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WHAT CAN WE LEARN FROM " EXPERT " TEACHERS

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Introduction

The ways in which "expert" teachers think and behave have been the focus of a number of studies in the United States, Britain, and Australia in recent years. Most of these studies concentrated on the behaviours of "expert" mathematics and science teachers. The findings show that there are differences between expert and novice teachers' subject matter knowledge and pedagogic knowledge, and their organization and classroom management capacities (Berliner, 1986, Brandt, 1986, Carter et al.1987, Chi et al 1981, Fraser & Tobin 1989, Grossman 1989, Leinhardt & Greeno 1986, Leinhardt, Weidman & Hammond, 1987)). However, the findings are mainly records of observable instructional moves and classroom management techniques that maximise student learning. There are few references to teachers' cognition and self-reflections which include teachers' beliefs and knowledge about teaching, students, and content (Kagan, 1990). Studies on "expert" teachers which merely focus on behaviours and performance are not quite in keeping with the emerging image of the teacher as "thoughtful and reflective professionals", (Patterson, 1988). They are still very much using the rhetorics associated with the process-product research while professing to be examining the thought process of teachers.

In recent years, teacher education has emphasized the training of teachers to provide not only a service in nurturing and developing young lives, but also in reflective practice for the continual improvement of educational practice. There is, therefore, the need for researchers to study teachers' and students' cognitions in addition to teacher and student performance and achievement. Our research for "expert" teachers would necessarily involve probing into the teachers' beliefs and knowledge about teaching, students and content, and self-reflections about their own actions and that of the students' performance. Questions regarding why and how "expert" teachers make decisions regarding lesson planning, selection of instructional strategies, the pacing of lessons, and managing and evaluating students under diverse conditions are raised.

As to the knowledge base of effective teachers, it has been established that they have strong content, pedagogic and curricular knowledge (Shulman, 1986), or what are termed subject matter knowledge and knowledge of organization and classroom management (Berliner, 1986). Effective and experienced teachers act upon insights derived from the "wisdom of practice"

(Shulman, 1987) and they have special pedagogical ways of knowing the specific “ troubles, puzzles, and problems” that are associated with teaching and learning so that they can deal with them accordingly (Shulman, 1990). They use efficient routines to allow for effective instruction and classroom management (Berliner, 1986, Leinhart, Weidman and Hammond, 1987).

Based on the working “model” of Berliner’s “ Expert” teacher and Shulman’s conception of effective teachers’ knowledge base, lecturers from the Institute of Education (IE) Singapore have been inquiring into the cognition, decision making and judgment of “expert” chemistry, economics and literature teachers in addition to their knowledge-base and classroom performance (Chen 1990, Chen et al 1988,89; Ng 1990, Wong & Koh, 1990, Yeo 1990). As a result of two years’ of inquiry, a grounded theory of “expert” teaching derived from data gathered from both the etic and emic perspectives is being advanced.

Definition Terms

An “Expert” - is a teacher who is knowledgeable in one or two subjects and teaches the subject effectively. He/she should have at least 5 years of teaching experience.

Knowledge-base - denotes both the content knowledge (domain or subject specific) and strategic knowledge (knowledge about pedagogic and learning skills). In our study, strategic knowledge of the teacher is used interchangeably with pedagogic knowledge.

Performance - describes the ability of the teacher to translate and transform subject knowledge and skills into meaningful learning acts and teachable forms. This calls for not only knowledge of the content, the context, actual instruction, and evaluation of student understanding, but also the ability to communicate ideas, routinize instructional and learning acts and get results.

Thought and Judgment - the ability and habit of reflecting on teaching, students, content and new comprehensions arising out of the whole process, judging wisely on different strategies to be used and making appropriate decisions for different situations and contexts.

Research Design

The IE studies using a combination of clinical and naturalistic research methods inquired into the cognition and behaviours of 4 very effective and experienced chemistry, 4 economics and 4 English literature teachers in junior colleges. The observation of the teachers first interacting with unknown students in clinical situations, then in their own classrooms provide a wealth of information for diagnosis. In-depth interviews of the teachers immediately after their clinical or classroom teaching and a week to a month later after reviewing video playbacks engaged them in reflecting on their own cognition and perceptions about subject teaching and motivating learning: structuring or sequencing the content, lesson planning, selection of teaching strategies,

establishing rapport and classroom routines, and choice of evaluation methods and procedures.

