TEACHERS' KNOWLEDGE OF STUDENTS: A SIGNIFICANT DOMAIN OF PRACTICAL KNOWLEDGE?

P. Marland  
University of Southern Queensland

Introduction

In the last decade, attempts have been made to define a professional knowledge base for the teaching profession by documenting the practical know-how of highly effective teachers. This know-how, also referred to as craft knowledge (Brown and McIntyre, 1988), implicit theory (Clark and Peterson, 1986) and practical knowledge (Sanders and McCutcheon, 1986), is highly prized, because it is seen as the root source of effective practice. Practical knowledge is acquired, tested and refined through experience in the classroom. It is therefore the product of experiential learning and resides in the minds of teachers. Getting highly effective teachers to disclose their practical know-how is seen, therefore, as making a significant contribution to the construction of a valid and potent professional knowledge base.

One of the problems encountered in studies of teachers' practical know-how has to do with identifying the different domains of this form of knowledge. This problem arises, in part, from the implicit nature of much of the practical knowledge held by teachers and the difficulties teachers have in articulating it. Few attempts to chart the full extent of teachers' practical knowledge have been made. One such map was proposed by Elbaz (1983). On the basis of her in-depth study of one secondary teacher, Elbaz proposed five content categories of practical knowledge - knowledge of curriculum, knowledge of milieu, knowledge of instruction, knowledge of subject matter and knowledge of self. A similar set of categories of teacher knowledge was proposed by Shulman (1987), but with one notable difference. Shulman's list included 'pedagogical content knowledge' which he defined as 'that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding' (p. 8).

Research interest in the various domains of practical knowledge has been quite variable. Some domains, for example, the pedagogical content knowledge domain, have been the focus of considerable research activity; other domains have attracted very little interest. One such domain is teachers' knowledge of students which, as Kagan and Tippins (1991) point out, "... has not been an area of educational research per se ..." (p. 455).
The reasons for this neglect are not immediately apparent. The lack of research interest in what teachers know about students, and their use of that knowledge in the classroom, stands in sharp contrast to conventional wisdom, as revealed in classroom practice and staffroom talk among teachers. According to teachers, they invest considerable time and energy in accumulating information about students. Some of this information is entered in student record cards which are maintained for a variety of reasons including use by teachers, but discussions with teachers reveal that their knowledge of students extends well beyond what is placed in official school records. They also have extensive mental inventories of information about individual students. Moreover, it is clear that they value this knowledge highly and take deliberate steps to acquire it because, in the words of one teacher, "... if you don't know your students, you can't teach them".

There is some research which supports the hearsay evidence from teachers, outlined above, about the importance of having an in-depth knowledge of students. This research provides some clues about the kinds of student information that teachers acquire and how they use it, but gives no indication of the sources and the methods they use for gathering it and checking on its reliability. A number of studies confirm that teachers do indeed assemble data about the students they teach (Marland, 1977; Marland and Osborne, 1990; Kagan and Tippins, 1991). Research also indicates that the data gathered by teachers on students is quite diverse. Connell (1985) found the following four categories of student data in the transcripts of semi-structured interviews he conducted with secondary teachers in Australia: academic achievement, motivation, disruption and individual temperament. A more extensive set of categories was reported by Kagan and Tippins (1991). The student profiles, provided by both primary and secondary student teachers in their American study, contained references to physical appearance, motor skills, academic achievement, classroom behaviours, social interaction with peers, academic motivation, personality variables, family life and favourite activities. These categories closely parallel...
those reported in a study involving one secondary teacher of English (Marland and Osborne, 1990). Berliner (1988) claims that expert teachers also have a fund of knowledge about the ways students think. There is, however, some evidence that such extensive sets of data are not held by teachers on all students. Teachers appear to have more knowledge about some students than others (Jackson, Silberman and Wolfson, 1969).

In relation to the second issue - why teachers bother to accumulate knowledge of students - a number of reasons can be gleaned from the research on teacher expectations and teacher thinking. This research indicates that teachers' knowledge of students serves some quite significant purposes.

First, teachers use their knowledge of students' prior academic success, family background and personality traits to form expectations of students. These expectations are then used by teachers to set realistic educational goals, plan appropriate learning activities and cater for individual needs in the classroom (Brophy and Good, 1974).

