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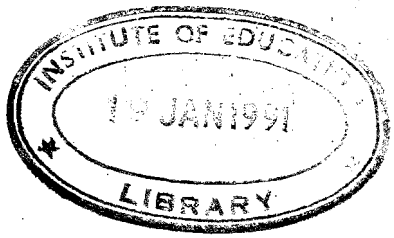

SPECIAL ISSUE

Selected Papers from the Second
Educational Research Association
Annual Conference

Institute of Education

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Guest Editorial

School-Focussed Research: Action Research and Other Perspectives

Ho Wah Kam

The nature of the orthodoxy in social science research methodology is best understood in terms of the world view that each position or approach exemplifies. It is therefore important to uncover the assumptions that characterise a particular world view, which was what Prof Stephen Kemmis and Dr John Izard did in their separate keynote addresses delivered at the Second Annual Conference of the Educational Research Association (4-5 September 1988) held at the Institute of Education under the general theme of School-Focussed Research for Educational Excellence.

The principal objective of the annual Conference was to provide a forum for researchers in Singapore to present and discuss their work. A special feature of the Conference programme last year was the provision of two *symposia*, one on School-Based Projects and Action Research, and the other on Teacher Professional Satisfaction. The first symposium, based on survey data collected from some 100 schools, provided an opportunity to assess the status of school projects and consider ways of strengthening the capacity of the schools to undertake those projects while the second symposium discussed the Singapore findings taken from a nine-country cross-cultural research project on teacher professional satisfaction and sources of teacher enthusiasm and discouragement.

The addresses by Prof Kemmis and Dr Izard are reproduced in this special issue which contains altogether eight of the 29 papers presented at the Conference. There are three papers on the cross-cultural project on teacher professional satisfaction, one each on student thinking and the characteristics of an effective mathematics teacher as perceived by teacher trainees, and the eighth paper is on pastoral care. Other papers not included in this issue, owing to space limitations, dealt with research in the areas of career development, teacher education, mathematics education and language education.

Since the theme of the Conference suggests that it is in the schools that much of the research should be sited (i.e. school-focussed), it was decided that this issue should draw readers' attention to the variety of research (in terms of both methods and content) that could be carried out in schools involving teachers and pupils and the opportunities for collaborative work in what is known as *action research*.

Action Research

Educational action research has developed into an important movement, assisted by a burgeoning interest in what is often referred to as qualitative research. Reportedly action research started in the United States (US) at about the time of the progressive education movement (in the 1930s); the development of such research (in the US) is often attributed to Kurt Lewin who in the 1940s was keen on the idea of using "field experiments" and collaborative effort to bring about social change in group or community settings. Interestingly enough, action research seems to have had its roots in an intellectual outlook that favoured a

"scientific" approach to problem-solving in a social context. In fact, McKernan (1988) claims that "careful study of the literature shows clearly that action research is a root derivative of the scientific method reaching back to the science-in-education movement of the late nineteenth century".

Although action research suffered a decline in the US in the 1950s, the idea itself spread to the United Kingdom (UK), where it was to make its impact felt through the work of the Tavistock Institute of Human Relations. Then action research was picked up as a strategy for teachers to improve their classroom practice. Lawrence Stenhouse and John Elliott, among others, were associated with this stage of the movement, and as a result the teacher-as-researcher model formed the basis of much work in school-based curriculum development as well as in the development of collaborative research in the UK. While the concept clearly encompasses the two elements of *research* and *action*, the term itself is defined rather differently by different researchers. While John Elliott published in 1978 the most extensive description of action research, it was Ebbutt (1985), also working in the UK setting, who provided a useful and concise definition of action research, which is "The systematic study of attempts to change and improve educational practice by groups of participants by means of their own practical actions and by means of their own reflection upon the effects of those actions". As the action research movement developed further and spread, it generated a substantial amount of what Elliott (1985) has called "second-order theoretical reflection" on several themes.

One of these themes (i.e. the place of action research in the relationship between educational theory and practice) was developed by Prof Kemmis in his address "Improving Schools and Teaching Through Educational Action Research". Recognising the importance of the sources of educational theory, Prof Kemmis (who has been closely associated with the development of action research in Australia) argued that the approach to educational theory must satisfy several conditions. For example, the approach should reject sole reliance on the positivist notions of rationality and objectivity, as implied in the empirical-analytic type of research. "Theorising" in education, according to Prof Kemmis, must take into account the concerns, values and interests of the practitioners (teachers), i.e. educational theory must be related to *practice*, rooted in the *self-understandings* of teachers. Teachers are expected to be (critically) *self-reflective* in order to fully understand and improve their own work. And so to avoid distortions in interpretation, Prof Kemmis suggested a *collaborative* approach to be undertaken by the teachers themselves. This discussion prepares us for Prof Kemmis's definition of action research, given in another of his recent papers, which is ". . . a form of self-reflective enquiry undertaken by participants in social (including educational) situations in order to improve the rationality and justice of (a) their own social or educational practices, (b) their understanding of these practices, and (c) the situations in which the practices are carried out. It is most rationally empowering when undertaken by participants collectively . . ." (1985). In brief, action research is that which is carried out by teachers themselves into their own practices, and is best done collectively; in many ways, action research works towards redefining the relationship between researcher and the researched, theory and practice. Prof Kemmis therefore saw in action research the development of an alternative research paradigm.

