choice. Rawls systematically explains the reasoning behind various conceptions of justice, showing the implications and flaws, and then builds his own conception.

Such systematic, self-conscious conception construction is seldom done, however. Many writers offer their conceptions of ideas they see as important, but these

are often merely hinted at or implied, and may in fact not ever have been carefully thought out. In the literature on teachers one frequently finds such phrases as "conceptualizing the teacher as a decision maker". This would seem to have more to do with a conception of teaching than with the concept, or general notion of teaching. Although "teacher as decision maker" is not a complete or finished conception, when researchers choose to 'conceptualize' teachers as decision makers they are offering a more developed idea than the general notion. This 'conceptualization' will affect their choice of research methodology and language.

It was stated in the first chapter that one of the purposes of analysing selections from the literature on teacher thinking will be to see what conception or conceptions of teaching are implicit in the literature. As researchers into teacher thinking observe teachers, talk with them and write about the teachers' work, they hold assumptions about what the tasks and purposes of teaching are. The conception of teaching that each researcher works from encapsulates the standards according to which 'good' and 'bad' teaching will be judged. As well, the researcher's conception of teaching may influence the language he or she chooses to use to talk about teaching, the areas he or she sees as worthy of study and the research methodology that is chosen.

Because the conception of teaching that is held will influence standards of value, use of language, areas chosen for study and research methodology, I will in examining the literature attempt to bring these areas into focus so as to illuminate the conception of teaching that underlies them. That analysis will be done in a later chapter. Prerequisite to that work, and the purpose of the present chapter, is the laying out of a clear, defensible conception of teaching. The purpose of explicating a conception of teaching is so that this conception can serve as a standard against which to evaluate whatever conception or conceptions are uncovered in the literature.

No new conception is proposed for this purpose. Rather, the conception offered here is drawn from various writings of Paul Hirst and Richard Peters. Hirst and Peters' work was selected because it appears to offer a more detailed and comprehensive conception of teaching than other writers. Komisar (1968), for instance, has investigated the concept of teaching but not constructed a conception. John Dewey's conception of teaching can be inferred from examination of his work, but he has not self-consciously and systematically constructed this conception as Hirst and Peters have done. Among the strengths of Hirst and Peters' conception are its clarity, its thorough justification at each step, and its comprehensiveness.

B. 'Teaching' and related concepts

'Teaching' would seem to be related to several
other concepts, notably 'education', 'schooling' and
'learning'. If the person in the street were asked to
describe the relationships between these four concepts, he
or she might say something like, "In school teachers teach
and students learn, and that's how one gets an education."
There is certainly truth in this, but some finer
distinctions should be made. Discussion of the relationships
between these different concepts will help to lend clarity
to the discussion of teaching itself.

Hirst and Peters (1970) state that education is
"not a single specific activity or process like gargling or
cycling" (p.74), but a more abstract term like 'reform' or
'improve' which "seems to draw attention only to the
standards to which the class of activities must conform and
which give them their principle of unity" (p.74). This group
of activities "all contribute somehow to achieving the
general end of an educated person" (p.74).

Education necessarily involves learning. Changes
brought about in a person by physiological maturation cannot
be called education. Learning involves mastery or
achievement of some particular X, such as mastering a skill
or knowing something one did not previously know. This
mastery or achievement is brought about as a result of one's
own experience.

The learning that one does under the heading of 'education' need have nothing to do with school. One can be self-educated or educated in a variety of formal and informal non-school settings. It seems quite natural to say "My trip to Japan was a real education", for although the major purpose of the trip may have been a sightseeing holiday, the traveller might have learned a good deal about Japanese language and culture. He or she may also have learned how to swear at taxi drivers and eat with chopsticks, but "it must be noted that if all educational processes are processes of learning, not all processes of learning are processes of education. The value criterion for education clearly implies that much which can be learnt must be excluded from education either as undesirable, for instance a sexual perversion, or as trivial, for instance wiggling one's ears" (Hirst and Peters, 1970, p.76). This values criterion that Hirst and Peters stipulate requires that what is learned is valuable according to societal and moral standards. They stipulate also a "knowledge condition", which states that education involves the development of (worthwhile) knowledge as well as depth and breadth of understanding.

While there is a logical connection between education and learning, there is no such connection between either of these terms and teaching. Education and learning go on without any teaching. Teaching can, however, certainly help people to learn, and thus to become educated. Teaching

is central to the idea of schooling. As our person in the street said, "In schools teachers teach and students learn, and (we might slightly amend the statement) that's one way that one can get an education."

Teachers don't always teach, of course, and students don't always learn, but by definition schools are places where education (and therefore learning) through teaching is supposed to take place. Some of the things we want students to learn (and these things stem from our educational values) would seem to require deliberate teaching. Some people, if left to their own devices, might learn to read and write and do differential calculus, but most need to be taught at least some things during the learning of these and other educationally desirable (according to our societal standards) competencies and bits of content.

In terms of the characteristics of teaching, several things can be said. Komisar (1968) distinguishes between three different senses of the word 'teaching'. First, teaching "names an occupation or an activity habitually, characteristically engaged in" (p.68). A sentence illustrating this sense would be "She has been teaching for twenty years." Second, teaching "refers to a general enterprise, some activity being engaged in" (p.68). In this sense we might say that Jones is teaching till noon, although he may engage in such non-teaching activities as opening the window or sharpening a pencil. Third, teaching

"characterizes an act or alludes to an act as being of a certain sort (belonging to the enterprise of teaching)" (p.68). A teaching act might be demonstrating or explaining, and demonstrating or explaining could involve talking, working a piece of apparatus, writing on the board or some more exotic activities. Hirst (1973, p.168) says that teaching is an intentional activity and "The intention of all teaching activities is that of bringing about learning." Thus in Komisar's third sense the activities "of a certain sort" could be said to be the sort of activities which are intended to bring about learning in the students. As Hirst (1973, p.168) says, " If therefore a teacher spends the whole afternoon in activities the concern of which is not that the pupils should learn, but, say, the inflation of his own ego, then in fact he cannot have been teaching at all."

Hirst makes a distinction between the task and the achievement senses of teaching. In the task sense the teacher is trying to get the student to learn something; in the achievement sense success is implied, that is, learning has indeed taken place.

Teaching, then, involves the intention to bring about learning. In order that the teaching can realistically be expected to bring about learning, Hirst and Peters (1970) make several other stipulations as well. The activities the teacher chooses must "if not overtly, at least by implication, exhibit, display, express or explain to the learner, what is to be learnt. However firm one's intention

to teach swimming might be, it would be absurd to count an analysis of English grammatical structure, or even a presentation of how to solve certain equations in hydrodynamics, as in fact teaching swimming" (p.79). As well, the activities chosen must be at a level of difficulty appropriate for the learner's cognitive state, so that he or she can in fact learn. Given all these things, it is obviously important that a teacher have clear objectives in terms of what is to be learnt, so that the teacher can select appropriate activities and methods and sequence of presentation. Together with the intention to bring about learning is the condition that what is to be learnt is not trivial or undesirable, but has educational worth as recognized by the standards of our society. Specific instances of "educational worth" are probably endlessly arguable; nevertheless, a fairly clear set of standards does exist and teachers and curriculum planners must weigh the learning experiences they select against these standards.

This section has involved examination of the concepts of education, schooling, teaching and learning and their interrelationships. Hirst and Peters conclude that "educational processes are those processes of learning, which may be stimulated by teaching, out of which desirable states of mind, involving knowledge and understanding, develop" (p.86) and that "though teaching may not be necessary to all forms of education and learning, it is necessary to schooling" (p.77). Teaching involves the

intention to bring about learning and the selection, with clear learning objectives in mind, of activities which express or encapsulate that which is to be learned and which are appropriate to the developmental stage of the learner(s).

Since the selection of appropriate methods and materials and the gearing of lessons to the developmental stage of the learners are ways of insuring, as much as possible, that the intention to bring about learning is carried out, these will be called the learning conditions for the conception of teaching presented below.

C. A conception of teaching

Having drawn these important clarifications, what else is there to be said about teaching? This conceptual clarification has led us to the learning conditions for a defensible conception of teaching. One other very important condition remains to be argued.

Before moving to further development of the conception of teaching, however, it is appropriate to ask about the use of the word 'defensible'. In what ways should a conception of teaching be defensible? In the first place, the conception must be logically defensible in that it is sound and sensible and its parts work well together. Hirst and Peters' careful analysis of teaching and related concepts would seem to satisfy this criterion. In the second place a conception of teaching should be educationally

defensible, that is, it should help to further the generally agreed upon ends of education. Since the major aim of education in our society is the learning by students of worthwhile content, skills and attitudes, and since Hirst and Peters' analysis indicates how teachers can bring about such learning, this second criterion would appear also to be satisfied. In the third place a conception of teaching should, since teaching involves relating to other people, be morally defensible and give an important place to the notion of respect for persons. It is to this area that the remainder of the discussion in this chapter is devoted.

That teaching is a moral enterprise is inescapable, not only because working in close contact with others involves moral questions of how one ought to treat other people, but because the educational aim of conveying things of value means, in part, conveying by lesson and example moral principles such as respect for persons.

Hirst and Peters say that "Teaching, as an activity, is unintelligible unless somebody is or is thought of as a learner. The view which a teacher has of his pupils should, therefore, provide a thread of unity which runs through a whole range of his dealings with them..." (pp.89-90) These dealings involve formal lessons as well as informal conversations outside the classroom, and the view a teacher should take of his or her students in these dealings, ideally that students are persons and must be accorded dignity and respect, is an important component of

any defensible conception of teaching. How the notions of dignity and respect are interpreted in various situations will involve many difficult questions and the weighing of different sets of values. As well, teachers may hold biases that sometimes inhibit their acting on the principle of respect for persons.

Treating students according to the principle of respect for persons provides a guiding principle for teachers but usually does not dictate how exactly teachers should act in specific situations. They must make many difficult decisions, in the area of discipline, for instance. The teacher's personal and educational values and the values of the school will interact with and sometimes conflict with the teacher's obligation to treat students with respect, dignity and fairness.

It is clear that to effectively express and embody the principle of respect for persons teachers must possess considerable understanding of their own values and the sometimes subtle ways these may be communicated to students. Some values may be held tacitly or even subconsciously and may affect teachers' classroom actions and decisions to the detriment of students. If teachers are to make intelligent judgements about how best to interpret the principle of respect for persons in various situations, they should reflect on their personal values and also on the values that are operating at the school level. There are possible

conflicts between personal and school values that may cause teachers frustration and confusion.

Another source of possible conflict for a teacher is that he or she must, on the one hand, respect the pride and sensitivity of his or her students and on the other hand try to fulfill the requirements of the role of teacher within an educational institution, respecting the subject matter he or she is meant to convey. A teacher must "have regard also to the values immanent in what he is teaching. He must not be so overwhelmed with awe at the thought of another expressing his innermost thoughts that he omits to point out that they are not very clearly expressed or scarcely relevant to the matter under discussion. An art teacher who is content to let children express themselves, without any concern for aesthetic standards, is deficient as a teacher whatever his or her merits as a respecter of persons" (Hirst and Peters, 1970, p.92). Respecting subject matter standards is connected to the learning conditions specified earlier, and to the selection of educationally worthwhile learning experiences.

A teacher must, then, weigh these sometimes opposing sets of values in order to be true both to moral principles and to the demands of the role of teacher in an educational institution.

The requirement that teachers treat students with dignity and respect according to the basic moral principle of respect for persons will be called the moral condition.

The learning conditions and the moral condition together are the components of this conception of teaching.

In summary, the conception of teaching developed here from the work of Hirst and Peters is logically, educationally and morally defensible. According to this conception of teaching the following statements can be made:

1) Teaching involves the intention to bring about learning.

2) The activities selected to bring about learning must indicate to the learner what is to be learnt.

3) The activities and methods selected must be appropriate to the learner's cognitive state, so that he or she can in fact learn.

4) The activities, content and methods selected must reflect and be appropriate to the teacher's clear educational aims.

5) That which is to be learnt must not be trivial or undesirable, but must be educationally worthwhile according to defensible standards.

These five points specify the learning conditions.

6) The teacher should express and embody, to the best of his or her ability, the moral principle of respect for persons in all his or her dealings with students.

This point specifies the moral condition.

Having articulated the details of this conception
of teaching, we turn now to the literature on teacher
thinking, beginning with studies of teacher decision making.

Chapter Three

Teachers' Interactive Decision Making

A. Research into teacher thinking

The first seven or eight decades of research on teachers was devoted to the investigation of teacher behavior, and this research has been fruitful in many ways. Teacher behavior is no longer the major research focus, because teachers' actions have been quite thoroughly described and analysed, and this kind of research does not appear to offer many new insights. The investigation of teacher behavior can be seen as a research program which, while it may not be supplanted, is at least rivalled by a new research program that emphasizes teacher thinking.

These two research programs have some rather different basic assumptions. The teacher behavior program assumes that we can know and understand most of the important things about teaching from observing teachers' overt actions. The teacher thinking program, on the other hand, assumes that we need to ask teachers about their thoughts as well as observing their behavior. The teacher behavior program does not give a major focus to the context of teaching, assuming that to a large extent teacher behavior can be understood without the details of context and judged according to a standard set of criteria. The

teacher thinking program assumes that teacher behavior can best be understood in the varying classroom context, and criteria for judging behavior to be effective or ineffective, appropriate or inappropriate, will vary according to context. As well, the teacher behavior program assumes that specific teacher behaviors can increase student achievement, and that there is a standard set of teaching skills, while the teacher thinking program takes the view that because teaching and learning are complex it is seldom the case that a few particular teaching actions will correlate highly with a few particular measures of pupil learning, and that because teachers bring different abilities and experiences to their teaching, they will have different styles and methods and exhibit different skills.

Having made these statements, they must now be qualified. Setting up a teacher behavior/teacher thinking dichotomy in this way is useful in that it gives, rather starkly, something of the different flavours of these two research programs. However the portrayal is too stark and in fact people involved in either of these research programs may share many assumptions with each other. Despite the importance given to context in teacher thinking studies, for instance, the fact remains that there IS a standard set of criteria by which we judge effective and ineffective teaching. Without standards, no evaluation would be possible. As well, early research on teacher behavior was simpler methodologically than much current research, and the

lack of attention given to context may have been due partly
to the lack of techniques available for this kind of study.
Nevertheless, while the assumptions of both programs may not
be mutually exclusive, and while it may not be entirely
accurate to state them as starkly as was done above, there
is definitely a basic difference at the heart of the two
programs. The teacher behavior program seeks to discover
what acts teachers perform in classrooms, and so obviously
the underlying assumption is that these acts, or behaviors
are of fundamental importance. The teacher thinking program
seeks to understand the thinking that motivates teachers'
acts and decisions and the classroom context in which they
take place, and the underlying assumption is that acts are,
if not unintelligible, at least not particularly meaningful
or enlightening without reference to thinking and to
context.

The following review of literature examines the
major works on teacher decision making and discusses the
ideas of writers representative of the major directions and
perspectives within this area.

The systematic study of teacher thinking began
about 1970, although some writers during the 1960's
expressed dissatisfaction with the teacher behavior
approach. Researchers into teacher thinking have used
several different foci in their investigations. One of these
has been the study of planning.

Literature on educational planning stretches back for at least fifty years, but under the auspices of teacher behavior research this literature was prescriptive, dictating to teachers how they ought to plan. After 1950 most prescriptive planning literature was based on the model proposed by Tyler, advocating that teachers specify educational objectives, plan activities designed to achieve those objectives, and plan appropriate evaluation procedures.

A notable departure from this model occurred when Macdonald (1965) and Eisner (1967) suggested that teachers do not start with objectives when they begin to plan, and do not proceed through the steps of Tyler's model. They focus first on activities that their students will enjoy and at which they can be successful. Objectives arise in the context of instructional activities. This was called an "integrated ends-means model" in its later elaboration by Zahorik (1975).

Studies of teachers' actual classroom planning remain relatively few in number. The results of those studies that have been done are quite consistent, agreeing with the findings of Zahorik (1975) that teachers spend most of their planning time concerned with the subject matter to be taught, and on instructional strategies and activities. A relatively small amount of time is spent on objectives and evaluation.

Yinger (1980) investigated the thinking of the teacher in his study by having her talk aloud as she planned. Yinger suggests that in planning a teacher is 'problem-finding', discovering potential useful instructional ideas and elaborating on them. He says that problem-finding involves interaction among four components: the particular planning dilemma confronting the teacher, the teacher's knowledge and experience, the teaching goals and the teaching materials. The acknowledgement that teaching situations differ and that individual teachers bring different knowledge and experience to their tasks marks a major difference between teacher behavior research and teacher thinking research.

Investigation of teacher planning did not open up as a major area of interest in itself, and the number of studies specifically directed to planning remains small. Studying teachers' planning involves investigation of the decisions teachers make while planning, and many researchers found it more fruitful to choose decision as the central focus.

Another focus was on teacher judgement. Studies with this specific focus are also few in number, and have tended to be hypothetical or laboratory studies. One such study required teachers to fill out questionnaires stating their expectations and the instructional strategies they would use for students with particular backgrounds (Shavelson, Cadwell and Izu, 1977). In judgement studies,

too, the word 'decision' was mentioned frequently. During

the 1970's teacher decision making was an area of major

interest.

In 1973 Shavelson made the statement, much-quoted

since, that decision making is "the basic teaching skill".

"Any teaching act", he wrote, "is the result of a

decision--sometimes conscious but more often not--that the

teacher makes after the complex cognitive processing of

available information" (p. 144). Shavelson sees a link

between earlier behavioral studies and studies of decision

making: "This conceptualization (of the teacher as a

decision maker) incorporates previous research on teaching

skills. Such skills as questioning, explaining, reinforcing

and probing represent the teacher's repertoire of

alternative acts from which he must choose at any instant in

time" (p. 149). The link which Shavelson posits between

studies of teacher behavior and studies of decision making

seems appropriate, and in fact decision studies share

qualities of both the teacher behavior and teacher research

programs. The view that there are a variety of "teaching

skills" such as questioning, explaining and probing is not

unlike the view that there is a standard set of teaching

"behaviors" from which a teacher selects. Studies of overt

teacher behavior seek answers to the question "What does the

teacher do?" Studies of teachers' decisions ask not only

what but when and, most significantly, they sometimes ask

why. "Why did the teacher choose this action at this time?"
This question takes us into the realm of teacher thinking.

Shavelson is, however, inaccurate in labeling
decision making (or explaining, or probing) a skill. This is
not a minor point, but a misunderstanding that has
implications for how decisions are discussed and studied and
for how classroom decision making is approached in teacher
education. The view that there is a variety of "teaching
skills" such as questioning, explaining and probing, and the
view that deciding which of these to select is itself a
skill, is not so different from the idea that there are a
standard set of teaching "behaviors" which can be selected
from. The 'conceptualization of the teacher as a decision
maker' suggests a conception of the teacher as an active
thinker, responsive to changing classroom conditions, but
the definition of decision making as a skill does not
accurately portray the thinking which underlies decision.
To make these claims more intelligible it is appropriate at
this time to divert from the main flow to investigate the
concept of skill.

B. An analysis of the concept of 'skill'

'Skills' is a word used frequently by educators,
who strive to help students improve their "listening
skills", "thinking skills" and "problem solving skills".
Many claim to be able to teach such 'skills' as classifying,
inferring and evaluating.

Teachers are supposed to be able to acquire a set of "teaching skills". Shavelson's (1973) language in his article "What is the Basic Teaching Skill?" is typical: "Skills such as questioning and explaining represent the teacher's repertoire of alternative acts from which to choose, while skills such as listening and hypothesis generation influence the quality of information from which the teacher estimates the student's understanding and the utility of alternative acts. One implication is that teacher training should include a decision-making component that integrates the other basic skills" (p. 144). While it is not unclear what Shavelson is trying to say, such language is misleading.

A skill is defined by the Oxford Dictionary as "expertness, practised ability, facility in doing something, dexterity". It is by implication discrete and separable from other activities.