Second, teachers use their knowledge of students to personalize their reactions to individual students (Marland, 1986). In other words, the interactions between a teacher and individual students are often tailor-made to suit the personal needs and situations, as perceived by the teacher, of students. They know the students with fragile egos or low self-concepts, the students who are easily distracted, who come from deprived backgrounds or lack concentration and so on. This knowledge is reflected in the tactics they use with these students. A similar finding was reported by Anning (1988) who, in an English study involving six primary teachers, used a stimulated recall technique to investigate their interactive thinking:

"The teachers' statements about the particular strategies they use in relation to individual learners demonstrated that they were consistently aware of pupils' personal situations and likely emotional responses and the assumption is that this awareness had a significant effect on the types of strategies the teachers used" (p. 138).

Third, teachers use their knowledge of students to make sense of and assess events in the classroom (Doyle, 1977; Carter, Cushing, Sabers, Stein and Berliner, 1988) and to predict student
responses and lesson pathways (Housner and Griffey, 1985). For example, teachers claim that they know: the signs in particular students that signal frustration and off-taskness or that disruptive behaviour is looming; which students are likely to have difficulties with certain academic tasks; and how individual students are likely to react to a challenge, a rebuke or a question. In other words, knowledge of students provides teachers with a basis for assessing students' cognitive and affective states and for anticipating behavioural and academic problems. According to Berliner (1986; 1988), these interpretive and anticipatory skills form part of the cognitive repertoire of the expert teacher.

Fourth, it seems likely that teachers use their knowledge of individual students at a particular grade level to form a picture or image of the class as a whole. Calderhead (1983) reported that experienced teachers often had a sense of what a class would be like even before they met them. This knowledge, Berliner (1986) suggests, "... is a knowledge that influences the running of the classroom: the pace, the level of intellectuality, affect, work orientation, and so forth. It is knowledge that influences classroom organization and management and is the basis for transforming subject matter " (p. 10).

The research reviewed above, though not extensive in scope, does appear to support the anecdotal evidence from teachers about the importance of teachers having an in-depth knowledge of the students they teach. A research team at the University of Southern Queensland was sufficiently persuaded by the strength of this evidence to commit time and effort to investigating the nature, sources and uses of teachers' knowledge of students.

Aims of the Study

A small-scale, exploratory study was planned, aimed at documenting the knowledge of students held by a small number of highly effective teachers. In addition, the project aimed at identifying the ways in which these teachers acquired this knowledge and used it during classroom instruction.

Methodology

Procedures for the Identification of Highly Effective Teachers

The first task confronting the research team was the identification of highly effective teachers. The team took the view that this was a crucial phase in the project since little value would be attached to the findings of this study if it
involved teachers other than those widely regarded as highly effective. This task was seen to involve finding criteria for establishing which teachers are highly effective and the processes by which those criteria could be applied. Criteria were developed by reference to the research literature on effective teaching and were then refined following discussions with practising teachers and teacher educators. These colleagues were asked to comment critically on the criteria at various stages in their development. A form was developed which included criteria focussing on the teachers' abilities to promote high levels of academic achievement, to use effectively a range of teaching strategies and to engender a convivial and challenging classroom atmosphere through establishing warm and productive teacher-student relationships and appropriate management procedures. Items relating to the teachers' status as a classroom teacher among parents and professional consultants familiar with the teachers' classroom performance were also included. These forms were developed for use by administrative teams in schools (principal and assistant principals), the intention being that each member of an administrative team in a school would independently identify those teachers whom he or she regarded as being highly effective and would then rate the teachers as outstanding, good or average on each of the criteria. The rationale for including 'good' and 'average' ratings was that the team considered that it would be unrealistic to expect even highly effective teachers to be given a rating of 'outstanding' on all criteria.

When the final version of the form was produced, four large schools in a major provincial city were identified as possible research sites. These schools were selected because they were regarded as ones in which members of the administrative teams had detailed, personal knowledge of teachers' effectiveness levels through frequent in-class observations of, and cooperative classroom work with, teachers. Principals in each of these schools were approached and their approval sought to conduct the research in their schools. In three schools where such approval was forthcoming, staff meetings were held to apprise teachers of the nature of the study. Teachers were advised that their right not to be involved in the project would be respected.