But is action research only good practice and reflexivity? Are there techniques which distinguish action research from other types of research? Prof Kemmis's answer, given in the 1985 paper, was: "What distinguishes action research is its method rather than particular techniques. The method is based on the notion of a spiral of self-reflection (a spiral of cycles of planning, acting, observing, and reflecting). It is essentially participatory in the sense that it involves participants in reflection on practices". Prof Kemmis then added: "While it is common for educational action researchers to keep focussed diaries about specific aspects of their practice, to make audiotape records of verbal interactions in classrooms or meetings,

to carry out group interviews with students after particular lessons and so forth, these techniques for recording are not particularly distinctive".

Dr John Izard, on the other hand, took a slightly different position in his paper entitled "Development of Research Skills to Improve School-Focussed Research". To Dr Izard, it would appear that action research is just one type of school-focussed research which, in his view, could well include collaborative efforts between classroom teachers and researchers. Referring to a so-called "research typology" (*pace* Prof Kemmis), Dr Izard reiterated that "action research is qualitative where the teacher is investigating presence or absence of particular qualities in children, and quantitative when the teacher counts the events or reports proportions or averages . . . ." He then identified some of the features of school-focussed research and the concerns that such research addressed. With regard to research designed to improve classroom learning, for instance, Dr Izard noted that "the important elements of such research have to include trials of alternatives under comparable conditions, a gathering of evidence on the relative success of strategies, and judgements about this evidence in order to reach some conclusion". These features are rooted in the established canons of disciplined inquiry.

It is clear that both Prof Kemmis and Dr Izard accord importance to systematic, disciplined inquiry and respect the value of evidence properly collected; where they probably disagree would be in the *criteria* with which to judge the validity of claims to educational knowledge.

Teacher Professional Satisfaction

The question of collection and interpretation of evidence in school-focussed research is handled in a different way by the nine-country cross-cultural comparative research project teams, as explained in the paper by Prof Allen Menlo and appropriately exemplified in those by Dr Sim Wong Kooi and Dr Frances Lee Moi Fah, which should be read together. The two papers complement each other. Both *quantitative* and *qualitative* approaches were employed in that project. The subject was teacher professional satisfaction and the sources of enthusiasm and discouragement in their professional work.

Prof Menlo's paper "Doing Research on Teachers' Professional Satisfaction" provided the backdrop for the other two reports. It explained the general design of the study and IE's membership of this Consortium for Cross-Cultural Research in Education, the aim of which was to "generate basic behavioural science knowledge, applied knowledge about the nature of teaching and schooling, and policy and practice recommendations for the improvement of education within the cultural settings involved". Research into teacher professional satisfaction has been undertaken for various reasons, although the concept of job satisfaction in teaching remains a difficult concept to define and measure.

Dr Sim Wong Kooi in "The Job Satisfaction of Teachers in Singapore" used the quantitative approach as it was appropriate for the main research question explored: To what extent are certain background and job characteristics related to teacher job satisfaction for a sample of secondary school teachers? What emerged from an analysis of the data set ($n = 926$) constituted two well-defined dimensions of teacher job satisfaction with the amount of stress experienced playing different roles. For *overall job satisfaction*, stress should be reduced, if not eliminated, for teachers to enjoy their work, while in contrast, *work orientation* is expected to be stressful although satisfying especially in the attainment of work success. A conducive work environment, allowing teachers to undertake activities leading to their professional development and their enjoying a teacher-pupil rapport, was found to contribute to a stress-reduced situation which in turn was associated with overall satisfaction. On the other hand, provision of overall professional autonomy with teachers being able to assume a pastoral role and exert better pupil behaviour control could be associated with work orientation. The relationship between teachers' background variables and the dimensions of job satisfaction was less clear-cut, however.

In her paper on another aspect of teacher professional satisfaction, Dr Frances Lee reported the findings that emerged from a content analysis of interviews conducted with 211 teachers drawn from 14 schools in Singapore. A complex method of group interview followed by individual explanation attempted to identify and characterise the sources of enthusiasm and of discouragement in their jobs.

Dr Lee reported that the most important finding was the close link between teacher professionalism and the quality of teaching. They were enthused by creative methods of teaching, teaching preferred subjects and ECAs and establishing a good rapport with pupils. On the other hand, they were discouraged by excessive supervision, having to cope with constraints and performing non-teaching tasks, although these negative sources could well be turned into positive forces if the teachers could begin to understand their changing roles in the school. The role of *context* in shaping social relations must be recognised. Dr Lee therefore identified certain senior staff positions in a school (e.g., principalship, vice-principalship and headship of departments) as important sources of satisfaction and dissatisfaction.