In an article on the misuse of the words 'processes' and 'skills', Daniels (1975) says that skills are particular facilities, not general abilities. A recent Canadian educational document lists such 'thinking skills' as classification, generalization, extrapolation, evaluation and analysis. Of the 'skill' of analysis (for example) Daniels says,

> "If we choose a sufficiently narrow range of things to...analyse, we may be able to identify particular activities to do and exercises to practice to develop

the relevant facilities. Thus chemical technicians

learn certain routines for synthesizing products.

These routines are procedures that can be learned

as strings of facilities, and trainees can thus become

skilful analysts, evaluators, and so on. But there can

be no general skill of analysing or evaluating because

criteria differ from one area of analysis to another"

(p. 253).

Similarly, such 'teaching skills' as questioning

and explaining must be suspect. A teacher could be a skilled

questioner, but in asking students appropriate questions he

or she is not exercising one skill. To be a good questioner

the teacher must be knowledgeable about the subject at hand,

must be articulate, sensitive to the abilities and

dispositions of her students, and must have, as Shavelson

says, "...not the ability to ask, say, a higher order

question, but the ability to decide when to ask such a

question" (p. 144). He or she might be a better questioner

in mathematics than in social studies, or might be a

generally good questioner of students, when questions are

designed to teach, but a poor questioner of the family

doctor or local politician. It is clear that context is

important, and that the skilful questioner has a number of

important sensibilities, abilities and propensities, not the

least of which is the exercise of good judgement about the

right time to ask certain kinds of questions and to whom they should be asked.

Decision making is neither a skill nor a set of skills, and the decision-making teacher, like the questioning teacher, is exercising judgement based on her knowledge and experience. It seems likely that a teacher could improve the quality of her classroom decisions not through training in "decision making skills", but through analysis of and reflection on decisions she has made, and exploration of the values, beliefs and knowledge that underlie these decisions.

The term 'skills' as it has been discussed here, is not just a harmless misnomer. Viewing problem solving, critical thinking or decision making as skills or sets of skills suggests to a teacher certain teaching approaches which, since they are based on a misapprehension of the nature of that which they purport to teach, will likely be ineffective and could be counterproductive. Viewing teaching as the exercise of a set of "teaching skills" and teacher decision making as a skill in itself is an inaccurate representation of what teachers do.

C. Review of the literature on teacher decision making

a) Introduction

In their discussion of teachers as decision makers, Sutcliffe and Whitfield (1979) define a "teaching

decision" as "a decision made during the execution of the professional responsibilities of the teacher" (p. 16) and distinguish between reflective decisions, which are "non-immediate, contemplative decisions concerning events in the future" (p.9) and immediate decisions, which "occur as a result of forces perceived as affording no time for reflection" (p.10). This is an obvious but important distinction in the literature on teacher decision making. Clearly planning decisions are of the reflective kind, and decisions made while the teacher is actually interacting with students are immediate. Immediate decisions are also referred to in the literature as 'interactive' decisions and 'inflight' decisions. They will be referred to here as interactive decisions.

Interactive decision making has been difficult to study, because decisions made 'on the spot' during teaching occur rapidly and may involve little deliberation or conscious choice between alternatives. An observer might not be aware on the basis of the flow of events in a classroom that many quick decisions had been made by the teacher. Yet because of the unpredictability of students' responses, it is logical to assume that despite their best laid plans, teachers must make many interactive decisions about how to respond to students' behavior and how to adjust lessons to meet students' immediate instructional needs.

Researchers interested in teachers' interactive decision making have used the method of stimulated recall to

study classroom decisions. All of the empirical studies of teachers' interactive decision making identified in this review have used the stimulated recall method. Because of its importance in this research, and because there has been some controversy over the accuracy of results obtained by this method, an examination of stimulated recall is in order here.

b) The stimulated recall method

Virtually the only research method identified as useful for the study of teachers' interactive decision making has been stimulated recall. A teacher is audiotaped, or more often videotaped, while teaching, and the tape is played back to the teacher soon after the lesson. This is done immediately after the lesson if possible, and no later than the end of the same day. The researcher asks the teacher to identify points during the lesson at which he or she made decisions, and then questions him or her about those decisions and the conditions surrounding them. The questions asked by Marx and Peterson (1981) in their study are typical:

1. What were you doing in this segment and why?
2. Were you thinking of any alternative actions or strategies at the time?
3. If so, what were they?

4. How were the students responding?

5. Did any student reactions cause you to act
   differently than you had planned?

While the stimulated recall method has been widely
accepted, there has been controversy as to the reliability
as data of verbal reports. Nisbett and Wilson (1977)
reviewed research which suggested that introspection does
not always produce accurate reports. Their position is that
people's reports are based on "a priori, implicit causal
theories, or judgements about the extent to which a
particular stimulus is a plausible cause of a given
response" (p.231) rather than on true introspection. In
other words, the research reviewed by Nisbett and Wilson
suggested that people hold certain theories ('beliefs' might
be a better word) about social phenomena, and when
questioned they will call up these beliefs rather than truly
examining their thoughts and feelings.

Ericsson and Simon (1980) disagree, stating that
when inaccurate reports are given it is because researchers
have asked subjects for information that "was never directly
heeded, thus forcing subjects to infer rather than remember
mental processes" (p.215). This seems to mean that people
give inaccurate reports of their own thoughts when they are
asked to comment on something they had paid little attention
to. It is not clear, however, how a researcher can know for
certain whether a person is reporting his or her thoughts
accurately.

Sometimes we might be imagining rather than
recalling (it is tempting here to say we are 'recalling
incorrectly', but as Ryle (1949) points out, recall is a
'got it' verb, and recall unsuccessfully or recall
incorrectly are illegitimate phrases). We may also sometimes
purposely give reports that make us appear in a favorable
light. However, common sense would seem to indicate that we
can in general recall and report accurately on our recent
thoughts. Such reports will not be perfect, because, as Ryle
says,

> "Aside from the fact that even prompt recollection is
> subject both to evaporations and dilutions, however
> accurately I may recollect an action or a feeling,
> I may still fail to recognize its nature. Whether
> yesterday's twinge which I recall today was a pang of
> genuine compassion or a twinge of guilt, need not be
> any the more obvious to me for the fact that my memory
> of it is vivid. Chronicles are not explanatory of what
> they record" (p. 160).

It seems sensible to accept Ryle's view that we do
not have privileged and perfect access to the workings of
our own minds, but we can acknowledge the general
reliability of retrospection (a more accurate term than
introspection) and treat verbal reports as legitimate
sources of data. Even if we do some interpreting as we call
up memories of thoughts and feelings, and thus do not report

them exactly as they were this morning or yesterday, this does not invalidate our reporting. Observers doing social science research also interpret, and this does not invalidate their claim to accurate reporting.

While the issue is not exactly the same, the question of whether people can accurately remember and report their thoughts is somewhat similar to the question of whether people can bring into focus and articulate knowledge, values and beliefs they may hold tacitly. It will be argued throughout this dissertation that people can focus and articulate, and, it may be added here, remember, imperfectly perhaps, but well enough that verbal reports can be accepted as accurate. In terms of memory, it seems reasonable to say that the longer the time period over which one is asked to remember, the more imagination and interpretation will come into play. Stimulated recall interviews are always done as soon as possible after the lesson, on the same day, minimizing problems that the passage of time might bring to reports based on memory.

c) Studies of interactive decision making

During the 1970's the study of teacher decision making was one of the most active areas of interest for educational researchers. Reports of research in educational journals and papers presented at educational conferences centered frequently on teacher decision making. Some of these papers related to long term planning decisions, but

there was a particular interest in interactive classroom decisions. The concept of interactive decision making seemed to capture the heart of teaching.

This interest reached its peak at the end of the decade. The annual meeting of the American Educational Research Association in Toronto in 1978 saw a substantial number of papers presented on this topic. There were fewer studies of decision making in the early 1980's, and now this specific focus is seldom chosen by researchers, though decision remains an important concept in the study of teaching. The specific focus on decision has now broadened to include examination of the whole bed of knowledge and experience from which teachers' decisions spring.

Researchers into interactive decisions have sought to understand the content of these decisions as well as the stimuli that may necessitate making such decisions. Several people have constructed typologies of teacher decisions, and most of these are quite similar. The part of Sutcliffe and Whitfield's (1979) typology that deals with interactive or immediate decisions is representative and can be summarized as follows:

Content of immediate decisions
-associated with subject matter; the lesson content
-associated with apparatus and other aids, appropriateness
  of illustrations; timing of instruction
-associated with pupils' behavior, either alone or with

others, involving verbal behavior, objects or materials

-associated with the amendment of the teachers' behavior

Classroom stimuli which are precursors of the decision

-pupil centered stimuli (cues suggesting understanding or

 misundersanding, disruption or cooperation, other

 attention seeking or communication)

-distractor stimuli (not directly pupil caused)

-materials based stimuli

        Sutcliffe and Whitfield developed these categories

during their study of beginning and experienced teachers.

They realized that while some decisions would give rise to

an observable change in behavior, a 'null' decision to

continue on a course of action would be difficult to

monitor. Thus, as well as directing retrospective

consideration on the part of teachers as they watched

videotapes of themselves teaching, the researchers monitored

teachers' heartrates and skin resistance, on the grounds

that "The value of a measure of teacher stress lies in its

potential as a more objective technique of identifying null

decisions" (P.23). They hoped that this technique would

"reveal decision points where there was no observable change

in teacher behavior" (p.23). Such techniques, prevalent in

psychological research, are seldom used in educational

research, and while the desire of these researchers to find

an objective measure of teacher stress is understandable,

the technique may be somewhat questionable. For one thing,

use of apparatus to measure the physical signs of stress is tied to their assumption that 'null' decisions are accompanied by increased stress, and this may not necessarily be the case. Some decisions may not cause an increase in stress, and some increases in stress may not be caused by the making of a decision. The physical fact of being attached to this apparatus while teaching may be a cause for some stress.

One of Sutcliffe and Whitfield's findings was that there was a greater proportion of immediate to reflective decisions for inexperienced than for experienced teachers. This suggests that experienced teachers may have more well established plans and routines which make interactive decisions necessary less often. It may also be that the increases in stress which the researchers measured more often in inexperienced teachers indicate that beginning teachers find immediate decisions more stressful, not necessarily that they make them more often. Sutcliffe and Whitfield also found that stimuli giving rise to decisions were more often associated with classroom management for inexperienced teachers, and most commands given by teachers, whether experienced or not, caused an increase in stress.

Morine and Vallance (1975) identified three major types of interactive decisions: 1) interchanges (decisions related to verbal interactions), 2) planned activities (interactive decisions related to previous planning) and 3) unplanned activities (interactive decisions to divert from

the lesson plan). Most of the decisions made by teachers in this study were interchange or planned. There was little diversion from the basic plan, a finding shared by most researchers.

In Clark and Peterson's (1978) study, too, most teachers conducted "business as usual", not considering alternative strategies unless the classroom situation was going poorly, and even then not diverting much from their basic plans. Their interactive decision making involved specific responses to students and "fine tuning" of lessons.

It is reasonable to assume that there is a connection between planning decisions and interactive decisions. Teachers who have made careful planning decisions have presumably considered some of the possible student responses to the lesson, and may have built in some alternatives, lessening the need for interactive decisions while teaching. Marx and Peterson (1981) studied teachers' preactive and interactive decisions in a laboratory setting, and did find such a connection. They found that "teachers who did the most preactive decision making did the least interactive decision making, and those who did the most interactive decision making did the least preactive decision making" (p.243). This may simply be a statement of the fairly obvious point that teachers who make more preactive decisions are better prepared and thus do not have to 'think on their feet' as much. It may also suggest different teaching styles, with some teachers planning more thoroughly

and adhering more rigidly to their plan, and some teachers responding more to the immediate demands of the classroom. Interestingly, teachers in this study who had this more spontaneous teaching style and did more interactive decision making had students with more positive attitudes.

This is an interesting area for speculation. Studies of links between student attitude and student achievement have not been conclusive, but there does appear to be some link, and it would also seem that positive student attitude to school is a worthwhile goal to strive for in itself, regardless of any link with achievement. Teachers with a more spontaneous, livelier style, who are perhaps more responsive to suggestions from students, are probably more fun to be with. Clearly, planning is also vital, because learning objectives must be met and curriculum content must be covered. While the occasional unplanned lesson can be happily creative and productive, consistent underplanning would probably lead to inadequate coverage of the curriculum and to classroom chaos. This balance between planning and spontaneity is explored to some extent in studies of teachers' routinization of their classrooms. These will be discussed in a later chapter.

McNair (1978), like Clark and Peterson (1978), found that teachers' interactive decisions mainly involved adjustments to a well established plan. "As long as the fine-tuning activity keeps the instructional order on a relatively even keel there are no major changes in

direction...The content has, generally, been set and the concern is with the students' engagement with it. At the point of interaction with the children the teachers 'feel' the responses of the students and make continuous minute adjustments to maintain the flow of activities which has been established long before" (p.42).

None of these researchers, with the exception of Sutcliffe and Whitfield, addressed the definition of decision itself, seeming not to find it problematic.

Others such as Marland (1977) have found the idea of quickly made, almost spontaneous decisions to be at odds with the notions of deliberation and the weighing of alternatives which seem to be inherent in the concept of decision. These researchers, as well as reporting their findings, grapple with the definition of decision.

d) The problem of decision

Marland (1977) concluded as a result of his study that teachers do not make many decisions while teaching. He based this statement on his finding that teachers often choose lesson tactics without considering alternative courses of action. Teachers tend to be 'satisficers', a finding shared by Webster (1982) and Clark and Peterson (1978). The satisficing teacher only looks for alternative strategies if a lesson is going badly. If a lesson is going well he or she is content with that, and does not seek to

optimize instruction. The term 'satisficing' seems often to be used in a somewhat derogatory way, even if this is not directly stated. There is the suggestion in, for instance, Webster's writing, that teachers should at all times be attempting to "optimize instruction", but the reality of classroom life dictates something rather different. If a lesson is going well it would be disruptive for the teacher to change the flow or interrupt students' work. He or she may file away for future use ideas about how to improve activities, but sticking to the plan of a lesson that is going well seems (rather obviously) to be the best strategy to take at the time. Nor does this statement contradict encouragement of spontaneity in one's teaching style. A teacher with a more flexible, spontaneous style may be more responsive to student suggestions and perhaps more open to discarding a lesson that is NOT going well, but it would be risky at best to change the direction of a lesson that is successful in the hope of making it even better.

Because the teachers in Marland's study did not report frequent choosing between alternatives, he concluded that they were not making decisions. Rather they were performing "deliberate acts", following one course of action without considering alternatives. When decisions were made, the teachers in this study chose from two alternatives, rarely three or more.

Wodlinger's (1980) definition of decision is similar to Marland's. For Wodlinger a decision is made when

a problem requires the individual to make a choice of a particular course of action after the consideration of two or more alternatives. The teachers in Wodlinger's study reported making decisions more frequently than did those in Marland's study. Wodlinger identified two main categories of interactive decisions, instructional and managerial decisions. He also found that more antecedents, that is, stimuli from students or the environment, were associated with managerial decisions than with instructional decisions, suggesting that instructional decisions may be based more on the teacher's established principles and beliefs, rather than on immediate environmental demands. Instructional decisions were reported more often (though both kinds occurred in each lesson) and more pieces of information were reported as being used in the formulation of each instructional decision than in the formulation of each managerial decision. Wodlinger also reported that "the vast majority of instructional decisions identified were reportedly formulated after consideration of only one course of action" (p.225); that is, teachers considered only whether to do something or not to do it.

In Sutcliffe and Whitfield's discussion of the nature of decision, they address the question of conscious choice in interactive decision making.

"Implicit in the concept of decision is that of choice. However, choice implies a conscious awareness within the individual of available alternatives, which in turn

implies an ability to discriminate amomg them.
Decisions may be made without a conscious awareness or
weighing of options, even, for example, for such overt
acts as writing on the blackboard. Since decisions are
not always consciously monitored, a definition of
decision-making which encompasses the notion of choice
is both inappropriate and unnecessarily limiting.
Similarly, a definition which involves the notion of a
choice point as the instant of decision is unhelpful"
(pp.12-13).

Sutcliffe and Whitfield go on to describe a decision in this
way:

"A decision has been made by an individual whenever he
himself or one or more observers acknowledge the
availablility of at least one alternative behavior to
the one observed at a given instant of time. The
realization of the existence of an available
alternative need not have taken place by the time the
behavior is observed for either the individual or the
observer(s). If the observed behavior consists entirely
of spoken words, then a different phrasing or a
repitition of those words does not constitute an
alternate response...It is a necessary condition that
the decision involves, or has involved in the
individual's previous history, the higher cognitive
processes. Learned reflexes and behavioral acts

selected without conscious awareness at the instant

of response constitute decisions providing that

conscious processing of alternative responses can

be said to have taken place at some time in the past

history of the individual" (p.15).

What Sutcliffe and Whitfield seem to be suggesting is that

because conscious processing of information about a similar

situation has taken place in the past, a teacher's mental

operations in a new but familiar situation may be so fast as

to be below the conscious level.

Wodlinger (1980) states that his findings agree

with Marland's in suggesting that the teacher decision

making process is one "of limited rationality" meaning,

presumably, that teacher decision making is not often

attended by careful thought, and that teachers make quick

decisions on the basis of little more than intuition.

Wodlinger offers as an alternative explanation to the notion

of limited rationality the idea that many teacher decisions

are routinized through experience, and suggests that an

unconscious screening process may eliminate some

alternatives before they rise to the conscious level. He

further suggests that "instructional decisions may be more

highly routinized than managerial decisions; accordingly,

the consequences of instructional decisions may tend to be

fairly certain and easily predicted. On the other hand, the

consequences of managerial decisions may tend to be more

uncertain and not as easily predicted" (p.226).

The concept of decision seems to be problematic
not only in relation to skills, as discussed earlier; the
very definition of decision is at question for many writers,
and this is a problem when decision is a major focus of
research. The basic question seems to be, does decision
require the weighing of alternatives? If an action is
performed without prior deliberation, can it be said to be
the result of a decision? In terms of teaching decisions,
decisions made while planning clearly allow time for
deliberation and the weighing of alternatives. It is the
so-called "spontaneous" decisions, or interactive decisions
that are in question. Why does it matter whether or not
these are decisions? Is this an unimportant point of
semantics? No: central terms must be made clear because the
way they are used will affect researchers' choice of
methodology and the way results are interpreted.

Examination of the concept of decision suggests
that weighing alternatives or deliberating about a problem
is implicit in our use of 'decide'. When I say "I have
decided to become a doctor", one assumes that I have
considered other occupations. Deliberation, or careful
thought as a necessary component of decision would seem to
eliminate spontaneous and very short term decisions.
However, it does seem that ordinary language accepts some
uses of 'decide' when the deciding is done on a very short
term basis, though perhaps not spontaneously. Certainly we
do not want to call every action we take, including putting

one foot in front of the other when we walk, the result of a decision, but it does not seem unreasonable for a teacher to say, "I have decided to let you stay in at recess because it is raining", even though the decision was preceded by only a quick glance out the window and the brief weighing of "Should I let the class stay in or not?" He or she does deliberate, if only fractionally. Behind that brief hesitation may be the quick recall of a number of items from previous experience, such as school rules, how this class has behaved on rainy days in the past and how other classes have behaved.

Wodlinger's finding that most teacher decisions are preceded by the weighing of only two alternatives--do this or don't do this--reflects the rapidly moving milieu in which the teacher must operate. Despite the lack of time available for real deliberation, it does not seem incorrect to label a teacher's choices for action as decisions because, although such choices may spring sometimes from a grouchy mood or headache (teachers are, after all, only human) they (presumably) arise more often from prior deliberation and professional experience.

Even if we do agree that teachers' classroom decisions are, in fact, decisions, the concept of decision is not entirely satisfactory as a focus for understanding teaching. Review of the literature in this chapter has shown that as well as answering many questions, decision studies have raised new questions which seem to require different

kinds of investigation. This is not a bad thing, of course, because new questions lead to new research.