Once entry to schools had been negotiated, members of the administrative team in each school were asked to independently nominate those teachers they considered highly effective, rate each of their nominees on the criteria and submit the forms to a member of the research team. The rationale for this procedure was that it would clearly indicate those teachers about whom there was some consensus among administrative team members as to their
effectiveness as teachers. Nominees, of which there were eleven, were then ranked by the research team on the basis of these reports and subsequently placed in one of three groups - lower primary, middle primary and upper primary - on the basis of their current teaching responsibilities. A personal approach was made to the two with the highest rankings in each of the three groups to invite them to participate in the project. Of the six teachers so approached, only one declined to participate and this was because of a prolonged absence from the classroom during the data-collection phase.

Data Gathering Techniques

A joint meeting of the five participating teachers and the research team was held at which the aims, methodology and ethics of the research project were discussed. The teachers agreed to a series of three or four half-hour interviews at which they would be asked to disclose their knowledge and perceptions of the class as a whole and of students in groups as defined by the teacher. Teachers would also be asked to indicate the knowledge they held on three or four individual learners chosen collaboratively by the teacher and the research team member assigned to that teacher. During this series of interviews, teachers would also be asked to indicate how they acquired their knowledge about students and how they used this information in classroom interaction. This phase of the project was to be followed by a second series of up to two half-hour interviews in which the teacher would be shown video-tapes of lessons they had taught and asked to disclose other ways in which they used their knowledge of students during those lessons. It was anticipated that seeing specific classroom events might stimulate teacher recall of ways in which they used their knowledge of students not revealed in the first series of interviews.

The type of interview considered appropriate to the goals of this project was an in-depth, unstructured one. The approach adopted drew heavily on principles and techniques used in stimulated recall interviewing (Marland, 1984; Marland, Patching and Putt, 1991; 1992) in which the interviewee is seen as the expert and the interviewer is cast in the role of a facilitator whose main task is to assist the expert recall the sought-after, tacit knowledge. In many respects, the role of the interviewer is similar to that of a client-centred counsellor, with the emphasis very much on active listening, reflecting, seeking clarification and extension through non-leading probes and recursive questioning and avoiding being judgmental. Grand-tour and mini-
tour questions, as recommended by Spradley (1979) for ethnographic interviewing, were also used in the conduct of interviews for this project. Mini-tour questions were used to traverse, from different perspectives, a topic opened up in an interviewee's response to a grand-tour question such as 'What can you tell me about the class?'.

Detailed interviewer role prescriptions, based on the above conceptualization, were established and interview procedures demonstrated. Members of the research team conducted practice interviews. These were audiotaped and critiqued at meetings of the research team. Training sessions were discontinued when team members demonstrated that they could confidently enact the role of interviewer.

Interviews were conducted in accordance with the above requirements in the last term of the 1992 school year. This meant that teachers' contact time with their classes had extended over at least eight months of schooling. All interviews were audiotaped for later transcription.

Data Analysis

At the time of writing, the analysis of interview transcripts has not been completed. A preliminary analysis has been made of the full set of data from one teacher but procedures used in this analysis have yet to be refined for use with the wider sample. It is anticipated that these protocol analysis procedures will need to revised and modified when applied to the sets of verbal data from other teachers. Consequently, these procedures will not be reported at this time. The findings of the preliminary analysis of interview protocols of one teacher are outlined below.

Results of Preliminary Analysis

Case Study 1: Claire (a pseudonym)

Claire teaches in a large urban school. She has been a teacher for 22 years and is committed to a multi-age philosophy. She has a multi-grade class of 22 children - 10 girls and 12 boys - whose ages span those of children who, in a graded school, would be in Years 1, 2 and 3.

Claire favours an approach to teaching which imposes as little structure on educational programs as possible. In her classroom, students are given many opportunities for autonomous decision-
making. To function effectively in her classroom, students need to be self-reliant and independent. Claire promotes the development of these qualities by negotiating work contracts with students and setting "... independent work which allows them to do things at their own rate - that's the thing I feel they appreciate most". She allows them to "... learn by their mistakes" and "tries not to be always there, guarding all the time". She also sets up class captains and uses peer tutoring to promote leadership skills and a sense of responsibility.

Claire recognizes the problems that students encounter when coming to her classroom from classrooms with more structured programs. She recalled that, when students entered her classroom for the first time at the start of the year, they "... found difficulty when given the freedom to choose when they did things, to do things that not everyone else around them was doing". As well as valuing independence, Claire also values interdependence and cooperative learning and attaches considerable importance to the class having a cohesive spirit. For this reason, Claire "... spend(s) a lot of time on their social development". This includes human relations education and providing activities to develop their self-confidence, self-esteem and group interaction and management skills.