Student Thinking

While good teachers have always created classroom environments that encourage student thinking, the direct teaching of thinking skills is beginning to be regarded as a new priority in the school curriculum. But how do our students think? As an excellent example in disciplined inquiry of the creative impulse to make an intuitive idea explicit, Mrs Belinda Charles' paper entitled "The Ability of Secondary School Students to Imagine Possibilities" makes interesting reading. In the paper, Mrs Charles reported on her research aimed at identifying the thinking patterns of a sample of 800 secondary students (aged 13-16) drawn from six schools. The study was based largely on Piagetian concepts of cognitive development. As Mrs Charles put it, "What differentiates the child of seven to eight years and the child of eleven to twelve years is the ability of the latter to understand infinity, to tolerate not knowing the limits . . . . The attainment of this greater tolerance for open situations as opposed to closed situations is sometimes called maturity or experience by teachers and onlookers". The researcher's conclusion was that the ability to involve possibilities beyond what was given increased with age. The greatest change occurred between ages 13 and 14. The amount of variance attributable to gender, home background as represented by parent's education was not much, although academic achievement had a stronger relationship with judgmental ability than did the two variables. While age did make a difference to judgmental ability, even the 16-year-olds (the oldest group in the sample) were not entirely comfortable about delaying judgment or about considering factors outside the given context.

Characteristics of Effective Mathematics Teachers

Outside the process-product tradition of research, which has dominated investigations on teaching, there is much to be said for exploring student-teachers' knowledge structures as part of the attempt to build a knowledge base for teacher education in Singapore. On a more generic level, Dr Lim Suat Khoh and Dr Wong Khoon Yoong, in their joint paper "Perceptions of An Effective Mathematics Teacher", examined pre-service trainees' understanding of effective teaching, specifically their perceptions of an effective teacher of mathematics since such knowledge would provide an insight into the nature of teacher thinking that may affect lesson planning. The three characteristics highly rated were: Ability to explain concepts etc clearly, being confident and at ease when teaching, and ability to convey an enthusiasm for mathematics. As the authors noted, the main challenge to teacher educators is to transform these perceptions into a training programme so that these same perceptions could be realised.

Pastoral Care

An important aspect of a school's broad-based

education strategy to develop the "whole person" would require a careful coordination of the personal, social and intellectual development of pupils. In their paper, "Pastoral Care in British Schools: Applications for Singapore", Miss Vilma D'Rozario and Prof Lawrence Chia presented a case study of how one secondary school in Singapore had incorporated pastoral care into its school organisation. A framework for a three-fold approach to pastoral care in Singapore schools was outlined. Implications for research in the area of pastoral care were also proposed.

Concluding Remarks

In an attempt to stimulate inquiry and research efforts in Singapore, the Educational Research Association has initiated since its first annual conference in 1987 a number of invited papers from well-known scholars addressing significant directions of inquiry in educational research. The addresses of Prof Kemmis, Dr Izard and Prof Menlo reproduced in this issue belong to this category, and they complement the good work of local researchers. Taken together, the eight papers constitute an invitation to adopt a kind of identity that characterises school-focussed research in Singapore — eclectic in approach encompassing empirical, qualitative and interpretive methods and also comprehensive in coverage.

Action research, which offers itself as an alternative to the psycho-statistical tradition of educational research, has much appeal for the self-reflective classroom teacher, keen on improving his practice through reflectively-acquired self-knowledge. But action research in a school setting, if it is to be *collaborative*, has to be supported institutionally. As Stenhouse noted in 1975, with particular reference to school-based curriculum development and research in UK: "The power of the individual teacher is limited. Without his strengths the betterment of schools can never be achieved; but the strengths of individuals are not effective unless they are co-ordinated and supported. The primary unit of co-ordination and support is the school". It would seem that the *institutionalisation* of action research in a school environment should be an appropriate topic for discussion at school meetings.

Finally, it is my special privilege to have had the opportunity to work with the eight contributors, and I thank them for their very helpful and constructive response to editorial suggestions.

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Improving Schools and Teaching Through Educational Action Research

Stephen Kemmis

I am no expert on education and schooling in Singapore. What I have to say about education reflects my own background in education in Australia, with some experience in the United States and Britain. I can only hope that at least some of what I say is relevant to your situation here in Singapore.

The Nature of Education

Individual and societal functions of education

What is education? It is a process by which rising generations *enter* and *extend* the forms of life of earlier generations in a society. In schools, colleges and universities, education aims to give individuals access to, and the means to improve, the linguistic knowledge, skills and social orientations (attitudes) of their society. But education does not only serve the interests of *individuals*; it also serves the interests of whole *societies*. It aims to create an educated public, with the knowledge, skills and social orientations to carry on the forms of life characteristic of the society and also able to participate cooperatively in improving the society.