The idea of routinization mentioned by Wodlinger became a specific research focus during the 1980's, and this idea can be seen to have links with decision making. Shavelson and Stern (1981) say that "routines minimize conscious decision making during interactive teaching and...reduce the information processing load on teachers by making the timing and sequencing of activities and students' behavior predictable within an activity flow. Hence, conscious monitoring of instruction can then focus on particular students" (p.482). This statement links the decision making studies of the 1970's with studies of routinization, which became a popular focus in about 1985.

Another focus of the 1980's has been to compare the performance of experienced and inexperienced (or 'expert' and 'novice') teachers. Housner and Griffey (1985) compared the decision making of experienced and inexperienced teachers during interactive teaching and found that inexperienced teachers without well established routines focussed most of their attention on the interest level and behavior of the whole class, while experienced teachers focussed most on individual student performance, suggesting that "experienced teachers possess knowledge structures rich in strategies for managing students...that enabled them to attend to individual student performance and alter their lessons in accordance with student needs"

(p.45). Housner and Griffey's study concerns decision but has a broader focus than earlier studies, exploring to a greater extent teachers' practical knowledge.

Hargreaves (1979) speaks of "uncovering the common sense knowledge which becomes tacit in the decision making itself." The study of this "common sense knowledge" became a major area of interest in the 1980's. This, however, is jumping ahead. Having reviewed the literature on decision making, several tasks remain before literature on teachers' practical knowledge is examined. These are: a) to see what conception of teaching, however incomplete it may be, appears to underlie studies of teacher decision making; b) to see what fundamental, unquestioned assumptions appear to be inherent in these studies; and c) to determine what questions these assumptions encourage and discourage us from asking. These tasks are undertaken in the next chapter.

Chapter Four

Analysis of the Decision Making Literature:
The "Hard Core" and Implicit Conception of Teaching

It is not possible to describe fully the "hard core" of the teacher thinking research program until other areas of the literature have been examined; however, some tentative statements can be made about the view of teaching found in the decision making literature and about research questions asked and unasked in this work.

While the teacher decision making literature does not offer a finished or carefully developed conception of teaching, a certain view of teaching and teachers is implicit.

The emphasis, as in studies of teacher behavior, is basically on the 'doings' of the teacher, but the view of the teacher in decision studies is more three dimensional, assuming not just a moving mannequin, but an active, thinking participant in the classroom environment, interacting with students and responding to changing classroom conditions. Some studies, especially those which found the idea of interactive decision making to be problematic and questioned whether teachers were actually making decisions, found that the teachers studied fell short of this ideal, "satisficing" rather than making frequent

instructional decisions. Nevertheless the view of the teacher as an active, thinking participant in the classroom is held as an ideal.

Without being explicitly stated, the assumption that the purpose of teaching is to bring about learning runs through the decision making studies. Investigation of teachers' decisions generally centers on two areas, instruction and classroom management. Decisions related to instruction are clearly directed to improving instruction. Decisions related to methods and materials are centered on the importance of these items in improving instruction. Decisions related to classroom management are directed to the successful structuring of an environment in which learning can take place. The questions that are asked in decision studies centre on the areas of instructional techniques, content and materials and on classroom management. The probing of teacher thinking that is done illuminates teachers' thinking about those areas. Questions are not asked about teachers' personal and educational values, although these are, as we will see, likely to be crucial motivating factors in decisions.

Thus the focus on decision, while illuminating in some respects, is too narrow in others. Little mention is given in any of the reports of decision studies about what teachers' educational aims and values might be, and how decisions relate to these aims and values. Values and possible clashes between personal and institutional values

are discussed by only a few authors, and barely hinted at or omitted by most. The question, "WHY did you decide this way?", an obvious question and one which might, with some probing, illuminate values, is never explored in any depth.

The picture of teaching that emerges from these studies is consistent with the conception articulated in chapter two in that the focus on decision does highlight the basic intention of teaching as being the intention to bring about learning in students. Decisions made by teachers in these studies about content, methods and materials are clearly directed to bringing about learning in students. Teachers appear to fall somewhat short of this goal in studies such as Marland's and Webster's, where the idea of teachers "satisficing" and being content with a "good enough" situation is highlighted. Teachers in these studies appear to give a lot of importance to classroom management and smooth, non-disruptive classroom flow. In fact there may be value conflicts involved in these situations, between, for instance, keeping the class quiet or pursuing possibly noisy questions or changes of activity. Value questions, though sometimes mentioned, are largely unexplored in the decision literature, and the second component of the conception of teaching developed in chapter two, the moral condition, which specifies that teachers show respect for persons and deal with any clashes with institutional or subject matter values that this might entail, does not find an important place in the view of teaching presented in the

decision literature. Questions which may be related to value clashes arise. The "satisficing" teachers may, in effect, be weighing educational (learning-related) values against institutional (order-keeping) values. The principle of treating students with dignity and respect may be given short shrift in the midst of clashing standards. These ideas are not explored in the decision literature, and the complex area of teacher thinking which involves moral questions is not addressed.

It may be that the central notion of decision is simply not adequate for dealing with complex value questions; it may be that the researchers doing decision studies do not find value questions as worthy of pursuit as they find questions about teaching strategies and classroom management; or there may be other reasons for the apparent built-in taboo against the investigation of value questions. Some of these will be suggested in subsequent chapters. It seems clear that since personal, institutional and societal values underlie both instruction and classroom management, research directed to understanding teaching is incomplete without investigation of value questions.

Studies of decision making had largely stopped by about 1980, and now decision as a central focus is seldom taken. While interactive decision making has been identified by many writers as the heart of teaching, something of a dead end appears to have been reached in terms of research. Decision typologies have mapped the content and antecedents

of interactive decisions, and stimulated recall studies have been used to identify points during teaching when decisions have been made. Teachers have been questioned as to the number of alternatives they considered and the relationship(s) between interactive decisions and previous planning.

Surprisingly, however, investigation of the reasons for decisions has never been a major focus, yet this would seem to be a key issue in understanding teachers' thinking. It may be, as suggested earlier, that decision is not an adequate vehicle for this investigation. Reasons for decisions arise from the knowledge, beliefs and values that teachers hold. Much of this material may be held tacitly, and researchers would need to help teachers focus on and articulate things they may not previously have explicitly formulated.

The particular mix of knowledge, beliefs and values that each teacher holds has been called "practical knowledge" or "personal practical knowledge" by some recent researchers, and the study of interactive decision making would seem to lead almost inevitably to this notion. If teachers do have time to weigh alternatives, they do so on the basis of their knowledge, beliefs and values, and if they do not have time and must make speedy, intuitive choices then their intuitions must spring from this bed of knowledge and values. The decision literature tells a lot about classroom interactions, but does not do much in the

way of illuminating in any detailed way teachers' "personal practical knowledge".

Whether or not the shift from decision making as a major sensitizing concept to practical knowledge as a major sensitizing concept is "progressive" will be discussed in chapter six. First, however, the literature on practical knowledge must be examined. This task is undertaken in chapter five.

Chapter Five

Teachers' Practical Knowledge

A. The nature of practical knowledge and studies of
   "personal practical knowledge"

Interest in teachers' interactive decision making
leads logically to an interest in how teachers decide, and
on what they base their decisions. These questions are not
addressed in depth in the decision making literature, though
the link between decision making and practical knowledge is
suggested by some writers.

Hargreaves (1979), for instance, speaks of
"...uncovering the common sense knowledge which becomes
tacit in the decision making itself" (p.75), and states that
in making decisions teachers not only use skills but reveal
their values. "Values are embedded in classroom practice;
but because there is no simple correspondence between
'abstract' values and everyday practice, it is a research
task to analyse precisely how values are, often tacitly,
embedded in action. Here is the significance of classroom
decision making, for it is in decision making that all these
features find their point of articulation" (p.80). While it
is reasonable to say that teachers' knowledge and values
"find their point of articulation" in classroom decision
making, the study of classroom decisions does not seem to

offer sufficient access to the understanding of knowledge and values. The study of practical knowledge seems more able to offer this access.

Hargreaves further suggests that examination of teachers' common sense knowledge, skills and values, through collation and analysis of teacher commentaries, could provide a basic model of teaching. Such a model might help student teachers bridge the gap between theory and practice, as well as providing "the experienced teacher with the tools to uncover and reconstruct his own common sense knowledge, skills and values, and thus to change more thoroughly and with self-awareness" (p.81).

If the goal is the improvement of practice, then the explication of all that might be involved in teachers' practical knowledge is indeed a worthwhile research task, for the two reasons that Hargreaves cites: to help student teachers become adept and confident, and to help experienced teachers change their practice effectively through increased understanding.

Investigation of literature on practical knowledge indicates that this work is largely descriptive in nature. One major stream describes, using various terminology, the "narratives" (Connelly and Clandinin, 1986), or "biographies" (Butt, 1984) of teachers.

Representative of this kind of work are the "personal practical knowledge" studies, which aim to describe the knowledge gained by experience of individual

teachers. Elbaz (1981) says that "Teachers are rarely seen
as possessing a body of knowledge and expertise proper to
them" (p.42) and because they do not have an articulated
body of knowledge their status is much lower than that of
other professionals. Elbaz stresses that teachers do hold
knowledge related to their profession, but much of it is
tacit, gained by experience, and not readily articulable.
Writers on "personal practical knowledge" include Connelly,
Elbaz and Clandinin, and their work, which will be examined
in depth, is representative of the "narrative" perspective.
It is appropriate to give a central place to the work of
Connelly and his associates because he is a major figure in
this field. He is editor of Curriculum Inquiry, a journal
which is an important publication vehicle for reports of
practical knowledge studies. He was one of the first writers
on teachers' practical knowledge, moving from earlier work
which centered on decision making (Connelly, 1972; Connelly
and Dienes, 1982) to work centered on the notion of
teachers' practical knowledge (Connelly and Clandinin, 1982,
1985, 1986).

Another stream of studies, stemming mainly from
the domain of educational psychology, seek to explicate the
practical knowledge of 'expert' as opposed to 'novice'
teachers. The "personal practical knowledge" work focusses
by design on the personal and seeks to show how individual
teachers express their own learning and experiences in
skilled performance. The "expert-novice" work does not seek

out the personal, but is designed so that generalizations can be made about the kinds of things that 'expert' teachers do in classrooms. This work comes from a different perspective than does the "personal practical knowledge" or "narrative" stream, and has a more specific focus. Nevertheless, it aims to describe how teachers' knowledge finds expression in the classroom, through routines, and seeks to describe these. Despite the apparent disjuncture some have perceived between the investigation of routines and other studies of teacher thinking (for example, Lowyck, 1984), this work is linked because studies of routinization do seek to describe teachers' practical knowledge. The report of a recent major study of teachers' routines (Leinhardt, Weidman and Hammond, 1987) appeared in Curriculum Inquiry as part of an ongoing series on practical knowledge.

The purpose of this chapter, then, is to critically examine selections from the literature on teachers' practical knowledge. This critical evaluation will lead, in chapter six, to investigation of the insights this literature gives us into the "hard core" of the teacher thinking research program, including the implicit conception of teaching and the questions that are asked and not asked by researchers in this area.

Much has been written on the nature of practical knowledge, and it is not the purpose of this chapter to

review this work or to explicate fully the views of different writers on practical knowledge. However, it is useful to gain some general understanding of this concept by looking at the ideas of several authors.

In their discussion of the nature of practical knowledge, Sternberg and Caruso (1985) offer this definition: "Practical knowledge is procedural information that is useful in one's everyday life." It is "...procedural rather than declarative" (p.134). Practical knowledge is, according to this account, acquired by doing, and much of it is "either unavailable or inaccessible to conscious introspection..." (p.143) Hartnett and Naish (1976) say that much practical knowledge "requires knowledge of a kind which cannot be put into propositions" (p.116) and speak of the "tacit and unspecifiable elements in practical knowledge which can only be acquired by practice" (p.118). According to these authors, then, practical knowledge is knowledge about how to carry out various activities, and it is not and perhaps cannot be formulated in maxims or rules. Much of practical knowledge may be learned only by doing the various activities. Practical knowledge according to this account may be akin to what Gilbert Ryle (1949) called knowing how, as opposed to knowing that.

While the distinction between knowing how and knowing that is clear and reasonable, and while it is undoubtedly true that much, or even most practical knowledge cannot be formulated in maxims and rules, these ideas and

the notion of tacit knowledge must not be used to thwart discussion about what teachers do. I do not argue for a "science of teaching", with clearly stated rules 'written in stone', but it is possible to allow the pendulum to swing too far in the other direction, mystifying practice and adhering too strongly to the notion that teachers' tacit knowledge cannot be articulated. The idea that much of teachers' practical knowledge is tacit occurs frequently in the practical knowledge literature, and the enthusiasm with which this notion is embraced may be one of the reasons why this work does not seem as focused or as deeply probing as it might. The idea of tacit knowing will be examined fully in a later chapter.

One author whose ideas have influenced writers on teachers "personal practical knowledge" is Joseph Schwab. Schwab (1969) stressed that the field of curriculum is a practical one, "concerned with choice and action". Schwab contrasts the practical with the theoretic, stating that there is an incongruity between the two: "The practical is always marked by particularity, the theoretic by generality" (p.495). According to Schwab, theory idealizes, leaving out irregularities and non-uniformities ("the potholes in the road"). Because Schwab sees the practical as concerned with the specific details of actual situations, he says that no theory can ever be adopted wholesale to solve a practical problem. Schwab's ideas are not unusual. Many other authors have made similar remarks. Entwistle (1982) makes much the

same point when he says "We have to learn not only rules, theories and principles, but also how to interpret and apply them appropriately; that is, some initiative is required from the practitioner in discovering the pertinence of theory to his or her own practice. The job of a theory is to evoke judgement rather than rote obedience"(p.12). Kaplan (1964) describes theory as standing for "the symbolic dimension of experience, as opposed to the apprehension of brute fact" (p.294), and says that theory, as well as systematizing and ordering facts, has as its basic function making "sense of what would otherwise be inscrutable or unmeaning empirical findings" (p.302).

Schwab's ideas on applying theory were meant to apply to large scale curriculum projects. He describes the "commonplaces" of the school setting as the teacher, the learners, the school milieu, subject matter and curriculum development, and suggests cooperative planning by people knowledgeable about the particulars of each of these areas. Theories would be chosen as they are judged to be appropriate ("harnessing a temporary team") for solving practical problems. Theories would be readied for practical use by various "eclectic arts" which Schwab enumerates.

Michael Connelly, an early associate of Schwab's and the progenitor of the "personal practical knowledge" studies, applied Schwab's ideas in his own curriculum development work. Influenced by Schwab's reminder that curriculum is a practical field in which thoughtful

deliberation by participants is central, Connelly (1972) focused, as Schwab had not, specifically on the teacher and his or her role in curriculum development. He characterized the teacher as a "user-developer" of curriculum, rather than as a mere conduit for externally developed curriculum materials, and became interested in the knowledge underlying teachers' curriculum decisions.

Another writer whose views on theory and practice influenced writers on "personal practical knowledge" was Richard McKeon (1952). As Connelly had studied with Schwab, so Schwab, early in his career, had studied with McKeon. McKeon discussed three "modes" for connecting theory and practice. In his "logistic" mode theory and practice are separate and "theoretic activities are the province of experts who alone have mastered the formal procedures which they entail" (Reid, 1984, p.104). It is easy to see the merit of this view as far as the development of at least some theory is concerned: I would rather have my psychiatrist treat me with the guidance of psychological theories developed by psychiatrists and psychologists than those developed by plumbers, orthodontists or his landlady. McKeon's second "mode" is a "dialectical" one in which theory and practice constantly interact. "...theory is reflection on practice and practice reflects theory in a constant cycle of disjunction and reconciliation of ideas" (Reid, 1984, p.104). Finally, McKeon's "problematic mode" hinges on the notion of "inquiry", characterized as a

"scientific" problem solving process which can be applied to the theoretic as well as to the practical. All of these "modes" can be seen to have their usefulness as ways of viewing theory and practice, depending on the situation at hand. "Personal practical knowledge" writers such as Elbaz (1983) and Clandinin (1986) espouse the "dialectical mode", and it is not difficult to see why. Their concern is with the immediate practical problems of classroom teachers, for whom formal theorizing or the study of formal theories are activities not often engaged in, though they may use formal theories learned about during their teacher education in ways that suit their needs, and may engage in their own theorizing about various aspects of their teaching situation.

As the "practical" in the work of Michael Connelly and his colleagues Elbaz, Clandinin and others can be traced to some extent to Schwab, so the personal relates to the work of Michael Polanyi, and especially to his book Personal Knowledge (1958), in which he champions the idea of "tacit knowing".

Polanyi attempts to offer a scathing critique of modern objectivism, which he says accepts and values only that which we can prove. He grants that the critical positivistic stance was a necessary tool for man to lift himself out of medieval superstition, but he feels that the need for this movement has run its course, and that we are now being robbed of something valuable. Polanyi seeks "...to

restore to us once more the power for the deliberate holding of unproven beliefs" (p.268). From his viewpoint as a scientist this may be a relevant battle to wage, and in our own lives, including our lives as teachers, we want to feel free to trust our feelings and intuitions about the right courses of action for our students, but there is some danger in this idea. Whether or not we can articulate perfectly the factors that motivate us in our classroom decisions, it is important that we try, not only so that we can reflect on our practice and improve it, but because we are publicly and morally accountable for our actions as teachers.

Polanyi says that unlike articulate affirmations, tacit knowing cannot be critical. "We know more than we can tell, and what we cannot tell we cannot test, but can only act upon and thus find ourselves having gone right or wrong" (Allen, 1978, p.171). The idea of tacit knowing is at the heart of Polanyi's work, and this idea has exercised considerable influence on the writers on teachers' "personal practical knowledge".

In Connelly's (1972) discussion of teachers as "user-developers" of curriculum, he stresses the practical and interactive nature of their role, and suggests that teachers make decisions and adapt new ideas as they perceive that their situation demands. Connelly and Dienes (1982) use the term "personal practical knowledge" to account for the knowledge that teachers use to make curriculum decisions. They state that in dealing with theory teachers "...attempt

to personalize--and 'make' practical--theoretical ideas...
Properly used, the process of 'making' theoretical matters
practical and personal is the way practitioners cope with
new ideas and eventually make them their own. Undoubtedly
the ideas will be greatly modified when this happens, since
the personal practical knowledge of one person is unique to
that individual" (p.197). This is a Schwabian notion, that
teachers do not "apply theory wholesale", and it seems a
rather obvious one. As well it appears unnecessary to state,
as the authors have done in this passage, that "the personal
practical knowledge of one person is unique to that
individual", since this is true by definition. Thus the term
personal practical knowledge may be redundant.

The first of Connelly's graduate students to
complete a dissertation on "personal practical knowledge"
was Freema Elbaz (1980). Elbaz used observations and
open-ended interviews in her study of 'Sarah', a secondary
English teacher. Because practical knowledge is personal,
Elbaz states, any study of such knowledge must seek out the
perspective and point of view of the person under study. The
teacher's perspective "...encompasses not only intellectual
belief, but also perception, feeling, values, purpose and
commitment" (1983, p.17). It is not at all clear, however,
that the constituents of "perspective" that Elbaz lists
should be grouped together. Values and beliefs
("intellectual beliefs" is redundant) may be sensibly placed
in the same category, but "perception" and "feeling" sound

very odd in the same category and need to be explained. Does "perception" mean how a teacher perceives the world according to her beliefs, values and experiences? Does "feeling" mean how she feels about the world and her experiences as a teacher? "Purpose" might better be called "purposes", and "commitment" seems to mean commitment to some ideals or values. The juxtaposition of all these terms without adequate definition and explanation is typical of problems in writing style and periodic lack of focus that occur in much of the "personal practical knowledge" literature. I would argue that the things Elbaz has grouped under "perspective" are all centrally related to values, and that articulation of a teacher's values (together with the study of how she acquired them and how she justifies them), would be more illuminating than this motley assortment of terms allows.