Claire asserts that "... when you're teaching ... you have to be a social worker". This view of herself as a teacher is clearly reflected in the kinds of information she gathers about students and, to some extent also, in the ways in which she gathers that information. She maintains close contact with parents in a variety of ways and keeps close tabs on the social, emotional and psychological welfare of her students. She claims that "you have to have those insights into the lives of the individuals if you're going to have the group (i.e. class), as a whole, work in the best possible way with the least possible strife". Furthermore, in her daily interactions with students, she is alert for any out-of-character behaviour that indicates that a child is unhappy, disturbed, becoming anti-social, or lacking in confidence and self-esteem. If these matters are attended to, "

Knowledge of Class and Groups

Transcripts of interview segments relating to Claire's knowledge of the class were analysed to identify discrete items of information. These were then grouped into a number of categories. A similar approach was used in the analysis of those interview segments in which Claire identified various groups of students and outlined her knowledge of those groups. Categories of student group knowledge were similar, in many respects, to those for class knowledge. The appropriateness of these categories has been discussed with Claire who has attested to their validity.
An integrated summary of the two sets of knowledge have been provided below in Table 1.

Table 1
Claire's Knowledge of the Class and Student Groups

Previous Schooling

Class
. Came from nine different previous class settings (school, pre-school, kindergarten)
. Many came from classrooms with highly structured programs; they had trouble adjusting to the freedom in this classroom; their ability to concentrate was affected.
  
  Group
  . Nil

Interests

Class
. Love drama, being on display, doing things for an audience
  
  Group
  . Enjoy soccer (Boys)
  . Engineering, nature, dinosaurs (Individual interests of Year 1 boys)
  . Make wonderful inventions; have quite advanced knowledge of scientific things (Group of 3 boys)

Abilities

Class
. More able
. Talented in a range of specific areas
. Very creative, inventive
. Learn easily
  
  Group
  . Write interesting stories (Group of 3 boys)
  . Good readers, write reasonably well, diligent (Group of 2 girls)
  . Brighter, ready to read, ready to do all the academic things (Year 1 boys)
  . Passive, more diligent than boys (Year 1 girls)

Personalities
Class
. Nil

Group
. Some with very strong personalities - jockeyed for leadership positions; don't take too kindly to being directed; engaged in personal battles outside the classroom; had to renegotiate their friendships (Group not defined)
. Shy, reserved, but all doing well academically; one distressed by lack of friends (Group of 3 girls)

Work Habits

Class
. Get work finished quickly

Group
. Very diligent - work extremely hard on contract tasks; work is done really well (Group of 6 girls in Years 1, 2 and 3)
. Work well together, good friends (Group of 2 girls)
. Lack good work habits; not particularly interested in the mainstream things that teachers and schools require of them (Group of 3 boys in Years 2 and 3)

Attributes

Class
. Confidence in dramatic activities, making presentations
. Sense of humour
. Less independent than country children
. More experienced, articulate, knowledgeable than country children
. Intolerant - though intolerance has diminished
. Independent - respond well to contract work; prefer right to choose; critical of ideas of others and are prepared to argue

Group
. Quiet and diligent (Group of 2 girls)
. Very caring, very accepting, very supportive of one another (Two stable groups - at start of year)
. Showing signs of 'pussy cat' teenage behaviour, have managing skills, have leadership skills, not always altruistic - allow their own interests to dominate, display fluctuating levels of maturity (Group of 3 Year 3 girls)
Playground Behaviours

Class
  . Nil

Group
  . Play together; beginning to join Year 2s for play (Group of Year 1 children) (N.B. To Claire, this means they're growing out of their babyhood and out of their more ego-centric stage.)

Knowledge of Individual Students

Three students were selected as the focus of interview segments in which Claire disclosed her knowledge of individual students. This trio included two boys and one girl and was drawn from the three year levels in the class. One of the male students came from what Claire described as a 'disrupted' family, one in which stress levels were high because of some combination of marital problems, lack of parenting skills, low income, medical problems and a large number of children. The knowledge she revealed about each of these children was quite extensive and, of course, personalized. Table 2 shows the types of knowledge disclosed by Claire about the trio. This overview lacks the depth and richness of material on the students in the actual interviews but it has been presented in this form for the sake of brevity. Once again, the types of knowledge have been placed in categories which have been endorsed by Claire. The number after each type of knowledge indicates whether the knowledge was preferred in respect of one, two or all three students. It should be noted that all the information provided by Claire on each student was recalled from memory. At no stage in any of the interviews was any reference made to notes or records of any kind. Another point worth noting was the ease and fluency with which the information on students was recalled. It was 'finger tip' knowledge which literally poured out in response to two basic questions: 'What can you tell me about (student's name),response' and 'Can you tell me anything else about (student's name)'. 
Table 2