What does improving a society mean? In my view, improving society means three things. First, it means improving *the means and modes of production* of the society, to make them more productive, and to give each person access to the means for living a useful and satisfying life. Second, it means improving the quality of *knowledge and values* in the society, to make it more rational, coherent and worthwhile. And, third, it means improving the way *power* is exercised in society, to make the social relationships and organisation of society more just, so each person has a real opportunity to participate fully and equitably in the life of society, with a fair and democratic distribution of power. I present these three aspects of improvement in no particular order of importance: in my view, each one depends on the other two, so they are all fundamentally interrelated.

Education and the reproduction and transformation of society

Education plays an important role in the improvement of society. Through education, we develop persons with the knowledge, skills and orientations necessary to maintain and develop society, and through education, responsible authorities can create the kind of learning environment and social environment which will help to ensure that the society is maintained and improved. Education has always played these two kinds of roles: helping to *reproduce* (from one generation to the next) the kind of society we already have, and helping to *transform* society by preparing students to participate in it in ways which will ensure that it continues to develop and improve.

Schools thus express our individual and societal *needs* and our individual and societal *hopes*: what we teach in schools expresses what (we perceive) is needed to ensure the survival and continuation of each person and of our society as a whole, and our hopes for the improvement of each person and of our society as a whole.

For schools this is no easy matter — carrying the burden of our needs and our hopes. The

public at large, parents, the media, politicians, employers and others give those responsible for the work of schooling contradictory messages about what they believe is needed and what kinds of improvement they hope for. For example, sometimes employers tell us they want students who are more compliant and obedient; at other times, they tell us they want students who have initiative and who think creatively and independently. Sometimes government officials stress the role of schooling in the development of citizens who can participate actively in the development of political life; at other times, they speak as if schooling were only to be valued for what it contributes to the development of economic life.

Curriculum formulation and realisation

Interpreting this range and diversity of demands on schooling to make a coherent curriculum for students is the permanent problem of curriculum development, and a permanent problem for teachers who must interpret and realise curricula in their classrooms. It becomes a source of special difficulties when those who *formulate* curricula operate independently of the teachers who must *realise* curricula in their classrooms. And the gap between curriculum formulation and curriculum realisation can become a particular source of difficulty for schools when those who formulate curriculum become oversensitised to the views and perspectives of interest groups outside the school, and neglect the views and perspectives of teachers, students and parents.

The gap between curriculum formulation and curriculum realisation usually widens as societies demand more and more of their schools in response to the increasingly complex demands of economies characterised by increasing specialisation of tasks and differentiation in the workforce, and as education systems themselves develop a marked division of labour between those who teach and those who supervise education systems, and between those whose responsibilities are primarily for curriculum and those whose responsibilities are primarily for system-maintenance (supervision of resources, facilities, administration and the like). In order to meet these demands, increased central planning and coordination is required, and frequently administrative values and concerns come to dominate educational ones. This centralisation of planning may reduce teachers to the status of mere operatives in what some administrators see as no more than a "delivery system" which happens to be "delivering" education rather than any one of a number of other possible social services.

When the gap between curriculum formulation and realisation becomes too wide, a range of problems arise: students may find curricula irrelevant to their concerns and interests, teachers may become demoralised, parents may complain that schools are failing to meet their needs and their children's needs, and school administrators may have difficulty in sustaining the quality of school life and the quality of education for the whole school community (students, teachers, parents and others). For such reasons (countering the gap between curriculum formulation and realisation), it is important that teachers play (and are seen to play) an important role in the curriculum development process — in curriculum formulation as well as curriculum realisation. If we do not value, support and trust our teachers — not just hold them to account — as the people responsible for actually doing the work of educating our rising generations, we can hardly complain if they give us less than their best, and we can hardly show surprise if the education for our rising generations proves insufficient to meet the needs of the increasingly complex demands and the increasingly complex economic, social, cultural and political interdependencies of the modern world.

But the contradictions and conflicting messages about the curriculum are not all from outside schools: there are contradictions within. There are contradictions between what we do and what we say as teachers, and contradictions between what we say is needed of students and what we hope for them. For example, we may tell our students that we hope for fairer and more democratic forms of society, even while we treat them unequally and inequitably; or we

may say that our curricula will prepare them for participation in the economic and political life of our countries, yet the curricula may value only a narrow band — frequently an arid band of so-called "academic" skills — of the range of knowledge, skills and orientations necessary to sustain, let alone develop, our societies; or we may say that we want to make education accessible to and enriching for all, while making it obvious by our practice that we really value only a special few among our students — those who already show promise in the things that we are good at teaching.

The increasingly complex conditions of our world and the increasingly complex tasks of curriculum and teaching within our schools are different sides of the same cultural process, going on inside our schools as well as beyond them. The contemporary pace of international economic development offers new possibilities for a better life for all but, at the same time, it threatens some of the cultural values we hold most dear — the well-being of individuals, the security of families, the integrity of whole cultures. Teachers find themselves right at the centre of this struggle between different kinds of values. Finding new and more powerful ways to support our schools and our teachers is a crucial task not only for education systems but for whole societies. We must find ways to give teachers the knowledge, skills, values and resources adequate for their tasks. One way we can give them this support is by giving them the means to participate significantly in the work of curriculum formulation as well as the work of curriculum realisation. This is one element of what has been called the *school-based curriculum development* movement which has gained momentum in many parts of the world. Another way to support teachers is to create the working conditions under which they can find out, on our behalf, what works and what does not work in education. This is an element of the *teachers-as-researchers* and *school-focussed research movements* which have similarly flourished around the world.