Elbaz attempts to articulate Sarah's practical knowledge in terms of Schwab's (1973) five "bodies" of experience. The content of her knowledge is described in terms of her knowledge of self as a teacher, of the milieu in which she works, of subject matter, of instruction and of curriculum development.

She examines how Sarah's knowledge "is oriented in active relation to her teaching situation", identifying five "orientations": situational orientation, to the classroom and school; personal orientation, applying to the self and giving meaning to experience; social orientation, used to

structure social reality; experiential orientation, reflecting the experiences through which knowledge has been acquired and giving shape to experience; and theoretical orientation. Theoretical orientation is explained in this way: "The knower conceives (implicitly or explicitly) theory and practice and the relations between them determines both how he acquires and uses practical knowledge and how he attains theoretical knowledge and exploits it for practical ends" (1983, p.102). While some of this wording seems to demand further explanation, the sections on each "orientation" do adequately explain why Elbaz chose these categories, and her interpretations of the interview data with Sarah are at times quite insightful. Analysing and reporting such data is never an easy task, and while some of Elbaz' language is unusual, it is basically sensible when read in context.

In terms of the structure of practical knowledge, Elbaz has formulated three basic categories: rule of practice, practical principle and image.

A rule of practice consists of "...a brief, clearly formulated statement of what to do in a particular situation frequently encountered in practice." (1983, pp.132-133) Most teachers have such rules, like waiting until the class is quiet before speaking.

A practical principle is "...a more inclusive and less explicit formulation in which the teacher's purposes, implied in the statement of a rule, are made more clearly

evident." An example is that Sarah tries to make remedial students "happy to walk into that class." I would suggest again that the central idea in "purposes" is the teacher's values. The notion of "practical principle" could be useful in helping a teacher to articulate her values. If Sarah wants students to be "happy to walk into that class" she may be expressing the value she places on a school environment which fosters self-confidence and freedom from punitive judgement for students. If she articulates these values (or others), she may be able to see contradictions in her own practice and ways that she can better serve the ideals she holds.

An image is described as "...the least explicit and most inclusive of the three. On this level, the teacher's feelings, values, needs and beliefs combine as she forms images of how teaching should be, and marshals experience, theoretical knowledge and school folklore to give substance to these images" (1983, p.134). Examples of the images Elbaz attributes to Sarah are "the rhythm of the school year" and her feeling that teachers can "hide behind" subject matter.

The idea of image is quite suggestive, but there are possible problems with it. One is the question of validity. Of course researchers must use their interpretive powers to analyse and make sense of the data they accumulate, but it is certainly possible that such metaphoric interpretation could result in misrepresentations

of teachers' practice. It is also possible, as shown in some
of the images from Clandinin's (1983) study outlined below,
that the images attributed to teachers could be so mundane
as to offer little insight into teachers' practice.

Clandinin (1983) developed the idea of image in
her dissertation on the practical knowledge of two teachers,
"Aileen" and "Stephanie".

For Stephanie, some of the images Clandinin
presents are "The Classroom as Home", and an image Stephanie
held of herself as a "Maker of Things". She saw teaching as
a process of "helping children to be makers".

For Aileen, some of the images were "The Classroom
as a Mini-Society of Cooperation"; Aileen's feeling that
professionally she was "A Little Island"; and "Language as
the Key", an image Aileen held for how children learn. These
"images", while they may capture metaphorically something of
what these teachers value and the way they teach, seem for
the most part to be rather ordinary and it is questionable
whether they really offer much insight into the practice of
Stephanie and Aileen. In a recent paper Clandinin (1987)
describes the first year teaching experience of "Stewart"
and offers as one of his images "Teaching as Relating to
Children". Again, this tells us something about Stewart but
has the ring of a cliche about it as well. Sanger (1987),
who found the idea of metaphoric images a credible one, made
a similar point in his critique of Clandinin's work:

"Too much may be claimed, in this case, for the data.

The central images are a trifle too prosaic and contain
too little of the unpredictable and uncomfortable to
suggest that the teachers are grappling at a depth
beyond their conscious purchase. There is little of the
quality of poetry in the phrases they use to suggest a
free enough association of images to subvert their
conscious understandings. That, of course, may be a
lack in Clandinin's discernment or questioning
capacity. Despite the post-hoc analyses of the data
generated, which begin to categorize teacher images
in terms of their moral dimensions, emotional
'coloring' and Personal-Private dimensions, it is
difficult to pinpoint much that one might regard
as profound in the findings" (p.381).

The construct of image could perhaps be quite a
powerful one for getting at teachers' values and beliefs
that are "beyond their conscious purchase". Researchers must
go beyond the generation of the image, however. Assuming
that really insightful and appropriate images could be
generated (this could present fairly serious difficulties),
these should be viewed as an intermediate step toward
helping a teacher to make conscious and to clearly
articulate the values and beliefs which are (hopefully)
encapsulated in the image. This articulation could be very
helpful for meaningful reflection and change. Clandinin
frequently suggests that the "moral dimension" (as she calls
it) is important. Of Stephanie's "image" of "The Classroom

as Home", for instance, Clandinin writes, " In Stephanie's verbal expression of the image, a sense of its moral colouring emerged. the image is not neutral; a classroom should be like a home and both classroom and home should have certain features...A sense of possibility of 'better' or 'worse' action emerges" (1985, p.377). However she does not pursue the "moral dimension" in a systematic way; rather, it is one aspect of the blend of knowledge, experience and values that she calls "personal practical knowledge". Specific focus on values is not, of course, the purpose of her study, and while some general feeling about these teachers' values comes through in her work, values are submerged in the notion of "personal practical knowledge".

The other central idea in Clandinin's work and in her recent work with Connelly (Clandinin, 1987; Connelly and Clandinin, 1985, 1986, 1987) is "narrative unity". Clandinin (1987) explains this idea by saying, "The method we have developed for offering accounts of teachers' personal practical knowledge is a narrative one with a particular focus on personal experience. A narrative method has as its principal feature the reconstruction of classroom meaning in terms of unities and rhythms in the lives of participants" (p.5). Thus two ideas are encapsulated here: the "narrative" aspect has to do with teachers revealing their "personal practical knowledge" through the telling of their "life stories" in teaching, and the "unity" aspect has to do with "the power of the cyclic temporal order in schools and the

difficulty of breaking through the bonds of cyclic regularity" (Connelly and Clandinin, 1986, p.378). Like "image", this idea has possibilities but also potential difficulties. Grumet (1987), who uses the notion of narrative, though in a somewhat different way than Clandinin, in her work with teachers, raises the same point made in reference to "image" about the difficulties of interpretation, stating that there is a need for caution "when an interpretation is received as telling more about the narrative than its narrator knew" (p.325).

Harking back to earlier teacher research and the lack of "context" in which teacher actions were described, it can certainly be said that studying teachers' narratives offers rich personal context, but the dangers of misinterpretation when working with personal stories and metaphors cannot be overlooked. Another danger, sitting rather strangely beside the danger of misinterpretation, is the danger of underanalysing. Connelly and Clandinin seem to get rather too involved in describing the "unities and rhythms" of the school, without asking where they come from, what effect they have on pupils and teachers and what can or should be done to change them. Stephanie's "Classroom as Home", in which Stephanie (who is Jewish) consistently plans her teaching around the "rhythm" of the school holidays of Halloween, Christmas and Easter, was illuminated more by a communication to Clandinin from Joseph Schwab than by Clandinin's description. Schwab wrote,

"...the school year being a cycle of big events, fall,
Thanksgiving, Halloween, Christmas, snow, and so on.
- I would like to ask whether the author might see
Stephanie and ask her whether this isn't a reflection
of the way in which the Jewish religion tends to make
Jews think of the year as divided by holidays.
Incidentally, there are many such and several of the
ones the author mentions like Thanksgiving, Christmas
and so on have their Jewish correlates. So, the
family Judaism she represents may have been another
factor in contributing to the images which control her
judgements" (Schwab, 1983, quoted in Connelly and
Clandinin, 1986, p.382).

In response to this, Connelly and Clandinin comment that
Stephanie "lives out her Jewish cultural narrative by
celebrating her own holidays" (p.382). This includes taking
two days off for Rosh Hashanah, even though this occurs at a
time when the school is reorganizing and Stephanie's
"cultural rhythm conflicts with the school cycle" (p.382).
Again, the idea of values seems central. The reader yearns
for more questions to be asked here, but for the most part
the "unities and rhythms" of the school and the "narratives"
of teachers are described without the benefit of any
searching analysis.

In summary, the "personal practical knowledge"
studies, while they offer the suggestive idea of reaching

teachers' unstated and sometimes unconscious values and
beliefs through the formation of metaphoric "images" and the
examination of personal "narratives" have several
shortcomings. First, they suffer from a writing style in
which ideas are sometimes obscured rather than clarified by
wordy descriptions. Second, the "images" themselves seem
rather prosaic and not particularly insightful. Third, there
is a danger of misinterpretation in the translation of
observation and interview data into "images". Fourth, there
is insufficient analysis of the data that are described.
Thus, while these studies do appear to rectify to some
extent the lack in the literature on teachers of detailed
descriptions of the context of teaching decisions, they fail
to offer insightful analyses of what they describe.

As well, it has been argued throughout the
examination of this literature that a central idea in
"personal practical knowledge", a central motivating factor
in teachers' classroom decisions, is values, and that this
area remains largely unstudied, though the "personal
practical knowledge" work touches on it and suggests
possible research methods. This work ventures into the moral
realm more than do decision studies; nevertheless, values
are not a major focus. As a method of helping teachers
reflect on their own practice it may be helpful, and it
seems likely that the teachers in Elbaz and Clandinin's
studies gained insight into their own teaching through

discussions with the researchers, although helping teachers to reflect was not the specific intent of these researchers.

Oberg (1986) advocates reflection on their practice by experienced teachers, that they may "achieve a deeper understanding of the beliefs and intentions which motivate their practice" (p.1). Initially, Oberg says, this reflection should focus on actual classroom instances, because "These are the overt manifestations of beliefs and values underlying teachers' actions that are often implicit and difficult to verbalize. Many of the teacher's professional actions are spontaneous or habitual, chosen instantaneously without opportunity for deliberation, or ritualized in the form of routines" (p.3). The assistance of a second party, she holds, is probably essential in this reflective undertaking.

The idea that many teacher actions are "ritualized in the form of routines" bears investigation, and some recent teacher thinking research, in the realm of teachers' practical knowledge but rather different from the "personal practical knowledge" studies, has looked into the classroom routines that teachers use. Before the practical knowledge work is analysed in the next chapter, these "routinization" studies will be critically reviewed.

B. Studies of routinization

Studies of "expert" teachers also reveal the practical knowledge of teachers, but are less personal in nature and do seek to generalize about the "routines, scripts and schema used by experts" (Berliner, 1986, p.6). Berliner says that such information can be used, for example, to identify "the buggy routine or script, or the ill-formed schemata, that might be characteristic of less expert or novice teachers", and also to "provide exemplary performances from which we can learn." Experts can, "more than most teachers, provide us with cases--the richly detailed descriptions of instructional events--that should form a part of teacher education programs...beginning teachers need such cases of practice to develop their full understanding of pedagogy" (p.6). Berliner also says that "expert teachers are one of the best sources to see and study examples of defensible action, and...the knowledge gained from such study is more codifiable than many people think" (p.13). If action is to be defensible, as indeed it should be in the domain of public school teaching, it is apparent that teachers must really understand why they do what they do, and guided reflection on their practice, revealing their values and beliefs, is again seen to be a significant issue. Berliner's idea of defensible action is thus an important one, but as in the "personal practical knowledge" work it is an idea not adequately explored in the expert-novice literature, which seldom goes much beyond

identification of classroom routines without really
following up on the thinking that underlies them. This work
does offer "detailed descriptions of instructional events",
and these are undoubtedly useful as mirrors for teachers to
see themselves in and as starting points for discussion
amongst student teachers. It seems strange, however, that
researchers do not ask the teachers in their studies why
they follow certain routines and where the routines come
from, following up in a more diligent way on the notion of
defensible action.

One difficulty in such studies would be what
criteria to use in the identification of "expert" teachers.
In Berliner's work he developed a system of identifying
"expert" teachers using reputation, classroom observations
by three independent observers and performance on laboratory
tasks.

Leinhardt and Greeno (1986) identified "expert"
teachers according to the academic growth of their students
over a five year period. These researchers looked at lesson
plans, lesson activities and classroom routines of several
"experts" and several novices teaching comparable classes.
Using the language of their discipline, educational
psychology, they call teaching a "complex cognitive skill",
which "requires the construction of plans and the making of
rapid on-line decisions", and state that skill in teaching
rests "on two fundamental systems of knowledge, lesson
structure and subject matter" (p.75). Their study focussed

on lesson structure. They found that 'expert' teachers, whom they also called skilled teachers, did a more disciplined and quicker opening homework review than did novices, picking up information about which students had not done their homework and who needed extra help. The skilled teachers had routines in place for taking attendance, checking homework and responding to students' questions. These well established routines were flexible and could be reordered or used only in part. Little or no explanation was required for their functioning.

Novices, on the other hand, changed the way they did things from day to day, and thus had to explain their activities and instruct students in the roles expected of them frequently. Leinhardt and Greeno found that routinization of much of the school day was a major difference in the practice of "expert" and novice teachers, and suggest that, "Routines play an important part in skilled performances because they allow relatively low-level activities to be carried out efficiently, without diverting significant mental resources from the more general and substantive activities and goals of teaching. Thus, routines reduce cognitive load and expand the teacher's facility to deal with the unpredictable elements of a task" (p.76).

In light of this, it would be interesting to see whether teachers whose classrooms are highly routinized make fewer short term decisions during a teaching day, since they would presumably have fewer managerial difficulties. It is

also logical to hypothesize that the content and antecedents
of the short term decisions made by these teachers would
differ from those made by teachers who do not have well
established routines. Teachers without well established
routines would have to make more on-the-spot decisions about
the mechanics of running a class, and teachers with
efficient routines, freed to delve more deeply into content
and students' academic needs, would presumably make more
instructional decisions.

Whether or not teachers with efficient routines
actually do consistently focus more on instruction, to the
benefit of their students, would make a worthwhile empirical
research question. It would also be useful to investigate
whether there are any negative effects of routinization,
such as lack of spontaneity and risk-taking on the part of
some teachers whose day is heavily routinized. It could even
be the case that some unenterprising teachers who have well
established routines do not take advantage of the "reduced
cognitive load" to concentrate more on students'
instructional needs, but put their students 'on automatic',
and are not very effective teachers, though their classrooms
appear to run smoothly. It is worthwhile here to remember
Marx and Peterson's (1981) finding that the teachers in
their study who made the smallest number of planning
decisions also made the greatest number of interactive
decisions, and these teachers' students had more positive
attitudes than did the students of teachers who made more

planning decisions and fewer interactive decisions. Obviously more studies of the relationship between teacher decision making and student attitudes would be needed before any generalizations could be made, but it is interesting to speculate on possible reasons for the link that Marx and Peterson found. Teachers who make fewer planning decisions are presumably somewhat less prepared and their classrooms may be less routinized, perhaps less organized and less well managed. It is possible also that some of these teachers may be more spontaneous, more lively in their presentation and more responsive to creative suggestions from students. This is certainly not a 'black and white' issue (neither "routinization good, spontaneity bad", nor the reverse), but it is one worth investigating for finer shades of meaning. Much of a teacher's day may need to be routinized for efficiency's sake, but does creativity and risk-taking sometimes get sacrificed in the interests of efficiency? Like so many other unasked questions in the literature on teachers, this is a value question.

Interesting also is the question of whether (and to what extent) all good teachers use routines. Leinhardt, Weidman and Hammond (1987), in their study of the establishment of routines at the beginning of the school year, observed six teachers identified as "experts" by their students' unusual academic successes and by nomination from principals and supervisors. Only one of these teachers had weak and inconsistently practised routines, and she appeared

to be slightly less effective than the other five. This study also identified what the researchers call "dysfunctional routines", which are negative in effect but as habitual as functional routines. One teacher stopped the class almost daily to give a lengthy, impassioned lecture on proper behavior, to which the students did not respond and which resulted in the loss of instructional time. "Expert" teachers are not perfect, it would seem, a truism worth remembering lest we elevate them to the status of unattainable role models, undermining rather than enhancing the confidence of other teachers.

Viewing the "expert-novice" literature in terms of values, it is apparent that the personal values of teachers, while they are revealed to some extent in teachers' routines, are not brought to light as they are in the "personal practical knowledge" studies, but they may say some interesting things about institutional values. While classrooms obviously must have order and reasonable quiet for teaching and learning to occur, there is something to be said for "creative chaos" from time to time, and we may value quiet and efficiency over other seemingly less organized modes which may foster more discovery and self expression by students. As well, as the "personal practical knowledge" studies illustrate, each teacher has his or her own body of knowledge and experience which is expressed in teaching, and the study of "expert" teachers should not lead to an overly rigid picture of what a good teacher does.

The practical knowledge work does offer rich, detailed descriptions of the context of teaching, and this is valuable because this context must be taken into account in any attempt to understand teachers' classroom actions and decisions. However, there is little deep and focused probing of reasons, values and beliefs. Description is not enough without careful analysis. Very seldom are teachers asked "Why?" in these studies, a question that might, with the guidance of the researcher, open the door to teachers' examination of their values and beliefs, as well as the weaknesses and strengths in their professional knowledge. Reading accounts based on a more focused reflective journey would seem to be more useful to an audience of experienced and novice teachers as well.

What are the basic assumptions of researchers into teachers' practical knowledge, what conception of teaching is implicit in their work, and what changes in the so-called "protective belt" have accompanied the move from the study of decision making to the study of practical knowledge? These questions are addressed in the next chapter.

Chapter Six

Analysis of the Practical Knowledge Literature

It was stated in the analysis of the decision making literature that the conception of the teacher in that literature was more "three dimensional" than the view of the teacher presented in behavior studies. The decision literature, it was claimed, presents teachers as active, thinking participants in the classroom environment, interacting with students and responding to changing classroom conditions. The learning conditions laid out earlier for the conception of teaching are adequately served in this view of the teacher. The questions researchers ask relate to methods, materials and content, as well as to classroom management.

The decision making literature was seen to fall short on the moral condition, sometimes suggesting questions about values but not really probing into why teachers might make certain decisions. Value clashes between teachers' personal values and institutional values, which could have implications for how students are viewed and treated, are sometimes implied or hinted at but not investigated. It was suggested that perhaps the concept of decision is too narrow to give access to this complex area, or that researchers do not judge value questions to be significant enough to merit in-depth investigation. This and other possible reasons for

the seeming taboo against the investigation of values will be discussed in chapter nine.

In the practical knowledge area the "routinization" studies have a different focus than decision studies but have some similar limitations. They demonstrate that classrooms need some routines to keep mundane activities running smoothly so that relevant learning can be given more attention; they can offer "tips" to beginning teachers on how to organize and manage a classroom; and they suggest that there may be some "dysfunctional routines" which are well established but counterproductive. They do not investigate how teachers develop their routines and they do not pursue the idea of counterproductive routines, the relationship between routines and spontaneity, and the extent to which routines related to classroom management are designed to meet institutional standards for quiet and "good behavior", causing possible conflict with teachers' personal values and educational aims. They demonstrate some of the "practical knowledge" and the "knowing-in-action"--Donald Schon's (1983) term--of teachers, but they delve into the teachers' thinking even less than the decision making studies.

The focus on routines may be somewhat more insightful than the teacher behavior focus on specific, and isolated, teacher actions, but the intentions of these two streams of research are not dissimilar. They both seek to describe what good teachers do in classrooms. Routinization

studies do investigate to some extent teachers' thinking about their classroom routines, but the fact that they do this and earlier behavior studies did not may have as much to do with the development and acceptance of qualitative research techniques as with the different interests of the two groups of researchers.