Claire's Knowledge of Individual Students

Category
Sub-categories

Family Background
Place in family (3); Occupations - of father (3), of mother (3); strength of academic background (1); attitude of parents to - homework (1), child (1), educational achievement (1), school (2); siblings (2); level of parental attentiveness to child (1)

Previous Schooling*
school, pre-school, kindergarten previously attended (3)

Abilities*
Intelligence (2); level of independence (2); mathematical ability(2); reading ability (2); organizing ability (1)

Personality Variables*
forthrightness (1); timidity (1); reliability  (2); confidence (2); ability to relate to younger students (1); passivity (1); tendency to panic (1); cooperativeness (1)

Work Habits, Attitudes*
Work orientation (2); response to intellectual challenge (2); completion of homework (1); achievement orientation (2); restricts talk to important matters (1); group work skills (3); productivity (1); conscientiousness (1); ability to concentrate (1)

Playground Behaviour*
friendships (1); relationships to others (1)

Peer Relationships
domination by others (2)

* Categories marked with a * also appeared in Table 1 dealing with Claire's knowledge of the class and groups within the class.

Student Knowledge: Sources and Means of Acquisition

Analysis of the transcripts revealed that Claire drew her knowledge of the class and groups and individuals within it from
four main sources - parents, school records, classroom observation and interaction and reports from professionals in other fields. It would appear that parents and her own classroom observations and interactions with students were the more significant sources in terms of volume at least. Interview data also indicate that Claire's knowledge of students and the class was not presented to her but was gained as a result of her actively seeking out that knowledge, a process which commenced even before she had met her new class and continued throughout the year. A small part of the knowledge of students that she acquired was ready-made, usually in the form of reports from counsellors, paediatricians, psychologists and guidance officers, or school records, but the majority of the information had to be assembled by her.

The means by which Claire acquired knowledge of her students and class were many and varied. She reported that, in the pupil-free days before the start of the school year, she consulted school records to obtain admission data on children in respect of parent occupations, number of siblings and their place (first born, youngest, etc) in their respective families. Such information, Claire claimed, provided her with an indication of what might be the parents' attitudes to the education of their children and their likely contribution and commitment to the 'home reading' program she instituted and supervision of homework. In Claire's view, knowledge of how many older and younger siblings a child had provided a basis for understanding his or her behaviour. Claire identified certain behaviour patterns as being typical of first-born children, children in one-child families, the youngest in large families and so on. Knowing children's places in their families therefore provided clues to understanding their behaviour. One illustration of this centred on a girl in Year 1 who did not appear to Claire to be 'daunted by older children' as some of the younger children are in a multi-age classroom. Claire attributed this to her having two older sisters. A second illustration of how Claire used information on the family background concerns a Year 3 boy, the first-born in a large family. A particular medical problem with the last-born caused considerable stress and disruption to the family routine. These circumstances indicated to Claire why the boy tended to avoid work and was a satisficer, that is, met minimal requirements only in school work. Such behaviours were typical of children from disrupted families, necessitating frequent monitoring and regular contacts in the classroom to check on the amount of work covered and their learning progress.

Claire also claimed an intuitive basis for some of her knowledge of students. " (I have a) very strong intuition about what's
going on in children.... based upon a lot of my own experiences language as lack of eye contact with the teacher, uncharacteristic naughtiness, unkindness to other children and excessively passive behaviour indicate to Claire that there's something wrong. A judgment of this sort prompts Claire to " ask their parents - parents are really welcome here ... (or to) write a note and ask to see them".

Informal contacts with parents when they bring their students to school provides a third means of gathering useful knowledge. On these occasions, parent talk provides a very important source of knowledge about what's happening in the family that affects the child. According to Claire, " ... it's the informal talk ... that's really the important talk". She cited as helpful, for understanding children's in-class behaviour, information on the mother's state of health, changes to the family situation such as the arrival of a visitor, and difficulties in parent-child relationships.