To increase confirmability and credibility of the information collected about the teachers' performance and students' classroom behaviours and cognition, a special triangulation process was adopted (Lincoln and Guba, 1985). Through further interviews of the other participant observers in the context, i.e. the selectors, principals, peers and students and significant others, more data were obtained about their perceptions of the "expert" teachers. The students were interviewed immediately after the clinical lessons and normal classroom lessons (the first group was unknown to the "experts", the second group was their own students). From the interviews of the various groups of participant observers the data was confirmed.

Singapore "Expert" Teachers' Knowledge-base, Performance, and Judgment

Out of the 12 "expert" teachers studied, only 4 had capacities, expertise and moral responsibility that could be distinguished from the rest. These teachers may be called "experts" because of their more superior knowledge base: content knowledge, pedagogic knowledge and content pedagogic knowledge. They performed at a higher level in carrying out systematic instruction, in communicating ideas, in assessing student needs and abilities and in managing classroom routines and behaviours (Chen et al, Ng, Wong & Koh, Yeo, Ibid). Perhaps, the most significant factor was their consistent and sound judgment as well as commitment to the subject and students (Chen et al 1989, Ng, 1990, Wong & Koh 1990, Yeo 1990).

Regarding the content or subject matter knowledge of the "expert" teachers, it is interesting to note that all have at least Honours degrees in their subject areas and more than ten years of teaching experience.

Of the four chemistry teachers studied, only one teacher, Mrs T.S. Wong (a pseudonym) who has taught chemistry for 13 years appeared to approximate to the model of an "expert" teacher. She was found to be strong in content and pedagogic knowledge, was people-oriented, a good communicator and organizer. She also displayed good decision making skills and was dedicated to the subject and students.

Mrs Wong's deep concern for her students' understanding of her lessons showed up clearly during the lessons observed and the interviews conducted. Her students confirmed that she encouraged questioning and appreciated her explanations on difficult concepts by using suitable analogies, her pacing of lessons and her humour. Her colleagues also testified that her teaching was "good, practical and imaginative" and the students "benefit from her lessons". The selector from the Ministry of Education Curriculum Planning Branch, who had taught with Mrs Wong in the same school for five years, also remembered that she was "very skilful in terms of using analogies and even communicating with students through wit and humour and drama." (Wong &

Koh, 1990).

Only one economics teacher distinguished herself from the rest so that she could be called an “expert” economics teacher. Mrs. T’s knowledge and expertise was noted by her principal, colleagues and students. She attributed her content mastery to “a love for the subject” and to the many years she had spent teaching and updating her knowledge by reading and in discussions with practising bankers and economists. Mrs T’s pedagogical knowledge went beyond content mastery relating to the ‘teachability of it’s concepts’. Her expert knowledge in this aspect included the syllabus, key principles and concepts, sequencing, development and links between topics, and the A-level examination requirements. It also referred to practical knowledge of the classroom, students and the prepresentations which the teacher uses for explaining, eg. the examples, analogies and imagery which have been acquired through many years of teaching. She spoke of “a shift in her teaching concerns and classroom instruction” from the content to the problems of students’ understanding and misconceptions, from enabling the students to getting high grades to helping the students with problems. Her professional orientation was looked upon as a role model. All her colleagues and students spoke highly of her dedication, interest and commitment (Ng, 1990).

Two literature teachers qualified as “experts” because of their subject matter knowledge shown in their ability to teaching in any one of the major literary genres. They were also keen on acquiring new knowledge through formal education eg. acquiring higher qualifications. In the case of pedagogical knowledge, they had ‘automatised’ their classroom routines and used a variety of instructional strategies such as learning as discovery and teaching as guiding. As teachers of the Singapore education system which emphasized a great deal on examinations, they were extremely effective in helping students pass and do well in examinations but also to get more enjoyment from reading literature and better understanding of the subject. Students are taught to read critically and learn to cope with the complexities of living. Part of the coping is the immediate enjoyment that comes from reading literature; but beyond that is the concern to impart attitudes and skills that will be of use to them beyond the classroom (Yeo, 1990).

Like the chemistry and economic “expert” teachers, part of their success in teaching was their own personality and sense of commitment to the subject and the students. They were caring people outside the classroom and ready to assist their students in a variety of problmes of a pastoral nature.