"The workers are the inspectors"

Both school-based curriculum development and school-focussed research impose additional demands on already-busy, already-stressed teachers. But there is, in my view, no alternative but to make resources available to support teachers in these tasks. In the end, the work of schools succeeds or fails in classrooms where the teaching and learning actually goes on. Teachers are always at the point where new curriculum ideas are tested in practice, and they are increasingly well prepared, by their own professional education and experience, to evaluate the quality of new educational principles and proposals in practice. In the past, we have attempted to make others responsible for finding out what works — inspectors, curriculum evaluators, school administrators and supervisors. But when we do so, we split off a crucial and central part of the educational task — ensuring that it is performed well. A story will illustrate my point.

> In the early eighties, American [automobile] executives, because of joint production deals, were often visiting Japanese factories, and they were finding out how good the Japanese were, especially at the basics. One executive who had made that trip and reached that conclusion a decade earlier was Hal Sperlich, then of Ford. Touring a Japanese auto factory in the early seventies, he had noticed that there were no repair bays alongside the [production] line, areas into which defective cars in the process of assembly were pulled for fixing.
>
> "Where do you repair your cars?" Sperlich asked the engineer with him.
>
> "We don't have to repair our cars," the engineer answered.
>
> "Well, then," Sperlich asked, "where are your inspectors?"
>
> "The workers are the inspectors," his guide answered. (Halberstam, 1986, p. 734)

The workers must be the inspectors in education, too. And we must give them the knowledge and resources (some time and a little money) to actually do the work of "inspecting" teaching and learning in schools, while the teaching and learning goes on.

This is the work of educational action research. Before returning to educational action research, I will make some general remarks about the requirements for an adequate science of education.

Improving Education Through Educational Research

So far, I have argued that education has an important role to play in improving society, by improving the nature and conditions of our work (to make it more accessible, productive and satisfying for all), the quality of our knowledge (to make it more coherent as a repository of our understandings and more rational as a source of guidance and justification of our action), and the exercise of power in society (to make it more just and equitable for all). Education is one of the most important ways we can work towards improving society. Because society is constantly changing, our education must also undergo continual development and redevelopment. An education cannot continue to improve without the active participation of teachers in curriculum formulation, and in curriculum research and evaluation. I have also argued that education systems need to find new ways of supporting teachers in these tasks.

Just as improving society means improving the nature and conditions of work, the quality of our knowledge, and the exercise of power in society as a whole, so improving education means improving the nature and conditions of the work of education, the quality of our knowledge of education, and the exercise of power in our educational institutions. Changing the way our society is constituted in terms of work, knowledge and power means changing the ways our schools are constituted in terms of work, knowledge and power.

If the aim of educational research is improving education, then much of our current educational research is inadequate to the task. It frequently does a poor job of helping us to change education because it does not adequately understand the nature and problems of change.

Some people think that changing education can be achieved just by changing the curriculum tools teachers use for their work, as if teaching and learning was a kind of manufacturing process like any other — as if teachers were like any other skilled workers and learners were like any other kind of raw material which could be transformed by a manufacturing process (in this case, a process something like "pumping" knowledge into them to increase their value). As a decade of research into the nature and processes of curriculum innovation has shown, however, it is not just a question of changing the tools teachers use (the curriculum). The workers must also change: they must learn new skills to use any new tools we may offer them. Most importantly, teachers and learners do not behave like workers and raw materials in a factory. Education is a social and cultural activity which requires a very active form of participation by teachers and learners whose own interests and intentions must be taken into account in the act of education; they must interpret the language, activities and social relationships of education for themselves; together, by the way they interact, they must *make* their encounter educational — one in which individual learning and the development of a society can actually occur. Unlike manufacturing processes, educational processes require that the workers and the "raw material" choose to teach and learn, and choose to do their work well and to improve it whenever they can. Education requires that the people involved are active agents in the process, not just passive subjects in or objects of others' curriculum interventions into their lives. Educational research which treats them as passive objects may tell us something about how education is carried out, but it is hardly likely to engage them in the fundamental ways necessary to bring about significant change in what they do.

Positivist, interpretivist and critical views of educational research and evaluation

Much of what is at issue in the methodological disputes of the research and evaluation literature over the last fifteen or twenty years boils down to this: the nature of the relationship between the researcher and the researched, and the evaluator and the evaluated. It is a relationship which is revealed in the way those people are addressed in the research report — indeed, the way those people are tacitly, implicitly, being addressed throughout the research act.