Claire anticipates that similar information will be revealed at parent interviews, held at the end of the first semester, and at parent-teacher meetings." ... It's quite amazing the things the parents end up telling you about themselves that explain the child ". In fact, at the first parent-teacher meeting of the year, she makes " ... it very clear that if there's some kind of changes going on in the family, like mum going to hospital or grandma coming to stay, they really should come and tell me because it does make a difference in the way that child is reacting". As has been made clear by Claire, understanding the child is the key to effective teaching of that child. Moreover, unhappiness in a child or some kind of maladjustment or upset in the pattern of that child's life impedes learning, so finding out about those problems and attempting to put them right, processes which involve a form of 'social work', are, in Claire's view, a teacher's responsibilities.

Three other in-class strategies instituted by Claire provide her with opportunities to gather the kind of student knowledge she needs. These strategies usually serve dual purposes, one of which is to keep tabs on the cognitive and affective states of students. She conducts 'reading checks' before school with individual students, particularly those from disrupted families, to ensure that the tasks she assigns as part of the 'reading at home' program, which is under parent supervision, are completed. " I insist that the Year Ones come and read to me what they've been reading the night before. It's a time for a private talk too (when) they can tell you things that they really feel they need to". In addition, Claire holds 'private conferences' on a regular
basis. With these strategies, she contrives to create situations when students can volunteer information about themselves and their concerns, when they can "... feel free to tell me when things don't quite satisfy their demands (and) the things they would like to be doing ". The third strategy is the 'group talk' strategy described by Claire in these words: "I sit with a group of children and we discuss things that are going wrong socially in the classroom. ... They provide information about people's behaviour, things that people are doing (and) things that are upsetting people".

Reference was also made by Claire to 'visiting the home' as a useful way of getting "... a much more firm picture of the person you're dealing with ".

Classroom Use of Knowledge about Students

As Claire revealed her knowledge about the class, groups and individual students during the series of interviews, she was asked to indicate what use, if any, she made of that knowledge during lessons. Her answers appear in abbreviated note form in Table 3. Here the data have been re-organized so that all references throughout the four interviews with Claire as to how she claims she uses a particular category of knowledge have been coalesced.

Table 3
Claire's Use of Knowledge of Students during Classroom Instruction

<table>
<thead>
<tr>
<th>Type of Knowledge</th>
<th>Uses: Knowledge used to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work habits</td>
<td>- diligence</td>
</tr>
<tr>
<td></td>
<td>Help determine which students have to be checked on - diligent students don't have to be checked on so much. Involve diligent students in classroom organization. Recruit them as peer tutors. Involve them in preparing the next lot of activities.</td>
</tr>
<tr>
<td>Peer Relationships</td>
<td>- friendships</td>
</tr>
</tbody>
</table>
If friendships interfere with productive work teacher can - (i) change membership of groups; (ii) change where they sit until such time as they have settled back to working; (iii) place disruptive boys in different groups based on random assignment or where they have been seated. Form work-groups of students they normally wouldn't be friends with to increase tolerance of students for each other.

Abilities
   - variations
Adjust expectations about achievement rates.
Treat different ability groups differentially to ensure fairness.
   - mathematically
    
    gifted
Provide challenge.
   - more able
Set up a day long meeting with high school class in Science and a Year 7 class in modern language.
Discuss advanced topics.
Provide lots of variety.
Provide enrichment materials.
Stimulate them.
Provide access to reading material that's way beyond what would normally be appropriate for children at this level.

   - organizing ability
    (+ good work skills)
Use as leaders.
   - group work skills
Place cooperative student in groups with an aggravating or domineering student.

Family Background
Assess academic background of family.
   - disrupted family
Adjust expectations for children from such a family.
Make allowances and do not push the child.
Assists in determinations about what background information (general knowledge) to provide.
Increase number of non-fiction books to be read to class.
Hear students read.
Check that they do what they have to do; require them to show completed homework.
Maintain regular contact with mothers.
Keep an eye on them; ensure that they achieve a certain amount of work each day.
Make sure they actually do achieve without nagging them.
Challenge them with - ' Is this the best you can do?'
Previous Schooling
Expect them to be at different levels.
Allows you to interpret and understand the behaviour of those coming from classrooms with highly structured programs.

Interests
When working thematically, ensure that their interests have been catered for.
Ask them to give information to the rest of the class on their interests.
Provide opportunities for them to show off things that they make.

Playground Behaviours
Allows assessment of their emotional development.

Personality
Helps decide whether you have to check on them/ their work constantly.

- strong personalities
Teach them to have regard for feelings of others.
Give them a say in developing classroom activities (e.g. rearranging the time-table).
Avoid mollycoddling them.