The notion of "good" teachers immediately raises the question of "good" according to what standards? Aside from general societal standards, the conception of teaching held by the researchers dictates the standards, and it is clear throughout the work on decision and routinization that the bringing about of learning in students, with all the choices of materials, content and methods that this entails, together with the ability to run and "manage" an orderly classroom are the main features of this conception. In terms of classroom management, it is clear that a non-chaotic environment is necessary for learning to take place, and so classroom management relates to the intention to bring about learning, but there seem to be other reasons for "managing" the class, such as not violating noise standards of the school, not allowing students to express themselves in socially unacceptable ways such as swearing, and providing relative peace and quiet for the teacher. The relationship between management, learning and various sets of values is not investigated in the decision or routinization studies.

The "personal practical knowledge" studies both benefit and suffer from having a much broader focus than the

decision making or routinization work. The benefit is that "why" questions (and these seem to be the questions that illuminate values)--why did you do this, why did you decide this way, why do you feel this way about it--can be followed up when they arise without straying too far from a specific research focus such as decision or routinization. The negative aspect of the very broad focus of the "personal practical knowledge" studies is that too much time is spent describing the plentiful data and not a lot of analysis gets done. Issues of value which come to light in these rich descriptions are passed over too quickly and one wishes in the end for more focus on specific questions that arise. The conception of the teacher that is suggested by the "personal practical knowledge" work is consistent with the conception offered in chapter two, in that teachers are portrayed as discriminating professionals whose intention is to bring about learning in their students and who struggle (Elbaz portrays very well the struggle of "Sarah" to choose the best methods and materials for working with students who came to the "learning centre" for help with English) to choose methods, materials and content that best serve the goal of bringing about learning. Obviously teachers who strive and struggle in this way hold students' learning as a primary valued goal. Other of their personal beliefs and values will influence the ways in which they strive, and moral values will interact with their ideas about learning.

The "personal practical knowledge" studies address teachers' values more directly than any previous work but, frustratingly, do not probe value questions, seeking mainly to describe the whole fabric of "personal practical knowledge" of which values are a part. The description is a worthwhile task; nevertheless, one wishes for more analysis. Since values are not a major focus, the "hard core" of the teacher thinking program remains unchanged: knowledge and learning are the concerns of the teacher in this conception; the moral condition is not adequately met. The mentioning of the "moral dimension" in "personal practical knowledge" studies can be seen as a change in the "protective belt". It is AS IF value questions have been addressed, but they in fact remain unprobed and the apparent taboo in the "hard core" that disallows the investigation of value questions remains unchallenged.

Another possible reason for the lack of investigation of value questions may be that since many values are held tacitly they are not easily accessible to researchers for investigation. One of the important ideas in the "personal practical knowledge" studies and in other literature on teacher thinking is the notion that much of what we know is tacit and cannot be accurately articulated. Adherence to the idea of tacit knowing may account for some of the lack of probing in the teacher thinking literature. As Trumbull (1986) describes it, "Because much of tacit knowing is not articulated, there is a danger that practice,

artistic and reflective practice, can be seen as somewhat mysterious or can become mystified. The master teacher somehow "knows" what the right action is, but cannot explain just how (s)he knows this. The processes by which the expert makes sense of complex situations may seem impenetrable to the novice or less reflective teacher" (p.118). And to the researcher, we might add. There appears to be some element of this mystification in the "personal practical knowledge" work. Practice is thoroughly described but the details of teachers' knowledge, beliefs and values, which may indeed be held tacitly, are not probed. Whether material that is held tacitly can be brought into focus and articulated is thus an important question. Examination of the idea of tacit knowing may help to shed light on the lack of probing into some areas of teachers' thinking. This examination is undertaken in the next chapter.

Chapter Seven

Investigation of the Idea of Tacit Knowing
and its Relation to the Study of Teacher Thinking

Almost all of the literature on teachers' practical knowledge states that much of teachers' knowledge is tacit. While the idea of tacit knowing is a credible one, questions arise about the nature of tacit knowing and especially about whether tacit knowledge can be made explicit. Whether or not the knowledge, beliefs and values that teachers may hold tacitly can be made explicit and articulated will have implications for the investigation of teachers' thinking. If material that is held tacitly is viewed as being largely inarticulable, researchers may try to 'get at' this material in non-explicit ways, such as through "narrative", or the telling of teachers' "life stories" and all that those might reveal, or through metaphors such as the "images" that Clandinin uses. It is clear that all our knowledge is not of the propositional kind, and that we do not have immediate conscious access to all that we know, or to all of the beliefs and values, possibly acquired at an early age, which guide us in our lives and in our classroom decisions. Narrative and metaphor appear to offer ways for us to "surface" and talk about knowledge, beliefs and values which we hold tacitly.

It may be also that the understanding of tacit
knowing inherent in some of the teacher thinking literature
does not adequately reflect the full scope of Polanyi's
writing; nor will, unfortunately, the analysis which
follows. What I will attempt to do is lay out the basic
ideas and examples Polanyi uses and discuss these in
relation to the literature on teacher thinking. The idea of
tacit knowing bears investigation, for it may be that much
tacit material can be brought into focus and articulated,
and that this is an important thing for teachers to do.

A typical dictionary definition of the word 'tacit'
is "unspoken or silent; implied or understood without being
openly expressed". We speak of a 'tacit agreement' as one
which has not been verbalized, or has perhaps not been
systematically thought out, but which is nevertheless
understood by the concerned parties. There is nothing in
this definition to suggest that something tacit cannot be
articulated. Tacit knowing may be another thing, however.
Though he certainly did not invent the word tacit, Michael
Polanyi is credited with originating the idea of tacit
knowing. His work, and especially his book <u>Personal
Knowledge</u> (1958) is invariably referred to in discussions of
teachers' tacit knowledge. The thesis Polanyi presents in
<u>Personal Knowledge</u> is developed further in his later work,
notably the 1966 <u>Philosophy</u> article, "The Logic of Tacit
Inference", and the 1966 book, <u>The Tacit Dimension</u>.

It is appropriate to centre this chapter around Polanyi's ideas by examining his work in terms of the answers to three questions: What is the nature of tacit knowing? How is tacit knowledge acquired? Can tacit knowledge be made explicit?

About the nature of tacit knowing, Polanyi says that it always involves two things, which he calls the two terms of tacit knowing. The first he calls the proximal term. It is only "subsidiarily known", while the second, or distal term is "focally known". In tacit knowing a person attends _from_ the proximal term _to_ the distal term. In other words, the proximal term forms a kind of backdrop or context in which we can understand the distal term on which we are focusing. "We know the first term only by relying on our awareness of it for attending to the second...In many ways the first term of this relation will prove to be nearer to us, the second further away from us...It is the proximal term, then, of which we have a knowledge that we may not be able to tell" (1966b, p.10). Polanyi explains this further by saying that in tacit knowing an act of integration takes place whereby we shift our focus from particulars to the coherent whole that they form. As an example of this, he discusses the way we recognize faces. We do not focus on separate features like eyes or a nose, but attend from the features to the face. We recognize the face, but may be unable to specify the features. This is clearly a legitimate example of a kind of "knowing", or recognizing which cannot

be described precisely in words. As modern police artists
know, people can describe features of faces, and these
artists are able to draw good likenesses by using the nose
and eye "types" that are described to them; however, many
people's faces could be composed of the same collection of
feature "types", and we could still recognize someone we
know.

This kind of "tacit knowing", whereby "we know
more than we can tell", is not, however, directly applicable
to many of the investigations to be done in teacher thinking
research. For one thing, notions like the recognition of
faces are seldom relevant to questions about teaching.
Questions about teaching (aside from the obvious "what does
the teacher do" questions) have to do, in the main, with
knowledge (What knowledge is the teacher demonstrating here?
What does she need to know to do this better?) and values
(What is important in this situation? To the teacher? The
school? The students?) Questions about teachers' decisions
and actions may involve a whole fabric of knowledge,
experience and values which is not easily articulable, but
teachers have a responsibility, both professionally and
personally, to explain their actions as teachers. If an
observer were to ask a teacher, "Why did you make the
decisions you did regarding Mary and Peter's late
homework?", it does not seem acceptable for the teacher to
say, "I don't know why I gave Mary an extension for her
homework and gave Peter a zero. I just followed my instinct.

It seemed like the right thing to do." Teachers must act on their instincts and intuitions, because they do not have time while teaching to constantly question themselves, but during times of reflection, or when discussing with colleagues, these intuitions and the decisions based on them should be examined in terms of reasons, both the immediate practical reasons and underlying reasons which may relate to teachers' beliefs or values. The teacher who gave Mary a homework extension and Peter a zero may know from experience with these two students that Mary's lateness is due to lack of understanding or family difficulties. He or she may know that Peter's lateness is a recurring problem and that he will not complete his homework no matter how long he is given. But the teacher may also be less strict with Mary because she is a girl, or may be angry with Peter about some other incident. Even if Mary does seem to 'deserve' an extension while Peter does not, the teacher might benefit from examining the consistency with which he or she exercises various rules, and should be able to explain and defend his or her actions.

"Tacit knowing dwells in our awareness of particulars while bearing on an entity which the particulars jointly constitute" (1966b, p.61). This introduces another part of Polanyi's description of tacit knowing, the idea of indwelling.

To focus directly on something, Polanyi says, is to exteriorize or alienate it, thus destroying its meaning.

He gives as an example of this what happens when one focusses on and repeats a word, out of context, until it loses its meaning."Knowledge by indwelling", on the other hand, occurs when we attend "from a thing to its meaning", thus "interiorizing" it.

There is certainly truth in this part of Polanyi's argument, as we have all experienced how a repeated word can suddenly seem meaningless, and musicians know that by focusing on their fingers skilful performance can be paralysed. But it is not true that by focusing or concentrating directly on something it invariably loses its meaning. Polanyi says that "...we endow a thing with meaning by interiorising it and destroy its meaning by alienating it" (1966a, p.9), and adds that "...when we learn to use language, or a probe, or a tool, and thus make ourselves (subsidiarily) aware of these things as we are of our body, we interiorise these things and make ourselves dwell in them" (1966a, p.10). One must be careful here not to adhere to Polanyi's statements too literally. While it is certainly difficult (or perhaps impossible) to carry out some performances, such as playing the piano, while concurrently also focussing on the particulars of the performance, such as the movement of one's little finger, one can, when not performing, reflect meaningfully on particulars. In terms of some activities it should actually be possible to focus on particulars while doing. Efficient tool users may use hammers or paint brushes almost as extensions of their

bodies, but it is possible also to concentrate directly on the use of a tool without forgetting how to use it or why it is being used. In terms of language, we usually do speak without awareness of the structure or rules of grammar and syntax, and without reciting the definitions of words to ourselves. However it is possible to focus on one's use of language, as when a poet searches for one perfect word or phrase, without losing the meaning. Focussing on some detail of teaching a particular lesson may make one have to stop, to check the book or lesson plan, for example, and a smoothly flowing lesson is momentarily disrupted. Focussing on and articulating details is not impossible, but it is difficult to do during a performance.

"We interiorize things and make ourselves dwell in them", says Polanyi. For example, "...as each of us interiorizes our cultural heritage, he grows into a person seeing the world and experiencing life in terms of this outlook." This much is certainly true, and it is an idea familiar to anthropologists for many years. Broudy (1979) has characterised it as follows: "...tacit covers theories, world views and schemata of all sorts insofar as during an interpretive act they are 'the spectacles' through which we see but which we do not see" (p.451). But it need not be so, it seems to me, that I actually "know more than I can tell" about the parts of my culture. I may not stop to examine the various cultural artifacts, beliefs and prejudices which act as my "spectacles", but if called upon to do so I may well

be able to articulate them, or, if someone outside the culture pointed them out to me I may well recognize them. Furthermore, though I undoubtedly do hold many aspects of my cultural heritage tacitly-- in that though my thoughts and actions are affected by them I have not examined or verbalized them-- all of my cultural inheritance can not properly be called knowledge. Much of it would be better characterised as tacit belief and tacit values. This is an important point. Polanyi has not differentiated between knowledge, physical skill, beliefs and values. Most of what he speaks of as tacit knowledge seems to fit Gilbert Ryle's category of "knowing how" as opposed to "knowing that"--the latter covering explicit or propositional knowledge--and this kind of tacit knowing may indeed be inarticulable. Such things as learning to ride a bicycle and drive a car, learning to recognize a face and speak a language, learning to give a medical diagnosis and making scientific discoveries, some of the examples Polanyi gives, do seem to be impossible to describe with any real accuracy. For the bicycle riding one can talk about pedalling and balance, but actually putting the elements together and riding cannot be encapsulated. This idea is important in terms of teaching because teachers cannot explain everything to students in words. Words help, but some skills, abilities and understandings need to be taught by example as well as precept, and practiced and experienced by students.

Seeing the world in terms of a certain cultural outlook appears to be something rather different, however, than knowing how to do something. As I operate in my culture, wearing my cultural 'spectacles', I am not aware of details, but I can become aware of them. As I teach I wear a set of 'spectacles', composed of my personal experience, knowledge, beliefs and values, but there is no reason why I cannot sit down and think, talk and become aware of these details, so that I can understand and change, weaving this understanding and change into new performance in which details will again recede.

As for the way tacit knowledge is acquired, Polanyi says basically this: A person can get explicit instruction in, say, riding a bicycle or driving a car, and will for awhile attend to the particulars of the bicycle's handbrakes or the car's clutch, but gradually the particulars will be integrated and recede from focus in the smooth performance of the whole. Student doctors are taught explicitly the symptoms of diseases, but to integrate these bits of explicit knowledge and make a diagnosis, "...the pupil must discover by an effort of his own something we could not tell him. And he knows it then in his turn but cannot tell it" (1966a, p.5). Explicit particulars can be taught, but then there must be a personal integration of these particulars by the learner. "An explicit prescription becomes increasingly effective as it sinks deeper into a tacit matrix" (1966a, p.7).

In other words, when we learn how to do something well we no longer have to attend to details of execution as much, and this allows us to perform more efficiently and more effectively. (Although the occasional bit of backtracking and purposeful concentration on particulars, as in rigorously working on one small trill in a piano piece, can lead to improved performance. Polanyi makes this point.) Imagining what goes into the brilliant execution of a Chopin nocturne, the diagnosis of an obscure disease or the flash of insight that leads to a scientific discovery, one can understand what Polanyi means by saying that "the pupil must discover on his own something that we could not tell him", but this must not be allowed to become too mysterious and wondrous a thing. There is a great deal that we can explain and teach without falling into the objectivist trap which Polanyi so decries.

In his discussion of how tacit knowledge is acquired, Polanyi uses the psychological term "subception", which he describes as "the process of learning without awareness" (1966a, p.6). The term does reflect our present understanding of how children learn to speak their native language, and for how we absorb much (but not all) of our culture. It does not, however, seem entirely accurate as a description of how one learns to play the piano or make a medical diagnosis. In these cases one learns the particulars very carefully and very consciously, and while the particulars may come together in a marvellous,

unselfconscious performance, they have at that point already
been learned, and not, at least in large part, by
subception.

A final question about the relevance of Polanyi's
work for research into teaching remains to be answered. Can
we, according to Polanyi, make tacit knowledge explicit? If
we "know more then we can tell," does this mean that we can
never tell it? His answer is that in fact there is much that
we can never tell, and much that we can never even bring
into clear focus. We can try, but our articulations will
always be "defective". In fact, "...strictly speaking
nothing that we know can be said precisely" (1958, p.87).
There will always be "ineffable knowledge", which "may
simply mean something that I know and can describe even less
precisely than usual, or even only very vaguely." When we do
articulate there is still "a residue left unsaid by
defective articulation", and this is the "unspecifiable part
of knowledge" (1958, p.88). To illustrate this he says that
even though he knows how to ride a bicycle and how to pick
out his macintosh from twenty others, he cannot say clearly
how. "For I know that I know perfectly well how to do such
things, though I know the particulars of what I know only in
an instrumental manner and am focally quite ignorant of
them; so that I may say that I know these matters even
though I cannot tell clearly, or hardly at all, what it is
that I know" (1958, p.88). While it may be true that I
cannot precisely describe the physical coordination and

balance I exercise in riding a bicycle, the statement that
"strictly speaking nothing that we know can be said
precisely" does not, of course, mean that we cannot
communicate well with each other and clarify things for
ourselves. How I came to interpret a certain look on a
student's face as expressing secret anxiety would seem to
fall under the heading of "knowing more than I can tell",
but that does not mean this topic is not discussable. I
might have been right or wrong in my interpretation, and
this might be shown only by the results of the action I
chose to take to alleviate my student's anxiety. I can
certainly talk about these things, as I can about all my
instincts, intuitions and interpretations.

The crux of Polanyi's answer to the question
whether tacit knowledge can be articulated comes in the
paragraph below. In it he mentions several things which bear
comment, including the idea of knowing in practice, which
several writers on teachers' practical knowledge have used.
The passage is thus worth quoting at length:

> "Subsidiary or instrumental knowledge, as I have
> defined it, is not known in itself but is known in
> terms of something focally known, to the quality of
> which it contributes; and to this extent it is
> unspecifiable. Analysis may bring subsidiary know-
> ledge into focus and forlmulate it as a maxim or as a
> feature in a physiognomy, but such specification is in
> general not exhaustive. Although the expert diagnos-

tician, taxonomist and cotton-classer can indicate their clues and formulate their maxims, they know many more things than they can tell, knowing them only in practice, as instrumental particulars, and not explicitly, as objects. The knowledge of such particulars is therefore ineffable, and the pondering of a judgement in terms of such particulars is an ineffable process of thought. This applies equally to connoisseurship as the art of knowing and to skills as the art of doing, wherefore both can be taught only by aid of practical example and never solely by precept" (1958, p.88).

Thus, in terms of 'knowing in practice', teachers can never fully and with complete accuracy reconstruct their skilful performances; their articulations will always be "defective" and their knowledge "ineffable". A program of research into teacher thinking which subscribes to this belief would appear to be doomed, if not to failure, at least to very limited success. However, such conclusions are unacceptable. If we seek to improve practice we must believe that reconstruction can be done to a high degree; and the thrust of teacher thinking research is, presumably, to get teachers to recount their thoughts and highlight particulars. It would undoubtedly be helpful to expert practitioners as well as novices to analyse their practice and bring "subsidiary knowledge into focus." Only when the particulars meet the light of conscious inspection can

practice be intelligently changed. And it should be stressed
again that the subsidiary features brought into focus by
analysis do not all constitute knowledge, but belief and
values as well.

It is certainly true that teaching, like other
activities, needs to be taught "by aid of practical example
and never solely by precept." Novice teachers need to see
how an expert combines particulars into a skilful
performance (it is also helpful after an observation for the
expert to tell the novice explicitly some of the things he
or she was doing, because observation of a smooth
performance does not always reveal its workings), and
novices need to practise applying the explicit precepts they
are taught.

Obviously one cannot concentrate on particulars
(though novices and even experts do bring particulars into
focus from time to time, reminding themselves, for instance,
not to address the class until all noise has stopped)
without producing a rather choppy performance. Theories
and techniques cannot be called up constantly; they recede
into a smooth performance.

Gilbert Ryle, in his book Concept of Mind (1949),
says several things that are relevant to the present
discussion.

"First, there are many classes of performances in which
intelligence is displayed, but the rules or criteria of
which are unformulated. The wit, when challenged to

cite the maxims or canons by which he constructs and
appreciates jokes, is unable to answer. He knows how to
make good jokes, and how to detect bad ones, but he
cannot tell us or himself any recipes for them. So the
practice of humour is not a client of its theory. The
canons of aesthetic taste, of tactful manners and of
inventive technique similarly remain unpropounded
without impediment to the intelligent exercise of
these gifts" (p.30).

Ryle goes on to say that rules of correct
reasoning were first extracted by Aristotle and rules of
good angling by Izaak Walton, but men knew how to reason and
how to angle before this:

"Efficient practice preceded the theory of it;
methodologies presuppose the application of the
methods, of the critical investigation of which
they are the products. It was because Aristotle
found himself and others reasoning now intelli-
gently and now stupidly and it was because Izaak
Walton found himself and others angling sometimes
effectively and sometimes ineffectively that both
were able to give their pupils the maxims and
prescriptions of their arts" (p.31).