This relationship is so visible and so significant in the construction of what it means to do

research or evaluation or even of science that, like the first movement of the conjuror's trick, it escapes our notice. Once particular kinds of social relationships between researchers and the researched become established in traditions of educational research and evaluation, we begin to assume that they no longer require justification. But of course they do require justification.

Positivist methods address the people being researched or evaluated in *the third person*: as "them" (or "he" or "she", or even "it"). The researcher or evaluator speaks *about* these people. The researcher/evaluator takes a stance which he or she believes is *objective*. This means, in reality, that the people being researched or evaluated are being treated as *objects* (even though they are paradoxically described by some positivists as "subjects" — in the sense that they are people subjected to being treated as objects). In positivist research and evaluation, the researcher/evaluator aims to *explain* these people's actions — and believes that if their actions can be reliably *predicted* under certain circumstances, then this is the same as having explained their actions. Behind this mode of viewing the other in the research act is the will to *control* circumstances and consequences.

Interpretivist methods, by contrast, address the people being researched or evaluated in *the second person:* as "you". The researcher or evaluator speaks *to* these people — even, in a certain (rather hip) sense, *with* them. The stance of the researcher/evaluator is frequently described as *subjective.* By using the label "subjective", positivists frequently mean to imply that interpretive researchers and evaluators view those they study "in ways which are subject to personal bias"; interpretivists themselves, however, usually use the label "subjective" to mean "with the respect due to a person who is a responsible knowing subject". In interpretive research and evaluation, the researcher/evaluator aims to *understand* people's actions, with some using "understanding in a psychological sense of understanding (empathetic understanding), and others using a historical sense of understanding (understanding actions in their social and historical context). Behind this mode of viewing the other in the research act is an interest in *educating* those researched or evaluated about the meaning, significance, nature and consequences of their actions in the context of the human, social and historical circumstances under which they act.

Regrettably, when interpretive researchers and evaluators come to write their reports (and I among them), they frequently (usually?) change their mode of address. The people who were "you" during the study become "them" in the report. The audience for the research act shifts, and one kind of relationship between people is supplanted by another. Participants in the institution or programme being researched or evaluated are no longer people to be treated as responsible, knowing subjects; they are treated as objects — "them". The truth of the research act is suddenly revealed: the researcher/evaluator is revealed as the knowledgeable observer who tells all, the middle dog who writes about the underdogs for the top dogs — in a precise grammatical sense, as two-faced.

In distinction to both positivist and interpretive approaches, *critical* methods address the people being researched or evaluated in *the first person:* as "I" or, more typically, as "we". The researcher/evaluator speaks *for* such people or (in a different sense from that used by the interpretivists) *with* them (in this case, in the sense of having solidarity with them). The stance of the researcher/evaluator cannot be described either as "objective" or "subjective": it is *both objective and subjective,* in the sense that one treats oneself and one's fellows both as subjects and as objects in a process of *critical reflection and self-reflection.* In critical research and evaluation, the researcher/evaluator aims to *develop* or *improve* people's actions, understandings and situations through collaborative action. Behind this mode of viewing the people being researched/evaluated is an interest in *emancipating* people from irrational, unjust and unfulfilling constraints on the lives and circumstances they share as the products and producers of history.

I put it to you that this set of distinctions is at the heart of the differences between positivist, interpretivist and critical methods. If I am correct, then certain critical questions arise. For example, what are the social, political and historical circumstances that shape us for these different roles, and what are the conditions under

which we adopt or accept these different modes of address in our professional work as researchers and evaluators?

Our answers to these questions are revealing. They reveal our views about how we fit into, and orient ourselves towards, the structures of power which constitute our society. They reveal how we act as the bearers of the ideologies which reproduce and transform the shared ways of life of the different and interlaced communities of which we are part. And our answers reveal our beliefs about how societies can be improved, and about whose interests will be served when we intervene.

In these last paragraphs, I have chosen to use the first person plural deliberately — to speak of "we" and "our" — because we are the people who construct the practices, the traditions and the history of research and evaluation. We are not prisoners of the methods taught in textbooks, indentured labourers of inexorably-advancing research literatures; or the willing servants of any client or sponsor who can pay our way. On the contrary, we are active agents of research and evaluation and our society — people who can, through the choices we make about how we will participate in the work of research and evaluation, tip the scales of history. Whether we know it or not, and whether we like it or not, by our methodological choices, we can and always do shift the balance one way or the other between reproducing the kind of society we have now, and transforming it to make it another kind of society that we hope will be better for us all.