- independence
Assess level of independence and use to determine emphasis on social development in class activities.
Promote independence by - (i) providing activities which allow them to do things at their own rate; (ii) let them learn by their own mistakes; (iii) creating class captains; (iv) avoiding being there to guard them all the time.

- difficult to get along with
Give them more attention.
Give them more responsibility without denying others the opportunity for assuming responsibilities.
Avoid nagging them about their behaviour.
Bring children into your own life by - (i) talking about your own personal life; (ii) showing photos of your own family; (iii) relating incidents about your own children to make them feel that they are not strange and peculiar (children don't like to feel that they are different).
Identify your own human-ness for the children.
The second source of information about how Claire used her knowledge of students during classroom instruction came from the two, half-hour interviews each based on a videotape of a lesson taught by Claire. In these two interviews, Claire was asked to stop the videotape at points in the lesson where she used her knowledge of the class, groups of students or individual students and to report how she used that knowledge. This technique appeared to be quite a valuable one, partly because the video records of lessons provided specific examples of in-class behaviours and events as discussion foci and also appeared to stimulate Claire's recall of how she used her knowledge of students. The potential of this technique was not fully realized on this occasion because of the brevity of the interviews and the amount of time taken up by video replay. This meant that opportunities to investigate Claire's interactive use of her knowledge of students were quite limited. However, the data from these two interviews revealed again that Claire's clinical knowledge of students influenced her interactions with individual students (see Table 4) and also provided confirmation of some of the uses declared by Claire in Table 3. In many instances, the rationale for reacting to a student in a particular way included references to beliefs, principles, tactics and other components of Claire's practical theory of teaching, as well as knowledge about the student. These references appear in italics in Table 4 below.

Table 4

Further Examples of Claire's Use of Knowledge of Students

<table>
<thead>
<tr>
<th>Student1</th>
<th>Context/Action/Tactic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitchell</td>
<td>Directed a question to him during class discussion. * Has good thinking skills</td>
</tr>
<tr>
<td></td>
<td>* Is quiet - can't ignore the quiet</td>
</tr>
</tbody>
</table>
ones
* Has considerable knowledge
(You need to be aware of him and direct questions to him.)

Pearce
Has hearing loss
Students in Pearce's group complained
of his lack of contributions to group discussion. Explanation offered by Claire to group.

Jay
good thinking skills
During teacher-class discussion, * Has
Claire challenged him to think more deeply. * He won't volunteer - you have to ask him
(You need to be aware of him at present; he is being disruptive lately because of an internal need to be on show and this is affecting his task orientation.)

Coral
Very vulnerable
Student volunteered a piece of * information. Claire reacted with praise - gave her credit for what she knew.
* Youngest in family
* Needs careful handling - ego is fragile
(You have to be careful that you don't put her down.)

Charles
* Has great interest in nature
Claire asked him a question about bees while reading story.

Jack
* Quiet
Following his contribution to group, Claire praised him * Poor self-esteem
( I want children to feel better about themselves - to realize their worth. The higher their self-esteem, the more willing they are to be
risk-takers, the more they will learn. He is entitled to the approbation of the group when he comes up with something distinctive and thoughtful.)

Gordon Claire separated him from friends and

* Is a dominant child
Would have everyone doing nothing

Pearce Claire heard and repeated his response to her question during class discussion low skill development and praise him. * Not as bright as others (Claire was surprised and pleased by his answer. It is good for him to get accolades for his answer. It showed good thinking.)

1. All student names are pseudonyms.

The data in Tables 3 and 4 indicate that Claire's knowledge of her students had a marked influence on her interactions with them during instruction. This knowledge, along with other components of her practical knowledge, such as beliefs, principles, routines and tactics, provided an important part of the rationale for the lesson tactics she employed. Claire's knowledge of students assisted her to promote the personal and social development of students and to create a social context in her classroom conducive to learning. One particularly noteworthy aspect of the data was the extent to which Claire's knowledge of students allowed her to personalize her reactions to, and treatment of, students. Her interactions with individual students were often tailor-made or customized on the basis of her personal knowledge of each one.

There is one caveat. Because the data on Claire's knowledge of students was drawn from post-lesson commentary on her teaching, it cannot be asserted that Claire actually called up and processed her knowledge of students during the lesson. No attempt was made to gain access in this study to Clare's
interactive, that is, in-lesson thinking.