It might be added that there have been good teachers since
long before the study of teaching, but because teachers
teach intelligently and stupidly, effectively and

ineffectively, it will be helpful to novices and experienced teachers alike to extract and communicate information about teachers' practice.

This task is in no way opposed to the notion of artistry in teaching, nor to the recognition that a well conducted, fruitful mathematics, biology or poetry lesson is a personal achievement on the part of the teacher. The explicit study of the particulars of teaching, and the separation of knowledge, beliefs and values in the analysis of teachers' practice, can only help more teachers toward such personal achievements and benefit their students.

If the details of a teacher's professional knowledge are made as explicit as possible as he or she works to analyse some incident from or aspect of the teaching situation, weaknesses and strengths in that professional knowledge should become more evident and thus more subject to change.

As well, during such analysis information about how the teacher's values are affecting a situation may come to light. Analysis of the teacher thinking literature in this dissertation has shown that while values are an important motivating factor in teachers' classroom actions and decisions, values have not been explored in any rigorous way by teacher thinking researchers. Part of the reason for this is likely that many values are held tacitly, and direct investigation of them does not seem an easy task. Thus the moral condition, an important part of the conception of the

teacher laid out in chapter two, is inadequately served by the conception of the teacher which underlies the teacher thinking literature described thus far.

The work done so far in this dissertation has been to lay out a defensible conception of teaching, specifying both learning conditions and a moral condition; to critically review studies of teacher decision making and teachers' practical knowledge so as to explicate the conception of teaching which underlies this work and forms the "hard core" of the teacher thinking research program; to evaluate this conception according to the conception laid out in chapter two; and to explore the idea of tacit knowing as it applies to research into teacher thinking. The idea of values has arisen again and again, as it had been demonstrated that the complex area of values, both moral and non-moral, both personal and institutional, is suggested but not investigated in teacher thinking research. It has been recommended that values be taken as a focus for research into teacher thinking.

It is time now to focus on the concept of values and to examine some of the many difficult questions which may arise during study of the moral aspects of teaching. The concept of values may need clarification so that investigation of values can proceed more easily. In the next chapter this investigation is undertaken, and important research questions related to values are suggested.

Chapter Eight

Investigation of the Concept of Values and the
Relation of Values to Teacher Thinking

Studies of practical knowledge have extended into the realm of values but have failed to make a clear distinction between knowledge and values. Questions about the factors that motivate and influence teachers' classroom decisions often lead to the idea of values. Values and beliefs come to light through interviews, observations and analyses of teachers' practice. Teachers' values have not been investigated in any focussed way, however. Several reasons have been suggested in previous chapters for this lack of attention by researchers to values.

One reason appears to be that the conception of teaching which underlies the teacher thinking literature presents the teacher's thinking as being devoted basically to the two areas of instruction and classroom management. These are seen as the main areas of concern. Values are not portrayed as being of major importance for teachers. This is less true in the practical knowledge work, which does suggest value questions, but still these studies do not pursue the value questions they raise. The conception of the teacher within the hard core of the teacher thinking

research program generates a kind of taboo which does not allow for the in-depth investigation of values.

Another possible reason may be the difficulty of studying values because teachers' values are "contextualized" and expressed in the classroom in ways that may not match the values teachers explicitly espouse. Related to this is the idea that many values are held tacitly, and that articulation of them is difficult and would at any rate give an inadequate representation. Thus there has been little empirical work done on teachers' values, and little philosophical work on the concept of value itself, though it is a term much used by philosophers. Before examining the limited empirical work that has been done, investigation of the concept of values is in order.

Daniels (1975) found that there are few "recent and competent accounts of the concept of a value although...the term "value" (and its cognates) are frequently used in philosophical literature, in the social sciences and in pedagogical literature" (p.31-32). Two accounts that Daniels did find adequate were by Taylor (1961) and Baier (1969). The views of these authors and several others will be referred to later in the present account.

There are several usages of 'value' in which the term is roughly equivalent to 'worth', whether monetary or non-monetary. All of the following sentences use value to mean worth:

She doesn't know the value of a dollar.

What is the value of his farm?

I place great value on our friendship.

I have learned the value of regular exercise.

In music: What is the value of a half note in three quarter

time?

In algebra: What is the value of x?

'Value' can be used as a verb in sentences like "I

value your company" to mean appreciate or see as worthwhile.

There is also, in philosophical writing, much talk

of 'value judgements' and 'value terms' or 'value

expressions'. Some frequently used value terms are 'good',

'ought' and 'right', though, as Hare (1952) says, "almost

every word in our language is capable of being used on

occasion as a value-word (that is, commending or its

opposite)" (p.80). Value terms are words we use to indicate

that something has or lacks value according to some

standard: A "good" boy is good in accordance with some set

of rules about how boys ought to behave, and "It wasn't

right for you to treat him that way" refers implicitly to

some standards of how one ought to treat other people. In

value judgements (like the two sentences just mentioned) we

use value terms to pronounce on the value of things

according to some standards. There are moral and non-moral

value judgements. In moral value judgements the standards of

goodness or rightness referred to will be moral principles.

Hare (1952) says that "the function of moral principles is to guide conduct" (p.1).

In philosophical and educational literature people's 'values' are often referred to. 'Values' used in this way is a collective term for those principles which one holds dear and which one sees as having worth. Taylor (1961) says that "a person's values include all the standards and rules which together make up his way of life. They define his ideals and life goals...They are the standards and rules according to which he evaluates things and prescribes acts, as well as the standards and rules he lives by, whether or not he is aware of them" (p. 297-298).

Baier (1969) says that

"...someone holds or subscribes to some particular value V (e.g., achievement, work, altruism, comfort, equality, thrift, friendship). When we say this sort of thing of an individual or a whole society, we impute to that individual or that society a favourable attitude toward the realization of various states of affairs; we vaguely indicate those states of affairs by the value name, "V", and we imply that he has this favourable attitude because he expects (more or less explicitly) that the realization of these states of affairs makes some favourable difference to someone's life, not necessarily that of the value holder himself" (p.54).

In this way values differ from beliefs. Values are always (by definition) normative, but beliefs need not be so. Most values could be stated as beliefs ("I believe that abortion is wrong", "I believe in teaching children to be independent") but the reverse is not the case ("I believe that the sun is a star in the Milky Way" and "I believe that he will return home safely"). There are beliefs related to values, and empirical beliefs. Baier (1969) says that values differ from beliefs because the subject matter of values is "the good life" and how to come closer to it. The concept of "the good life" will be examined more closely momentarily.

In terms of beliefs, teachers' beliefs, like those of other people, will be related to values and to the empirical world. Value-related beliefs, which in this discussion will be referred to as identical with the values themselves, might be about the rightness or wrongness of various sorts of punishment, or the importance of not embarassing or using sarcasm on a child. These values, though sincerely held, might not be acted on when the stresses of the classroom call up the teacher's anger or impatience. He or she may suffer from a guilty conscience or feeling of failure. Or these values may conflict with institutional ones. Despite a teacher's belief in the importance of children learning cooperation through working in groups, he or she may be concerned that the noise level in the class does not meet school standards, and thus might curtail any group work. To give a more concrete example,

this author clearly remembers, still with some pain, how the vice-principal entered her classroom and strongly reprimanded and humiliated one of her students for a misdemeanor which neither the student nor the teacher considered at all serious. Aware that she was expected not to undermine the vice-principal's authority, and aware also that the student had broken a school rule, she did not speak up for the student, and suffered profound pangs of conscience.

As for teachers' empirical beliefs, these could relate to the efficacy of different methods of instruction (Aileen's "Language as the Key" seems to belong here) or they could, perhaps not quite consciously, relate to the capacities of girls and boys or children from different backgrounds. It is easy to see how, in a teacher's practice, the teacher's empirical beliefs can have ramifications in the realm of values and morality, because his or her actions, motivated to a large extent by beliefs, have profound effects on the students.

One last point may be made about beliefs, and it applies also to values. The beliefs of adults are, ideally, rationally formed and held. While we 'absorb' beliefs and values as children, we should as we grow into independent thinkers learn to evaluate the grounds on which we hold beliefs and values. Peters (1974) says that "we can understand rational behavior and belief as informed by general rules...Rational behavior and belief spring from the

recognition, implicit or explicit, that certain general considerations are grounds for action and belief" (p.121). The rational man "has to resolve and remove any putative inconsistencies between his existing beliefs and assumptions and any discrepant 'incoming' experiences or pieces of information" (p.125). To do such evaluation beliefs and values must be brought forward for conscious examination, something that teachers may not often have the chance to do. Constraints of time as well as the establishment of routines and habitual patterns of behavior may act against teachers engaging in reflection on the kind of inconsistencies that Peters mentions.

Dewey (1932) gives an excellent description of the early acquisition of values, beliefs and attitudes and the later consequences if one is unreflective:

"...habits of liking and disliking are formed early in life, prior to ability to use discriminating intelligence. Prejudices, unconscious biases are generated; one is uneven in his distribution of esteem and admiration; he is unduly sensitive to some values, relatively indifferent to others. He is set in his ways, and his immediate appreciations travel in the grooves laid down by his unconsciously formed habits. Hence the spontaneous "intuitions" of value have to be entertained subject to correction, to confirmation and revision, by personal observation of consequences and cross-questioning of their quality

and scope" (p.132).

Dewey recommends deliberation and reflection as an alternative to habituated action. Clearly reflection is linked to such ideas as routinization, decision making and values. Reflection will be explored in a later chapter of this dissertation.

To return to Baier's notion of "the good life", this can be defined as life as it would be if specific circumstances and attitudes were generally present. Many people share many values, and my vision of "the good life" might be quite similar to yours. It is likely, for instance, that we would both choose for our ideal world the condition that people not be prematurely killed, physically injured or emotionally battered, because we value human life. The sanctity of human life is one of our values, a principle that we would like to uphold and would like others to uphold. We are quick to condemn regimes or persons who flagrantly defy this principle. On other points we might differ. I might feel that the lives of animals are valuable, and be against the killing of animals for food, whereas you might agree that animals should not be used in medical experiments but should be raised for food. Though many (perhaps most) of my values will probably be in accord with the prevailing societal values, there will frequently be clashes between the values of persons or groups, and the

prevailing societal values. Such clashes fuel political discussion.

Returning to the principle of the sanctity of human life, there are probably few people who would claim not to hold this value, and if discussion of people's values did not go beyond such general statements of principle it might be rather uninteresting. The study of people's values in the context of their lives, however, suggests conflicts between the values held by different individuals, between individual and institutional values, between explicitly stated and tacitly or even subconsciously held values, and between the actions that one's values dictate and the immediate demands of various situations. Many difficult decisions may be called for. To what lengths will I go to uphold the principle of the sanctity of human life? Will I endanger my own life for others'? Will I, a German citizen during World War Two, hide a Jewish family in my attic? Will I, an affluent North American in the 1980's, reduce my consumption of food, goods and energy in the interests of third world people who may be dying because of world economic imbalance? On a more mundane level, to what extent will I, in my daily interactions, gratify my ego or choose an expedient course at the expense of another's feelings?

What values do I really express in my daily life, and to what extent do these coincide with the values which I articulate and claim to hold? This could be an extremely useful question for a teacher to pose to herself, and an

important focus for researchers working in classrooms with teachers to take. It is likely that disparities would become evident, because the "exigencies of practice" may compel teachers to act on some basis other than their own values. It is also possible that teachers actually hold and act on some values of which they are largely unaware.

Empirical studies of teachers' values are very few in number, partly, no doubt, because of the difficulty involved in isolating and articulating values. There may also be some reluctance to tackle this topic because values are largely seen in our society to be personal, a matter of 'one's own business'. It is not difficult to find references to teachers and values, but these usually turn out to concern the purposeful teaching of values by teachers, and related ethical and methodological problems.

General discussion of teachers and values often mentions the idea of value conflicts. Hartnett and Naish (1976), for instance, say that "the teacher has to be sensitive to the values of the group he teaches, and to his own values. In addition, he has to consider the values of other teachers in his school, the senior teachers, inspectors, and local education authorities. There may be confusion and conflicts within each or all of these groups" (p.183). Hartnett and Naish suggest that "What are required are empirical studies of educational organizations which cope at the conceptual and methodological levels with the

interrelationships between knowledge, values, organizational structures, and the individual level of analysis" (p.188).

Another topic discussed under the general heading of teachers and values is teachers as transmitters of societal values, often addressed in writing on the "hidden curriculum". Teachers' individual values and how these find expression in their teaching are mentioned much less often and very seldom studied.

One study that does shed some light on this area was done by Sharp and Green (1975). They looked at the values teachers professed and compared these with the observational evidence from their classrooms. They found a considerable gap between the values professed by a group of teachers at a "progressive" English primary school, and the evidence of the classroom practice of these teachers. Sharp and Green see societal forces at work in this conflict and through their study "tried to illustrate some of the structures of the broader context of the teachers' practice which tend to lead to consequences which belie both the moral commitments and the causes they appear to have adopted and profess" (p.vii). The teachers in this study professed the belief that all children should be seen as equal and can learn to work independently and flourish intellectually in a rich educational environment. The teachers claimed to value the teaching of such independence. The study found that in fact the teachers held strong class biases and treated their students differently according to their behavior and the

kind of home they came from, preventing or hindering the
development of educational independence in many cases. Sharp
and Green say that while "the teachers display a moral
concern that every child matters, in practice there is a
subtle process of sponsorship developing where opportunity
is being offered to some and closed off to others" (p.218).
Sharp and Green saw these teachers acting, virtually
unconsciously, as agents of their society's class
stratification, in spite of the belief in equality that they
professed.

There is other literature concerning the
contribution of schools to social stratification and the
categorization of students by teachers (for example, Breton,
1970; Cicourel and Kitsuse, 1963), and while this literature
does relate to the general discussion of teachers and
values, it tends to focus on teachers as transmitters of
societal values rather than examining individual teachers'
personal values.

There are, of course, many connections between
teachers' individual values and societal or school values,
and there may well be clashes of value between the personal
and the institutional.

McNair (1978-9), in the conclusions to her study
of teachers' "inflight" decisions alludes to the clash of
teachers' values with institutional values but,
tantalizingly, these remarks are not elaborated upon. She
says,

"These teachers are strong and unique individuals.
As we met with them and talked with them, their
individual personalities stood out clearly. As they
taught, however, we had the impression that their
actions and their thoughts were constrained by the
normative activity of the public school. The currents
of society are powerful and within them the tides of
schooling ebb and flow. Rarely is the flow disrupted
and new currents developed by the participants" (p.42).

McNair seems to be suggesting that these teachers were
adhering to values of school and society even when their own
values told them to act differently, and doing their best to
balance these sometimes opposing views. While these
"adjustments" may be done almost instinctively, that is,
with little reflection, it does seem that the conflicts
McNair suggests would be conscious sources of conflict to
the teachers; however she does not report questioning them
about these conflicts.

Hargreaves (1979) says this about teachers'
values: "When teachers are asked to display their values (to
researchers, colleagues, parents, etc.), they doubtless feel
constrained by that situation to express their ideals and to
assert a strong degree of coherence, consistency and
integration among those values. Practice will not be a
simple reflection of those values because practice arises in
a different situation which has a quite different structure
and set of constraints" (p.80). Hargreaves contrasts the

'abstract' values that one might articulately express with
the 'contextualized' values which are embedded in a
teachers' practice.

This is an important insight. Clandinin's "images"
seem very suggestive if we view them as expressions of her
subjects' contextualized values, rather than as
representations of their practical knowledge. "The classroom
as home", "Language as the key" (Clandinin 1986) and
"Teaching as relating to children" (Clandinin 1987)
certainly have implications for how the teachers to whom
they are attributed will conduct their classrooms, but
rather than encapsulating knowledge these "images" say
something about what these teachers value. Elbaz (1981) says
as much: "The image is generally imbued with a judgement of
value and constitutes a guide to the intuitive realization
of the teacher's purposes" (p.61). Later she describes
images as a combination of "the teacher's feelings, values,
needs and beliefs" (1983, p.134).

In analysing one's own practice a teacher might
well benefit from bringing the values that are embedded in
practice into focus, comparing them with expressed values
and pondering any disjuncture that might be found. The
teacher might also find that there are conflicts between
personal values and the values of the school. It is possible
that the idea of "image" could be helpful in bringing
personal values into focus. The formulation of "images",
with the help of an insightful researcher or fellow teacher,

could be an intermediate step, 'helping' tacitly or even subconsciously held values come forward in metaphoric expression. Some of the contextualized values that a teacher may reveal in his or her practice may be said to be held tacitly, in that they may never have been specifically formulated or articulated, but there is no reason to assume that they cannot be brought into focus for examination. Indeed, if a teacher is to clearly examine and evaluate personal values and beliefs and the grounds on which he or she holds them, clear, non-metaphoric articulation would seem to be essential. Hargreaves (1979) says that "it is a research task to analyse precisely how values are, often tacitly, embedded in action" (p.80). No studies were discovered that were designed specifically for this purpose, but the stimulated recall method, as well as observations and open ended interviews, might prove useful in the design of such studies.

Many questions arise in the investigation of teachers' values. In what ways do teachers' values clash with institutional values? In what ways do teachers' 'contextualized' values clash with the 'abstract' values that they openly express? How can contextualized values be made explicit so that they can be examined? Do the values teachers hold change with teaching experience, or are they quite stable throughout a teacher's career? If they do change, what factors in the school or in other areas of teachers' lives act to change them? These are all research

questions which merit study. If teachers are to reflect on
their practice, reflecting on the values they hold and how
and to what extent those values find expression in their
teaching would be a useful vehicle for teachers to change
their practice. Novice teachers could also benefit by such
reflection.

Another question that arises in the general
discussion of values and schools is whether people have the
right to try to change or impose upon the values held by
others. Specifically, do school administrators have the
right to try to change teachers' values, or to impose on
teachers methods or materials that conflict strongly with
the values they hold? The recitation of the Lord's Prayer
and daily Bible reading are required by the Public Schools
Act in British Columbia, but many teachers do not comply
with this law, finding it to be in conflict with their own
values. Principals tend to "turn a blind eye" and do not
attempt to enforce the rule. If they did a difficult
question of values would have to be resolved.

Some of the difficulties that have arisen in
getting teachers to implement new programs may relate to
value conflicts. Study of specific cases of implementation
problems with values as a major focus might prove useful. As
well, philosophical investigation of value questions in
schools should be done in a more focused and rigorous way.
The question of whether schools have the right to require
students to participate in activities that conflict with

their values or the values of their families arises
periodically, but the question of teachers' values is seldom
addressed except when gross violation of societal values by
a teacher comes to light.

The question of how to study teachers' values
remains a difficult one. Reflection by teachers on their
practice, with the help of researchers or fellow teachers,
might help to bring values into focus. Oberg (1986)
recommends that specific instances of classroom practice be
analyzed. "These are the overt manifestations of beliefs and
values underlying teachers' actions that are often implicit
and difficult to verbalize...When verbalized they sometimes
become detached from their referential actions, and we find
a discrepancy between what teachers say they believe and aim
for, and the beliefs and aims that are implied in their
professional actions. Only after describing and analyzing
actual instances of practice does the teacher begin to delve
beneath observable behaviors to the meaning of her actions."
(p.3) It might be especially useful for teachers to focus on
classroom instances in which they experience some conflict
or dilemma, for here there may be a clash between the
teacher's values and those of the school, or between the
teacher's values and the immediate practical demands of the
situation. Or a teacher may experience conflict because he
or she lacks the knowledge of practical ways to bring some
value to fruition in the classroom. The teacher may, for
example, want children to become more independent, but not

know quite how to structure lessons to help bring this about. The confluence of a teacher's values and knowledge could be a valuable entry point for understanding that teacher's practice. Realization and articulation of personal values may help teachers to see more clearly the areas in which their professional knowledge is inadequate, that they may remedy this by appropriate study or discussion with other teachers.

In summarizing the position established in this chapter, 'value' is a term generally used to mean worth. Used as a verb it can be used to mean appreciate or see as worthy. Value judgements are statements which evaluate according to some standards. There are moral and non-moral value judgements, moral value judgements referring to moral principles about human conduct as standards.