When I conduct a research or evaluation project, do I choose to work with those whom I work with as "them", or "you", or "us"? If I were in an institution or programme being researched or evaluated, what kind of evaluator would I prefer to work with? Perhaps you think the choice would be made solely in terms of self-interest. I do not. To escape the prison of self-interest, we must answer the question using the rigorous criteria of truth (rationality), justice and the possibility of a sustainable, productive and satisfying life for all. In saying so, I do not count myself a hopeless idealist. I see myself as realist. On the best of our knowledge and civility, I see no other alternative. Without these criteria, we are at the mercy of narrow self-interests and short term gains — victims of the oppression we ourselves conspire to make. I choose to work *with us, for us.*

Table 1 presents a more complete classification of approaches to educational research based on distinctions between positivist (empirical-analytical), interpretive (historical-hermeneutic) and critical research.[1]

Towards a critical view of educational research and evaluation

The critical view of theory and research has been developed and articulated by the "Frankfurt School" of philosophers and social scientists. What, in general terms, unites these people is the belief that the all-pervading influence of positivism has resulted in a widespread growth of instrumental rationality and a tendency to see all practical problems as technical issues. This has created the illusion of an "objective reality" over which the individual has no control, and hence to a decline in the capacity of individuals to reflect upon their own situations and change them through their own actions. An overriding concern of the Frankfurt School, therefore, has been to articulate a view of theory that has the central task of emancipating people from the positivist "domination of thought" through their own understandings and actions.

This view of theory is usually labelled "critical theory". It is clear, however, that the term "critical theory" can be interpreted in various ways. To some, critical theory is primarily an attempt to overcome some of the weaknesses of orthodox scientific method. To others, it is a new set of debates within a long sequence of debates about the nature of the philosophy of science and epistemology. Here, I wish to give primary emphasis to the aspect of critical theory which has generated what Habermas referred to as "critical social science", for a critical social science addresses the theory-practice

[1] The classification is based on the arguments in Carr and Kemmis (1986). See also Bredo and Feinberg (1982) and Popkewitz (1984).

TABLE 1: A CLASSIFICATION OF ALTERNATIVE STYLES OF EDUCATIONAL RESEARCH

	FORM OF RESEARCH		
	POSITIVIST (Empirical-analytic)	INTERPRETIVE (Historical-hermeneutic)	CRITICAL
PRESUMED NATURE OF EDUCATION AS AN OBJECT OF RESEARCH	Education as a 'phenomenon'; schooling as a delivery-system (technology)	Education as a developmental process; schooling as lived experience	Education as a social project; schooling as an institution for social and cultural reproduction and transformation
RESEARCH METHODS	Natural-scientific; experimental; 'quantitative'	Historical, interpretive; 'qualitative'; ethno-methodological; illuminative	Critical social science; emancipatory action research
FORM OF RESEARCH KNOWLEDGE	Objective; nomological; causal explanation	Subjective; idiographic; interpretive understanding	Dialectical; reflexible understanding aimed at critical praxis
EXAMPLES OF SUBSTANTIVE THEORETICAL FORMS	Functionalist psychology; structure-functional sociology	Structuralism in psychology, sociology, anthropology	Ideology-critique; critical curriculum theorising by collaborating teachers
HUMAN INTEREST	Technical	Practical	Emancipatory
PRACTICAL PURPOSE AND FORM OF REASONING	Improvement of the 'technology' and schooling; instrumental (means. ends) reasoning	Enlightenment of practitioners; practical-deliberative (informs judgement)	Rational transformation of education; critical reasoning (i.e., practical reasoning with emancipatory intent)
THEORY OF HUMAN NATURE	Deterministic	Humanistic	Historical-materialist
EDUCATIONAL PHILOSOPHY	Neo-classical, vocational	Liberal-progressive	Socially-critical, democratic
EDUCATIONAL VALUES	'Moulding' metaphor. Individuals prepared for a given form of social life	'Growth' metaphor. Self-actualisation of individuals within meritocratic form of social life	'Empowerment' metaphor. Individuals collectively producing and transforming existing forms of social life through action in history
VIEW OF EDUCATIONAL REFORM	Research, development and dissemination; bureaucracy, corporate management	Enlightened action; liberal-individualist; reconstructionist	Contestational, communitarian; reproduction and transformation through collective action

relationship in education in a way very different from that suggested by positivist and interpretive social sciences. Among other things, critical social science concerns itself with forms of educational theory and research aimed at changing the work of schools and educational systems.

A critical social or educational science meets the five formal requirements for an adequate educational theory which Wilf Carr and I (Carr & Kemmis, 1986) outlined on the basis of a detailed critique of positivist and interpretivist research in education, and, in particular, through a critique of the relationships between theory and practice presupposed by positivist, interpretivist and critical research.

First, following the criticisms of positivism, Carr and I argued that any adequate approach to *educational theory must reject positivist notions of rationality, objectivity and truth* as limited and partial, and, in terms of the history of social science and the evolution of society, as dangerously misleading. In particular, an adequate approach to educational theory must reject (a) the positivist idea that knowledge has a purely instrumental value in solving educational problems and the consequent tendency to see all educational issues as technical in character (since educational problems are not only problems about the means to particular ends but also moral and "practical" problems about how to do what is right, problems which can be addressed only through what has been described, since Aristotle, as "practical reasoning"[2]); (b) the idea that social reality can be "objective" in the sense that it can be described, understood or explained solely by reference to some foundational categories of knowledge and without reference both to the social processes and the historical processes by which knowledge is constructed (since educational problems are problems of human and social action, socially- and historically-shaped and structured by the intentions, beliefs and worldviews of people interacting within cultural-given frameworks); and (c) the idea that knowledge can be value-free or value-neutral in the sense that it can be described, understood or explained without reference to the worldviews, concerns, values and interests of researchers and those whose lives they research (since educational knowledge is framed in relation to historically- and culturally-located values about the nature and worth of education itself, and since knowledge about education is produced in and for action guided by the — potentially competing — values and interests of particular groups).