Summary

The goal of this study was to document what highly effective primary teachers know about the students they teach and the ways in which they use such knowledge during classroom instruction. The rationale for the study stemmed from a conviction that knowledge of students is a vitally important component of the practical knowledge of highly effective teachers. A series of interviews was conducted with five teachers who had been identified by school personnel as highly effective. Criteria which had been collaboratively developed with classroom practitioners and teacher educators were used to identify the teachers who participated in the study.

A preliminary analysis of the interview data from one teacher (whose pseudonym is Claire) has been completed. This preliminary analysis indicates that knowledge of students was a key component of Claire's practical knowledge. She regarded it as critical to her being able to function effectively in the classroom. The study gives some indication of the nature of the schemata used by this highly effective teacher for gathering and interpreting information about students. The study also revealed that Claire used a wide variety of sources and techniques to acquire her knowledge of students and that these techniques were used regularly to monitor changes - social, psychological and behavioural - in students. Finally, the study documents the ways in which Claire used her knowledge of students to fulfil her professional responsibilities in the classroom. The reasons why Claire was so committed to getting to know her students are perhaps best summarized by the 'teacher as social worker' metaphor which she used to conceptualize her role in the classroom.

This case study also offers some pointers about the basis of Claire's teaching effectiveness. On the basis of the findings of this study, it does not seem unreasonable to suggest that her effectiveness might be accounted for, partly at least, in terms of -

1. the richness of her knowledge of students. The knowledge about her students divulged by Claire during the interviews was quite diverse. It ranged over nine categories. The information on students included knowledge of students in work settings and play settings; and as individuals and group members inside and outside the class. Information about students' families and educational backgrounds rounded out the profiles. The data bases on
individual students held by Claire were broad but they also had depth. Her character sketches of individuals were rich, sharply focussed, individualized and multi-dimensional.

2. the classroom relevance of her knowledge of students. Claire's knowledge of students was highly relevant to classroom learning and the personal and social development of students which she saw as contributing to sound learning. There was nothing in her student knowledge that appeared inconsequential or unnecessary. In her data-gathering, the principle of parsimony appeared to have been applied. Each category of student knowledge played a part in informing her teaching of groups, individuals and the class as a whole. In other words, the knowledge that Claire held about students enabled her to give full expression to her practical theory of teaching. In fact, there was a close correspondence between the statements she made about her approach to teaching and the kinds of knowledge she gathered about students.

3. the validity of her knowledge of students. Most of the information about students came from sources which Claire accessed directly. Her descriptions of individual students and groups were based on information which she had accumulated mainly through up-close contact with students and their parents. The mental profiles on students had been personally constructed, there being apparently no reliance at all on other teachers' perspectives on students. Rumours, innuendoes and other unreliable sources of knowledge played no part in the development of her student profiles.

The validity of her knowledge base was also probably a function of the wide variety of data-gathering strategies she employed. These enabled her to triangulate the data, that is, use evidence from one source to confirm or deny evidence from another. In this way, she would be able to cross-check the data and validate her perceptions of students. This could well explain also why descriptions of students were given with such confidence, with no trace of uncertainty or reservation. The suggestion that Claire's elaborate and valid sets of knowledge about students provided a vital basis for her effectiveness as a teacher appears quite plausible.

4. the integration of knowledge of students with other forms of practical knowledge. It would appear that Claire's knowledge of students was not held in isolation. There is some evidence to suggest that her student profiles contained tactical knowledge as
well as knowledge about students. That is, information on the interests, abilities, work habits, personalities, etc. of particular students was closely bound up with information about the best tactics to use when interacting with and teaching them.

At this stage these four propositions are very tentative ones; they are hypotheses which will be reviewed in the light of findings from the remaining four case studies. However, the results of this case study certainly lend weight to the claim that knowledge of students is a significant domain of teachers' practical knowledge.

References


Calderhead, J. Research into Teachers' and Student Teachers' Cognitions. Exploring the Nature of Classroom Teaching Practice. Paper presented to the annual meeting of the AERA, Montreal, 1983.


Clark, C. and Peterson, P. " Teachers' thought processes ", in Wittrock, M.C. (ed.) Handbook of Research on Teaching 3rd ed.,


Marland, P., Patching, W. and Putt, I. "Distance learners' interactions with text while studying", Distance Education, Vol. 11, No. 1, 1990, pp. 71 - 91.


Sanders, D. and McCutcheon, G. "The development of practical