Main Findings

“Expert” chemistry, economics and literature teachers appear to have capacities that are superior to effective experienced teachers in terms of content or subject matter knowledge and pedagogic knowledge. They performed at a high level in carrying out systematic instruction, communicating ideas and in assessing student needs and abilities. They are also characterised by sound

judgment and dedication to the subject and the students. Some tentative conclusions could be drawn from the study. Shulman's (1986) categories of teacher attributes that shape student behaviour and learning will be used capacities, actions and thoughts to organize the findings.

Capacities - are relatively stable and enduring characteristics of ability, propensity, knowledge, or character inhering in the actors, yet capable of change through either learning or development.

Actions- comprise the activities, performances or behaviours of actors, the observable physical or speech acts of teachers and students.

Thoughts - are the cognition, metacognition, emotions, purposes- the tacit mental and emotional states that precede, accompany and follow the observable actions, foreshadowing (or reflecting) changes in the more enduring capacities (both thoughts and behaviours can become capacities).

Lee Shulman (1986, p.7)

“Expert” Teachers’ Capacities

1. “Expert” teachers have specific knowledge base - content knowledge and pedagogic knowledge.
2. They are intelligent, enthusiastic and experienced teachers who love their subjects and are able to transform content knowledge into teachable forms, in terms of examples, analogies. principles, concepts and problems.
3. They are efficient learners themselves having the appropriate study method for different subjects and skills.
4. They always keep up- to- date in their content areas either through informal or formal learning situations.
5. They are people-oriented and understand their students.

Actions

1. “Expert” teachers engage in systematic instruction which involves meticulous planning over time regarding the assignments, examinations and curricular topics and methods, setting clear routines and expectations in instruction and classroom management and developing key concepts and skills.
2. “Experts” demonstrate the ability to assess accurately the requirements of a lesson, or course for a particular level and subject.
3. They are more precise and specific in selecting and communicating principles, concepts and tasks in a lesson.
4. “ Experts” have good communicative skills: Explain well, ask thought

provoking questions and use media effectively.

5. They are better able to pace lessons according to students' ability and available time.
6. They have 'automatised' their classroom routines and established excellent rapport with students.

Thoughts and Judgment

1. "Expert" teachers make sagacious judgments about the amount and type of material to be taught to specific groups and individual students.
2. They appear to be more perceptive and discerning re: needs, ability and problems of students.
3. They make good learning and instructional decisions.
4. They appear to be able to inspire students to attain better examination results.
5. They are dedicated to their jobs and show concern for their students beyond subject specific knowledge and skills.

Towards A Theory of "Expert" Teaching

From the Singapore studies, it would appear that "expert" teaching is more than superior cognition, capacities, actions and judgment. It is more than exemplary teaching in terms of their communicative abilities and pedagogical skills. The research findings suggest that "expert" teachers being human beings and not mechanical expert systems may differ somewhat in their actions and expertise, but all distinguished themselves in normative, situational and professional morality. They are knowledgeable of professional norms, standards and values according to what Oser terms normative morality. In their teaching and professional decision making in diverse situations, they appear to have developed a sensitive balance between knowledge, expertise, justice, care and commitment (Oser, 1989).

Being expert learners themselves, they are well-informed and have great capacity for reflection. As teachers, they assume responsibility to not only develop the students' minds but also to develop their characters and values. They made sagacious judgements that are fair, just and timely. As such, the "expert" teachers have totally integrated their knowledge and capacities with their actions and professional morality and commitment.

Conclusion

From our studies, they confirm our belief that training and teacher

education could improve the capacities, and performance/actions of teachers. This calls for better designed and delivered training programmes. The identification of specific content and pedagogic knowledge and routinization of instructional and management procedures should provide further information for the design and teaching of generic skills and specific content methodology to pre-service student teachers and potential heads of departments. The outstanding “expert” and the common characteristics of effective teaching could be used as models of training.

However, “expert” teachers ability to make wise judgment and good decisions about their teaching and the students’ learning appear to be more intuitive. Wisdom, sound judgment and good decision making can be identified among the very effective and experienced teachers but how did they acquire such qualities is not clear and the qualities are also difficult to measure. It would seem that these are qualities that cannot be taught but can be acquired in some measures through ‘deliberate reflection’ and positive response to experience of people in different situations.

As teachers develop as nurturing and reflective professionals, institutional recognition and support for staff development are crucial. All teachers, particularly good and experienced teachers, should be nurtured so that more can become “expert” teachers to provide instructional leadership, or what Berliner called “mental roadmaps” to the novice teachers and be an inspiration to members of the teaching profession.

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