'Values' is a term used to refer to principles held dear or seen as worthwhile by a person or group of people, and they relate to a vision of "the good life". Values differ from beliefs in that a person can have beliefs relating to values and beliefs relating to the empirical world. While we as adults should ideally hold both our values and our beliefs rationally, examining the grounds on which we hold them and weighing them against conflicting incoming evidence, we do not always have the time, inclination or motivation to do so. As well, values and beliefs may be held tacitly or even unconsciously, and need to be brought into focus for our examination. Investigation

of teachers' values may present considerable methodological difficulties, but the study of values would seem to be essential if researchers wish to understand teachers' thinking. As well, articulation of personal values would help teachers to analyse and change their own practice.

The concept of decision appears to be too narrow to shed much light on value questions. "Personal practical knowledge" studies have given rich descriptions of teachers' thinking and their lives in classrooms but have tended, though they are very descriptive, to offer insufficient analysis, failing to make the important separation between knowledge, values and beliefs in the data they report. As well, this work tends to lay too heavy a stress on the notion of tacit knowledge, and perhaps for this reason has not asked many of the "Why?" questions suggested by the data.

The question seems to be how to get at this tacit material and the confusing, contextualized mix of knowledge, values and beliefs which each teacher holds. There is no current research which takes this focus, but recent attention to the notion of reflection by teachers on their practice may represent a methodological advancement which will allow greater access to this material.

The idea of teachers reflecting in a focussed way on their practice and on their values brings teachers into an equal partnership with researchers in the study of teacher thinking. The people who can shed the most light on

their thinking is teachers themselves, with the probing and guidance of researchers or fellow teachers. The people who can benefit the most from understanding their own thinking is teachers themselves, and ultimately their students. Only they can change their own practice, improve the quality of their teaching, bring about learning in their students more effectively and make decisions in the moral realm with greater understanding. As well as having other people try to understand them, it will be productive for them to understand themselves.

Reflection as a research focus seems to be a new move in the study of teacher thinking, one which involves the teacher as never before and which has the potential to explore value questions and better serve the moral condition of teaching. Reflection must be focussed to be productive, however. The notion of reflection bears examination, and this task is undertaken in the next chapter.

Chapter Nine

The Role of Reflection

This dissertation began with the laying out of a conception of teaching which entailed the following things: that the intention of teaching is to bring about learning; that the content, methods and materials selected must be appropriate to the cognitive state of the learner(s); that teachers' lessons must in some way embody or express to the learner(s) that which is to be taught; and that teaching is an activity or occupation which occurs in the moral realm, so teachers' interactions with students must conform to moral principles, especially respect for persons. In this conception teachers' personal and educational values are of central importance. This was suggested as an entirely defensible conception, and used as a basis for evaluating the conception of teaching which underlies studies of teacher thinking.

Investigation of selected studies from the program of research on teacher thinking revealed that at the "hard core" of this research program is a conception of teaching which accords with the one given above except in one major way: teachers' values are given only peripheral treatment. Value questions are suggested by much of the research reviewed, but they are not addressed or are addressed in an

unfocussed way. There appears to be a built in taboo against
the in-depth investigation of teachers' values. There are
several possible reasons for this:

1) There are serious methodological difficulties involved in
   the study of teachers' values. The significance of these
   may be exaggerated because of a belief that since many
   values are held tacitly, they cannot be articulated by
   teachers and therefore cannot be investigated.

2) Personal values may be seen as a matter of "one's own
   business", an area into which researchers have no
   right to probe.

3) Values may simply be seen as unimportant compared to
   matters directly related to knowledge and learning.

4) The importance of values may have been overlooked
   because of the beliefs which form the hard core of
   this research program, that is, that the important
   things to know about teachers concern instruction
   and classroom management.

       Any or all of these reasons may apply, and there
is no empirical basis on which to judge which, if any, are
accurate. With respect to the first, it would seem that
methodological difficulties could be surmounted, given the
ingenuity of researchers. The sophistication and variety of
research techniques available would seem to allow for at

least some success in investigating values, even those which may be held tacitly or subconsciously. However, if the belief is firmly held that tacit material cannot be articulated, researchers might not even try to overcome methodological difficulties.

The second and third possibilties listed above, that values may be seen as a matter of "one's own business" or may simply be seen as unimportant, can both be answered with the same argument. Since teaching is an activity in the moral realm, in that it has to do with interactions between people, values are not only important but absolutely central. Furthermore, teachers are accountable to the public for their actions and they must be able to justify them. This does not mean baring one's soul at a town meeting, but it does mean teachers need to have a clear idea of their own and others' value structures, and of what is involved in defending value postures, so that they can defend their actions as teachers intelligently and with understanding. Explaining the basis on which decisions are made will necessarily involve values.

It will not work to say that teaching can be value-free and that teachers can keep their values to themselves and not express them in their teaching. We are the embodiment of our values, as well as our knowledge and beliefs, and our decisions, actions and reactions in the classroom will express our values. As well as being morally and publicly accountable, which will involve articulating

values, teachers should also be committed to ongoing professional development and growth. An important part of professional development should be focussing on and articulating values so that teachers can understand how values affect teaching and can thus change with awareness.

It was argued earlier in this dissertation that if the basic goal of research into teaching is to improve practice, then investigation of teachers' values should be carried out, because values are one of the important factors which motivate teachers' classroom decisions and actions. No matter how much researchers know about what "expert" teachers do or what the content of interactive decisions is, no matter how many recommendations from research filter down into professional day activities, it is only teachers themselves who can change their own practice. They must be intimately involved in the research process if they are to understand what they themselves are doing and why. This might be stated as "teacher thinking from the inside". I want to understand my own thinking, rather than just describing it to the researcher so he or she can try to understand it. The notion of reflection on practice seems to capture this idea, and also to offer a way of "getting at" teachers' values. The remainder of this chapter will investigate the notion of reflection on practice.

A. The concept of reflection

Discussions of what teachers know, how teachers can improve their practice and find more satisfaction, and how novice teachers can be more effectively trained, often include the notion that teachers should be reflective. 'Reflective' means inclined toward reflection, and examination of the concept of reflection is a useful first step in exploring the notion of reflection by teachers on their practice.

The word reflection and its cognates have two basic sets of meanings. The first set is illustrated in the following sentences:

The sun's warmth reflects off the white, south facing wall of my house, giving me the earliest tomatoes in the neighborhood.

She stopped to look at her reflection in the department store window.

The behavior of those boys at the track meet is a poor reflection on the school.

Her ability is not reflected in her marks.

I couldn't see his eyes, for he wore reflective sunglasses.

While all of these involve somewhat different meanings, they do have some qualities in common. All include the idea of an existing state, object or condition, and the

reflection involves some rebounding off or producing an
image of this state, object or condition.

Another set of uses of the word reflection
involves mental reflection, and it is mental reflection that
is of interest here. What does it mean to say that teachers
need the time and the propensity to reflect on their work?
What would I do if I sat down to reflect on my teaching?
Would I simply think about it? Is reflecting the same as
thinking? Actually it often seems as if I think about my
work night and day. Thoughts of report cards, Christmas
concerts and students' problems crowd my mind unwanted when
I brush my teeth or try to go to sleep. This sort of random
and untidy thinking is not reflection, though reflection
does involve some sort of thinking.

I might, if I had the time or took the time,
reflect on my work several times a day. This would involve
some very "thoughtful thinking". I can remember sitting at
my desk watching my students as they worked, a moment of
quiet in a hectic day, and reflecting on how I felt about
them. Earlier in the day I had been angry at them for excess
noise and unfinished work, but a few moments' reflection
brought me to my deeper feelings of affection and pride, and
put that particular difficult morning into a larger context.
An important factor here is time. Even if the time amounts
to only a few minutes, reflection is not done in a hurried
way. It involves removing oneself from the action, taking a
"time-out" and going on a leisurely journey through one's

thoughts. As I sat at my desk reflecting for a short time, the tension of a busy afternoon subsided and I gained a clearer perspective as I brought to mind thoughts and feelings about my students and my work as a whole. Reflection of this sort often helps to solve an immediate conflict or problem by placing present events in a larger context. New connections and associations between ideas may occur.

By saying that reflection involves a leisurely journey through one's thoughts I do not mean that it necessarily takes much time. A sentence like, "Upon reflection, I decided that the plan was too dangerous" could imply only that I thought for a short time about the plan, but this thinking was focussed and careful, and the time I spent on it was "time out" from whatever pressures were weighing on me.

The statement, "I never have time to reflect on my work" seems to imply that if I did reflect it might help me to solve some problems, resolve some conflict, gain understanding or produce some new ideas for action. It might heal some mental unease or confusion. It might also start or restart a creative process of connecting and assimilating ideas. It seems also that reflection would be done rather dispassionately, although one might "pass through" feelings of anger or exhultation as he or she looked back on an experience. It does not seem right to say that

he reflected in a rage, or that she engaged in ecstatic reflection. The notion of reflection carries with it some sense of disconnecting from strong emotions, seeing "the larger picture" and perhaps working through to some resolution. One removes oneself from involvement with the madding crowd in order to ponder and gain clarity.

If we were to attend the funeral of our old friend Joe Smith, the minister might say, "Let us reflect for a moment on the life of Joe Smith." We might all close our eyes and reflect for a few minutes in silence, each reviewing our special memories of old Joe, summing up his life and our feelings about him, and making peace with his memory so that we can each in our own way lay him to rest. If the minister begins to speak after suggesting that we reflect, he might offer his own memories of Joe and recount a few favorite stories. During his talk we will make our own mental associations and call up memories, making the reflection personal even if it is guided. Indeed, reflection must always be a personal experience, because we each have our own memories, feelings and experiences connected with even a public event.

Reflection is personal but it can be stimulated by discussion with others. The minister at Joe Smith's funeral might stimulate us to reflect more deeply than we might otherwise have done. The sentence used earlier about the dangerous plan could easily be reworded to read, "Upon reflection, we decided that the plan was too dangerous",

implying that as we each did our own focussed, careful thinking we also exchanged ideas. Reflection is personal but discussion with others can make it more fruitful.

Religious or philosophical reflection, in which one might reflect on the nature of God, man and the universe, is also personal, as we draw upon our own experiences and backgrounds to decide on the truth of various religious or philosophical principles. The notion of arriving at or at least aiming for some truth or some resolution seems to be involved in reflection.

From this discussion several general ideas emerge: mental reflection can be seen as "thoughtful thinking", and it involves calling up knowledge, feelings, memories and opinions connected with a certain topic. Reflection is about something specific; it is not just the free flow of thoughts as in a "day-dream". It is not random and untidy, though one's thoughts may range quite freely and new connections may be made. The goal of reflection may be the solution to a problem, the awareness of what action needs to be taken in some situation, the achievement of peace of mind, the realization of some truth or the arrival at some resolution. The time spent on reflection could be only a few minutes, but reflecting is done at an unhurried pace. It is also done dispassionately, although feelings may be "passed through" during reflection. Reflection can concern public issues but is always personal because each person draws on his or her own experiences, thoughts and feelings. Nevertheless,

reflection can be made more fruitful by the constructive exchange of ideas with others.

It is not difficult to conceive of a teacher doing many other kinds of thinking. One may experience an endless run-on of non-productive thoughts related to teaching practice. One may engage in self recrimination and guilt when things do not go as he or she would like them to. One may fantasize about telling off the principal or daydream about how nice the class would be if only one or two difficult children were gone. One may engage in very specific and immediate problem solving, such as how to break up the playground fight or when to move from blackboard explanation to notebook practice. None of these seems to qualify as reflection. If a teacher is reflective about his or her practice, the personal and professional knowledge and the values and beliefs that guide decisions are subjected to scrutiny and careful thought. The necessary repetition of various actions does not become so routinized as to be unquestioned. Most teachers do undoubtedly engage to some extent in reflection on their practice, and this reflection would seem to be a rich area for study, of potential benefit to both teacher and researcher. As a teacher reflects he or she calls up knowledge, beliefs and values, though perhaps not in a completely focussed way. Interaction in reflective conversation with a researcher could help a teacher to focus on specific bits of knowledge, beliefs and values, articulate them and examine them and thus make changes from

a position of greater understanding. Observations of teachers in the classroom would also be helpful so that they can compare their expressed values with those which they are perceived to be acting from. This kind of reflective conversation may be the best way for both teachers and researchers to gain understanding of teachers' values.

B. Can the tacit be articulated?

If a teacher is to engage in careful thought about the knowledge, beliefs and values that guide his or her decisions, then he or she must be able to bring these into focus and articulate them. If reflection on practice as it has been portrayed here is to be a credible idea, then the claim that this can be done must be demonstrated to be a reasonable one. To state that teachers can do this focussing and articulating is an empirical claim, although this author has neither engaged in nor reported research specifically designed to demonstrate its truth. Evidence and argument have been offered to support it, however. Studies of teacher decision making using stimulated recall and interview studies of teachers' practical knowledge have helped to demonstrate that teachers can report their thoughts and articulate their beliefs and values, though in a less focussed way than is suggested here. Certainly there is a respectable tradition which claims (or assumes) that people can and should at times articulate that which they may know, believe and value tacitly and implicitly, and discussions of

reflection often assume that people have this capability. Clark and Peterson (1986), for example, say that "The maturing professional teacher is one who has taken some steps toward making explicit his or her implicit theories and beliefs about learners, curriculum, subject matter and the teacher's role" (p.5). Teachers should be no less capable (and may even, because of their verbal ability, be more capable) than others of doing such articulation. If one was to claim that teachers could not bring into focus and articulate most of their knowledge, beliefs and values, then the generalization would have to made that no one can, and this seems extremely unlikely. Much of social science research is based on the assumption that people can do this focussing and articulating, imperfectly, no doubt, but well enough to give an adequate representation of their thoughts.

In his discussion of professional "artistry", intuitive knowing and "reflection-in-action" Schön (1983) says that "when practitioners reflect-in-action, they describe their own intutive understandings...It is true, neverthless, that there is always a gap between such descriptions and the reality to which they refer..." but "Incompleteness of description is no impediment to reflection...Reflection-in-action does not depend on a description of intuitive knowing that is complete or faithful to internal representation. Although some descriptions are more appropriate to reflection-in-action than others, descriptions that are not very good may be good

enough to enable an inquirer to criticize and restructure his intuitive understandings so as to produce new actions that improve the situation or trigger a reframing of the problem" (pp.276-277).

It is clear that we do not have all the details of our knowledge, beliefs and values at our mental fingertips at all times, not only because we may not, or at least not recently, have attempted to focus on this material, but because our minds can only deal with a limited amount of material at one time. You can only have ten files on the desktop, as my word processor might say. It is clearly true that we hold much of our knowledge, beliefs and values tacitly, but this is not to say that a large part of our tacitly held material cannot be made explicit.

C. Why should the tacit be made explicit?

"Intuitive" understandings, as Schon (1983) has described them, are an essential part of a teacher's practice as he or she moves swiftly through a teaching day, but if a teacher is to reflect on these intuitions, and on the results of following them, they must come forward for examination. These intuitive understandings are based on a teacher's practical knowledge gained through experience and also on his or her beliefs and values. Many values may be acquired at an early age and not critically examined in adulthood.

In his discussion of moral theory, Dewey (1932) argues against habituation to traditional morality in favor of "the reflection an individual engages in when he attempts to find general principles which shall direct and justify his conduct. Moral theory begins, in germ, when anyone asks 'Why should I act this way and not otherwise? Why is this right and that wrong?'...Any adult enters the road when, in the presence of moral perplexity, of doubt as to what is right or best to do, he attempts to find his way out through reflection which will lead him to some principle he regards as dependable" (p.5). These statements could certainly apply to a teacher reflecting on his or her practice. Many of the situations that cause doubt or anxiety to teachers involve moral questions, or questions of value. In reflecting on a classroom incident after it has happened, a teacher may ask, "Why did I react to that student in that way? Was it the most productive way to react? Was it fair? What might have happened if I hadn't gotten angry? What should I do next time a similar situation occurs?"

Of course it is not only in the realm of values that such questions are appropriate. Reflecting on, for instance, an unsuccessful lesson, a teacher might ask, "What went wrong? Was my planning inadequate? Did I overestimate the ability of my students to do this task? Was my explanation unclear?" And less straightforward questions such as, "Could I have misinterpreted cues like noise level or the expression on students' faces? Was I right to stop

the lesson when I did?" A successful lesson can also yield
useful information when subjected to such analysis. A simple
question like, "Why was this lesson so successful?" could be
a very useful question for a teacher to ask him or herself.
The point is that reflection will involve focussing on and
exploring such questions. Articulation is essential: details
of knowledge, beliefs and values that remain tacit or
implicit are not reflected upon.

D. Reflection in the literature

Several current writers on teaching have
described, defined or discussed reflection, and these
discussions are generally in harmony with the notion of
reflection as it has been discussed here, though none has
looked specifically at reflection as a way to bring
teachers' values to light. Shulman (1987) says that
reflection is "what a teacher does when he or she looks back
at the teaching and learning that has occurred, and
reconstructs, reenacts and/or recaptures the events, the
emotions and the accomplishments. It is that set of
processes through which a professional learns from
experience" (p.19).

Oberg (1986) says that a teacher's critical
reflection on his or her teaching practices "aims at
uncovering implicit assumptions on which professional
practice is based", and that the understanding resulting
from this reflection "is a first step toward agent-oriented

and -directed improvement of professional practice" (p.1).
Oberg holds that the assistance of a second party is
probably essential in this undertaking. This second party
could be a researcher. The reflective conversation between
teacher and researcher as discussed in this chapter is no
doubt a productive one, but not all teachers have a chance
to interact with a researcher. Discussion with teaching
colleagues can also aid a teacher in his or her reflection.
Teachers do not, however, appear to engage very often in
reflective conversation with each other. Many writers (for
example Goodlad, 1984; Lortie, 1975; Tye and Tye, 1984) have
documented this lack of discussion and the resulting
professional isolation of teachers. This isolation is likely
to be a major hindrance to reflection on practice. [See
Appendix One for a fuller discussion of teacher isolation.]

Another writer on reflection is Zeichner.In his
writing on teacher education Zeichner (1981-82) draws
extensively from Dewey's 1933 book How We
Think: A Restatement of the Relation of Reflective
Thinking to the Educative Process. Dewey distinguishes
between routine action, which is "guided by tradition,
authority and the official definitions within a social
setting" (Zeichner, p.5) and reflective action, which
"entails active, persistent and careful consideration of any
belief or supposed form of knowledge in light of the grounds
that support it and the further consequences to which it
leads" (Dewey, 1933, p.9). Dewey further identifies three

attitudes which are prerequisite to reflective action. The first is openmindedness, which involves "an active desire to listen to more sides than one...and to recognize the possibility of error even in the beliefs that are dearest to us" (p.29). Openmindedness would require a teacher to examine critically not only the culture of the school but his or her own "dearest beliefs" about teaching. The second attitude Dewey identifies is responsibility. Zeichner says that for a teacher responsibility means "careful consideration of the consequences to which an action leads. Teachers must "ask why they are doing what they are doing in the classroom and ask in a way that transcends the question of immediate utility" (Zeichner, p.6). This will involve examination of personal, institutional and societal values. The third attitude is wholeheartedness, by which the other two attitudes are embraced and made an important part of one's life.

Dewey was also an important influence on the thinking of Donald Schon, whose 1983 book The Reflective Practitioner discusses reflection by practitioners in several different professions. Schon argues that practitioners engage in "reflection-in-action", a kind of creative problem solving in which they compare new situations to ones they have encountered in the past, experiment to find the answers to problems and generate and test new hypotheses while they are engaged in practising their professions. (See Appendix Two for a fuller discussion

and critique of Schon's work] Schon also recognizes the problem of teachers' professional isolation. He writes that "The teacher's isolation in her classroom works against reflection-in-action. She needs to communicate her private puzzles and insights, to test them against the views of her peers" (p.33).

All of these writers see reflection and reflective conversation as important for teachers who wish to grow professionally and make changes in their practice. Encouraging teachers to be reflective and especially to reflect on their values and how these find expression in the classroom seems to offer a remedy for the lack of research into the important area of teachers' values.

In chapter ten this idea will be explored further, and the move from practical knowledge to reflection will be discussed.

Chapter Ten

Studies of Reflection: New Possibilities

In chapter four an analysis was offered of the literature on teacher decision making. In chapter six there was a similar analysis of literature on teachers' practical knowledge. Each of these analyses involved examination of a body of literature in the light of the conception of teaching laid out in chapter two of this dissertation.

Such an analysis cannot be done on studies of teacher reflection, because although some researchers are beginning to talk about reflection, as a research focus it is very new, and there does not yet exist a body of literature which can be assessed. Thus the present chapter, rather than offering an analysis, explores the possibilities for new insight into teacher thinking that research on reflection appears to offer.

It was demonstrated in chapter six that the practical knowledge literature adequately meets the learning condition of the conception of teaching laid out in chapter two, but falls short on the moral condition. Practical knowledge studies often mention teachers' values, but do not probe into value questions. The submergence of values in the mix of knowledge, beliefs and values called "practical knowledge" or "personal practical knowledge", as well as

too-heavy adherence to the notion of tacit knowing, appear to be the main reasons for this lack of probing into value questions. The conception of the teacher implicit in this work remains rooted in the learning conditions.

The move from the study of practical knowledge to the study of reflection appears to be a "theoretically progressive problemshift", because reflection as a research focus offers potential access to teachers' values in a way that decision making and practical knowledge have not. It has been argued throughout this dissertation that the study of teachers' values is of central importance because of the moral condition of teaching. If studies of reflection take the form of a reflective conversation between teacher and researcher, with a specific focus on values, teachers may be able to focus on and articulate values and beliefs that they hold tacitly. Such focussing and articulating, it has been argued here, can and should be done, because teachers are morally and publicly accountable for their actions and because teachers who wish to intelligently change their practice need to understand the factors which motivate their classroom actions and decisions. Since values are a central motivating factor in these actions and decisions, whatever insight teachers can gain into their values should help them to change and improve their practice.

It is important that teachers reflect not only on values, of course, but on their knowledge and beliefs as well. Each of the categories of knowledge, beliefs and

values form an important focus for reflection. These categories interact, but taking a specific focus seems likely to offer the greatest insight.

The notion of reflection captures the essence of teacher thinking, because reflection on practice is teachers thinking carefully about their teaching and about their thinking about teaching. The notion of reflection also gives full credence to the fact that teachers must change their own teaching, from the inside out, and that this must be done on the basis of understanding.

Studies of reflection could centre on specific classroom incidents, as Oberg (1986) suggests, with value questions being rigorously pursued. Or, reflective conversations could start with questions such as "What do you really care about in your daily teaching?" Articulation of basic values could then be followed by questions such as "How did you acquire this value? Why is it worthwhile?" and by classroom observations which could make clear the extent to which stated values find expression in the classroom.

The investigation of values through teachers' reflection on practice should not be the sole property of researchers. By its very nature, this kind of work involves teachers as equal participants in the research. Thus a methodological change accompanies the move to the study of reflection. Reflective conversations could and should also involve teachers, without the presence of a researcher, helping each other to reflect on values. University

educators could, as well as conducting research with teachers, act as a stimulus and source of ideas for teachers wishing to engage in reflective conversations with each other. University educators could thus help in the development of truly reflective practitioners.

In summary, the move from practical knowledge to reflection is "theoretically progressive" because reflection as a research focus offers potential access to teachers' values, including those which may be held tacitly. Values are an important factor in teacher thinking, and teachers' values have never been adequately investigated. Reflective conversations between researchers and teachers, with values as a specific research focus, may yield new insight into teachers' thinking. Such work may also help teachers to improve their practice, because gaining insight, through focussed reflection, into the factors which guide their classroom actions, will enable teachers to change with understanding. Focussed reflective conversations between teachers may thus hold the possibility for widespread improvement of practice.

If such focussed reflection is encouraged by researchers and undertaken by teachers, there may be a genuine methodological shift in the teacher thinking research program, because teachers are equal partners with researchers in reflective conversations. Finally, a change in the "hard core" of the teacher thinking research program may come about, such that the moral realm of teaching is

understood and recognized to be of central importance in
teaching.

Chapter Eleven

Conclusions and Recommendations

One of the purposes of this dissertation was to explicate a conception of teaching that was logically, educationally and morally defensible. This was done largely through reference to the work of Paul Hirst and Richard Peters. This conception of teaching was then used as a basis on which to evaluate literature on teacher thinking. A framework based somewhat loosely on the work of Imre Lakatos was used to identify research into teacher thinking as a research program, distinct from the program of research into teacher behavior, though sharing with it some characteristics.

The conception of teaching that was developed specified that teaching involves the intention to bring about learning in students, that appropriate methods, materials and content be selected, that lessons be geared to the developmental stage of the learners so that the intention to bring about learning can most effectively be fulfilled, and that what is to be learnt must not be trivial or undesirable. These were called the learning conditions. It was also specified that the teacher should express and embody, to the best of his or her ability, the moral principal of respect for persons in all his or her dealings with students. This was called the moral condition.

Detailed critical examination of the literature on teacher decision making showed that this literature is almost entirely concerned with the learning conditions, and that the conception of teaching which underlies this work portrays teachers as active, thinking professionals who struggle with questions of content, method, material and level of students, as well as with questions related to classroom management. Classroom management, it was suggested, was related to learning in that environment affects learning, but is also related to control and to institutional standards for order. Since no attempt is made in this literature to follow up on the value questions that arise, and since teachers are not questioned as to their moral values or their non-moral values and beliefs which may have ramifications in the moral realm, it was concluded that the conception of the teacher underlying this work does not portray the teacher as having a large area of moral responsibility and as struggling with value questions. Thus the moral condition is not met in this conception.

Literature on teachers' practical knowledge was then examined. Studies of routinization and expert-novice studies have a different research focus, or sensitizing concept, than decision studies, but were found to have the same underlying conception of the teacher. Again, questions related to values arose but were not pursued. Studies of teachers' "personal practical knowledge" illuminated values more than previous research, but because values were

submerged in the mix of knowledge, beliefs and values that these authors called "personal practical knowledge" there was still no probing done into value questions. The move to the study of "personal practical knowledge" could be, it was suggested, termed a "progressive problemshift" because this work did raise new questions and give, because of the "personal" nature of the data reported, some new insight into teachers' thinking. However the move to the study of "personal practical knowledge" did not affect the "hard core" of the teacher thinking program. The conception of the teacher remained rooted in the learning conditions. Since issues related to values were mentioned in this work it was AS IF some work on values had been done, but in fact there was rich description and little analysis. Thus this was a change in the "protective belt" only, and the "hard core" of the teacher thinking program, which seems to contain a taboo against the investigation of values, remained protected and unchanged.

Several reasons for this taboo were discussed: that because values is such a complex area it might be too difficult methodologically to study; that too heavy adherence to the notion of tacit knowing might make the articulation of values seem impossible; that values might be seen as a private matter into which researchers should not pry; and that values might simply be seen as unimportant by researchers.

Investigation of the notion of tacit knowing and the concept of values suggested that investigation of teachers' values was both possible and important. It was argued that teachers _can_ focus on and articulate their personal values and beliefs and that they should examine where these come from and the grounds on which they are held.

A relatively new focus in research on teaching is reflection on practice. This focus appears to hold considerable promise for the study of teachers' values, and to involve not only a "progressive problemshift" but a genuine methodological shift, in that the teacher can be seen as an equal partner in reflective conversation with the researcher. This shift may indeed change the "hard core" of the teacher thinking program, if researchers acknowledge the necessity for encouraging teachers to focus and reflect meaningfully on the many value questions which confront them.

To understand matters relating to the learning conditions, researchers need to investigate teachers' knowledge and the ways in which they strive to bring about learning in their students. To understand matters relating to the moral condition, researchers need to investigate teachers' values and beliefs and the ways in which these affect teachers' judgements about how to treat students in various situations. Investigations in the moral realm may have a two-fold benefit. Researchers may gain better access

to teachers' values and beliefs, some of which may be held tacitly, if they encourage teachers to reflect on their values and beliefs. Teachers will also benefit by doing such reflection, because gaining understanding of their own values and beliefs will enable them to change their practice to better accord with the moral principle of respect for persons.

Reflection by teachers on their practice, focussed by the basic categories of knowledge, beliefs and values, and informed by awareness of the importance of the moral realm, should be productive, and may form the basis for a new kind of study, the study of teacher thinking "from the inside out".

As a result of this investigation the following recommendations can be made:

1) That questions relating to values be rigorously investigated whenever they arise during the course of an investigation into teacher thinking. This can often be begun by asking "Why?" questions of teachers.

2) That teachers' personal values be taken as a specific research focus in studies of teacher thinking; that teachers in such studies be encouraged to articulate their educational and moral values; that classroom observations be done and reflective conversations held so that teachers can

be told what values appear to be operating in their classrooms and ponder any disjunctures with their expressed values.

3) That qualitative studies of schools be undertaken with values as the research focus, so that the fabric of personal, institutional and societal values within which teachers move can be portrayed.

4) That faculties of education establish wider and more consistent communication with teachers in schools and attempt to help teachers focus their reflection; and, since only a small number of teachers can or even want to be the subjects of research who enter into reflective conversations with researchers, that faculties of education encourage teachers to engage in reflective conversations with each other.

The ultimate goal of research into teaching is surely the improvement of practice. Even though we may sometimes value research knowledge for its own sake it seems absurd to deny that it is the improvement of practice for which we strive, that it is the real world of children in schools and their ultimate good which drives the educational research industry. Focussed reflection by teachers on their own practice, with the help and guidance of a second party, holds the greatest promise for teachers to change and improve, with understanding of the weaknesses and strengths in their professional knowledge, of the personal beliefs and

values that guide them, and of the other sets of values, institutional and societal, which buffet them. As actors in a profoundly moral realm it is paramount that teachers understand this realm. Researchers into teacher thinking have an important role to play in furthering this understanding.

Appendix One

Teacher Isolation as a Hindrance

to Reflection on Practice

In Goodlad's (1984) massive study of American schools he found that teachers appeared to function quite autonomously. But that autonomy seemed to be exercised in a context "more of isolation than of rich professional dialogue about a plethora of educational alternatives" (p.186). Because teachers usually teach alone in a classroom and spend little face to face time alone with colleagues, Goodlad found that "teachers perceived their awareness of one another, communication, and mutual assistance not to be strong. Although generally supportive of their colleagues, they had only moderate knowledge...about how their colleagues actually behaved with students, their educational beliefs, and their competence" (p.188).

Lortie (1975), in describing the isolation of beginning teachers, states that "the cellular organization of schools constrains the amount of interchange possible; beginning teachers spend most of their time physically apart from colleagues" (p.72). Lortie states that lack of adult assistance can make tha beginning months of teaching "a private ordeal". While the gaining of experience and confidence make teaching no longer an ordeal (on most days, anyway!), the professional isolation Lortie describes seems to begin a pattern that continues in a teacher's career.

Schon (1983) also recognizes this problem and states that "The teacher's isolation in her classroom works against reflection-in-action. She needs to communicate her private puzzles and insights, to test them against the views of her peers" (p.333).

Writers on implementation of new programs have recognized the problem of teacher isolation, and there is a relationship between hindrances to change within schools and hindrances to teacher reflection. Sarason (1971) says that "teachers are alone with their children and problems in a classroom, and the frequency and pattern of contact with others like themselves are of a kind and quality that make new learning and change unlikely" (p.107).

Fullan (1982) says that change within a school "involves resocialization. Interaction is the primary basis for social learning. New meanings, new behaviors, new skills depend significantly on whether teachers are working as isolated individuals, or exchanging ideas, support and positive feelings about their work" (p.72).

If, as Tye and Tye (1984) suggest, "...new ideas in education travel rather randomly through the system, from person to person and from school to school" (p.231), then the implications for educational change of teacher isolation are profound. Surely one of the subjects of a teacher's reflection will be the appropriateness of new programs and materials and her capability at using them. Teachers may avoid using new materials because of feelings of insecurity

and simple misunderstandings which could be dispelled by conversation with others.

Like other human beings, teachers do, of course, harbour insecurity, and many appear to have a deep-seated fear of criticism. Clandinin (1983) found this in her early work with the teacher she called Stephanie. Allowing another person to watch one teach, or engaging in frank discussion of classroom problems which might show that one is less than perfect as a teacher, can be very threatening. It may be that as teachers our feelings of self-worth are strongly tied to our jobs, because it is difficult to do our jobs without investing our feelings. In carrying out our professional duties our lives are inevitably entwined with those of our young clients, and our perceived faults and failures strike at our very hearts. "You didn't try hard enough. You didn't care enough" feels like the message of every criticism, and we build protective shells of isolation, close our doors and do not share ideas and discuss problems very often with our colleagues. Reflection is not impossible in such circumstances, but it is hindered by feelings of guilt, frustration and failure which communication with others could help to change.

Another factor that may keep teachers isolated is the individualism which McNair (1978-79) remarks on and the professional autonomy that teachers value so highly. They may guard this autonomy because they sometimes perceive a desire at the levels of school administration, school board

and government to homogenize and regulate teaching and curriculum to too great a degree.

Teacher isolation may be what Sarason (1971) calls a "behavioral regularity", so deeply engrained in teachers and in the school system that we do not really see its causes, ramifications and alternatives. Productive change in schools and the spread of new ideas can be hindered by lack of communication between teachers. As well, there is little regular and widespread communication between public school educators and their university counterparts, though each has much to share with the other. One effect of teacher isolation is likely the frequent hindrance of productive reflection by teachers on their practice. Caught in a web of frustration and lacking, through choice or circumstance, helpful input from others, teachers may think endlessly but do little reflection. Reflection on classroom decisions and on the knowledge, beliefs and values that underlie them seems essential if teachers are to understand and intelligently change their practice for the benefit of their students and for their own satisfaction. Constructive communication with colleagues is an important part of such reflective practice.

Appendix Two

A Critique of the Work of Donald Schön

The focus that Donald Schön (1983) has taken on the notion of reflection by professionals on their practice is a valuable one for teachers and researchers into teaching to take. Schön has made a worthy contribution to the improvement of professional practice. Because his ideas have recently been a major influence on writers on teacher thinking, a detailed examination of his work is in order.

Schön's conception of reflective practice is closely tied to his understanding of reflection itself and his notion of "reflection-in-action", an activity in which he claims that professionals engage while they are practising their professions. He says that reflection-in-action is undertaken especially when a practitioner encounters a situation that is puzzling, troubling or in some way unique. He describes how practitioners compare new situations to ones they have encountered in the past, and how they experiment to find the answers to problems, generating and testing hypotheses.

Schön's examples seem to illustrate several different kinds of "reflection-in-action", and most adhere to the criterion presented earlier that reflection involves removing oneself from the action in order to reflect. Thus the term "reflection-in-action" has a rather odd ring to it.

Some of Schön's examples seem not to be
illustrative of professionals reflecting while actively
engaged in practice. He says, for instance,

> "There are indeed times when it is dangerous to stop
> and think. On the firing line, in the midst of
> traffic, even on the playing field, there is a need
> for immediate, on-line response, and the failure to
> deliver it can have serious consequences. But not all
> practice situations are of this sort. The action-
> present (the period of time in which we remain in the
> "same situation") varies greatly from case to case,
> and in many cases there is time to think what we are
> doing. Consider, for example, a physician's manage-
> ment of a patient's disease, a lawyer's preparation
> of a brief, a teacher's handling of a difficult
> student. In processes such as these, which may
> extend over weeks, months or years, fast-moving
> episodes are punctuated by intervals which
> provide opportunity for reflection" (p.278).

While it is clear that the physician, lawyer and teacher
described here would be reflecting on their practice as they
pondered problems of disease, briefs and difficult students,
it is not clear that such reflection is occurring
in action. Obviously a definition of 'action' is needed, and
it is in Schon's definition that disputes over the rightness
of his claims could arise. Schön says that "A practitioner's

reflection-in-action may not be very rapid. It is bounded by the "action-present", the zone of time in which action can still make a difference to the situation. The action-present may stretch over minutes, hours, days or even weeks or months, depending on the pace of activity and the situational boundaries that are characteristic of the practice" (p.62). Reflection on action, for Schön, would not occur in the "action-present", but after the fact, when action can no longer make a difference to the situation. This definition is unclear in several respects. Imagining Schön's example of a teacher working over a period of time (a whole school year would not be unreasonable) with a difficult student, there would be incidents or days on which the teacher would reflect after the fact, when she could no longer make a difference in that the incident or the day is over. Her relationship with the student is ongoing, though, so she can still make a difference in terms of the larger picture. In Schön's sense this is still the "action-present". But reflecting at home on a Saturday night over a cup of tea, or even in conversation with a fellow teacher after school on the same day as a difficult incident has occurred does not seem like reflecting in action, because the action in which the teacher interacted with the student is over. Reflecting on action seems a more appropriate term. As regards still being able to make a difference, a teacher could reflect on her relationshilp with one student after that relationship has ended,

benefitting from this reflection so that she can make a difference with another student who may have similar problems. The "action-present" is rather nebulous, and a better definition of 'action' is needed.

It might seem from the preceding discussion that interacting with clients is the only time when a practitioner is really 'practising'. Of course this is not so; professional practice entails many activities and many phases, some more 'active' than others. But reflection engaged in during quiet moments over a period of days, weeks or months when a problem or case is being dealt with does not seem to earn the title "reflection-in-action". 'Action' seems to mean times when one is 'in the thick of things'.

Schön describes what seems like a rather different activity which occurs when people are "in the thick of things" and take a momentary 'time out' to reflect on a problem at hand. For instance, "In the split-second exchanges of a game of tennis, a skilled player learns to give himself a moment to plan the next shot. His game is the better for this momentary hesitation, so long as he gauges the time available for reflection correctly and integrates his reflection into the smooth flow of action" (p.279). This might more reasonably be called "reflection-in-action". reflection still requires a 'time out', however, albeit a brief one, and it differs from, say, brief desperate or panicky thought that one might also engage in. Reflection,

it has been claimed here, is done dispassionately, and the
tennis player, if he is reflecting, is doing so cooly.

Schön also speaks of times when "reflection
incongruent with a present course of action may be
maintained through double vision. Double vision does not
require us to stop and think, but the capacity to keep
alive, in the midst of action, a multiplicity of views of
the situation" (p.281). Such "double vision" undoubtedly
does exist, but it is questionable whether it can
legitimately be called reflection. It might be possible to
view the routinization of many of a teacher's tasks in light
of this idea of double vision. As a teacher goes about
calling the roll, checking homework and doing other fairly
routine tasks, his or her mind may be free to engage in
other thoughts about what is going on in the classroom. When
one is engaged in very demanding mental activity, though,
the idea of double vision seems less plausible. It would be
difficult to maintain two concurrent demanding lines of
thought without losing the thrust of one or both.

Deliberation, which has been identified as a
necessary prerequisite of decision, is related to
reflection. They both involve 'thoughtful thinking', both
require a 'time out' from the action, and both are directed
toward the resolution of doubts or problems. The difference
lies in deliberation being more focused on a specific
problem, more deliberate, one might say, and less free
ranging than reflection can be. Dewey (1932) says that

"reflection when directed to practical matters, to determination of what to do, is called deliberation" (p.134).

While some of Schön's examples of "reflection-in-action" do not seem truly to involve reflection, and others which do involve reflection do not seem truly to involve action, or 'the thick of things', we must, if we allow that teachers can decide (and thus deliberate) in action, allow also that they can reflect in action. This is a grudging admission, made on logical terms and not on the strength of Schön's arguments. Deliberation leading to decision is probably a better term for the thinking that is done in brief 'times out' from action, because it is usually directed to the solution of immediate practical problems. The reflecting which Schön describes doctors, lawyers and teachers as doing over days, weeks and months as they work with a client is not, it is submitted here, reflection <u>in action</u>, but it is quite compatible with the idea of reflection on practice discussed in this dissertation.

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