Secondly, and accepting the interpretivist argument that educational research must grasp the meanings that educational practices have for those who perform them, we argued that any adequate approach to *educational theory must accept the need to employ the interpretive categories of teachers*[3]. Indeed, for educational theory to have any subject-matter at all, we demonstrated that it must be rooted in the self-understandings of educational practitioners.

However, the recognition that educational theory must be grounded in the interpretations of teachers, is not in itself sufficient. For, while it may be true that consciousness "defines reality", it is equally true that reality may systematically distort consciousness. Indeed, one of the major weaknesses of the interpretive approach to educational research is its failure to realize how the self-understandings of individuals may be shaped by illusory beliefs which sustain irrational and contradictory forms of social life[4]. For this reason, Carr and I argued that a third feature of any adequate approach to educational theory is that *it must provide ways of distinguishing ideologically distorted interpretations from*

[2] For accounts of the nature of practical reasoning, see, for example, Gauthier (1963), Schwab (1969) and Reid (1978).

[3] Strictly speaking, this criterion should be expressed in terms of the interpretive categories of the range of actual participants in the educational action to be understood or theorised. This would include at least *students* as direct co-participants in educational encounters, and *administrators* (at the school level and beyond) whose indirect contributions may shape the educational encounter in less direct, but nevertheless quite concrete and immediate ways, and a range of *significant others* (not least, parents, members of school councils, and the like). Since the general term "participant" has a connotation of "otherness", suggesting that the people denoted are objects of the researcher's or evaluator's investigation, I have attempted to avoid this objectification by referring to teachers in particular, though the argument should properly be extended to the range of people actually involved in any particular educational encounter.

[4] Cf. ideology as false consciousness.

those that are not. It must also provide some view of how any distorted self-understanding is to be overcome.

Another related weakness of the "interpretive" approach is its failure to recognize that many of the aims and purposes that teachers pursue are not the result of conscious choice so much as a result of the constraints contained in a social structure over which they have little, if any, direct control[5]. Thus, we argued, a fourth requirement for educational theory is that *it must be concerned to identify and expose those aspects of the existing social order which frustrate the pursuit of rational goals and must be able to offer theoretical accounts which make teachers aware of how they may be eliminated or overcome.*

On the basis of these arguments, we concluded that a fifth requirement of an adequate approach to educational theory and research is that *it must be practical, in the sense that the question of its educational status will be determined by the ways in which it relates to practice.* For this reason, educational theory cannot simply explain the source of the problems that practitioners may face. Nor can it rest content with trying to solve problems by getting teachers to adopt or apply any solutions it may produce. Rather, its purpose is to inform and guide the practices of educators by indicating the actions that they need to take if they are to overcome their problems and eliminate their difficulties. In this sense, educational theory must always be orientated towards transforming both the ways in which teachers see themselves and the ways they see their situations, so that the factors frustrating their educational goals and purposes can be recognized and eliminated. Equally, it must be oriented towards transforming the situations which place obstacles in the way of achieving educational goals, perpetuate ideological distortions, and impede rational and critical work in educational situations.

As Carr and I have outlined them, the five requirements come to bear not only in educational theorising, but also in educational research and evaluation. For without the resources of an educational theory, we cannot claim to know what we are talking about when we talk about education — at least not in any strong sense of "knowing". To arrive at educational understandings, let alone justified educational action, educational theorising is required — and the requirements we have proposed make claims about what it means to "theorise" in education. They rule out certain approaches to educational research and evaluation as inadequate, and require that certain other approaches be adopted. As we shall see, though many of the approaches currently employed (and proposed) have some value, they are constrained and limited, and other approaches, currently underemphasised, turn out to be essential.

One way to begin theorising education is through educational research and evaluation — through studying the nature and worth of educational activities. But if we employ the five requirements in making a critique of conventional approaches to educational research and evaluation, we discover that most can generate only limited, partial and (frequently) misleading advice about the nature and worth of particular educational activities. So: what kind of educational research and evaluation *is* justified in terms of these requirements of an adequate educational theory? We can begin to answer the question by using the requirements to eliminate some of the more obvious alternative approaches, and thus to identify approaches which are justified on the basis that they have withstood this critical examination.

(1) The rejection of positivist approaches as partial and misleading

On the first requirement, we are obliged to reject as partial and misleading (a) those forms of educational research and evaluation which take only an instrumental view of education, that is, those approaches which construe education solely as a technical means to certain educational ends (usually defined in terms of certain measured student achievements or outcomes). We must thus rule out as partial and misleading those forms of educational research and evaluation whose sole concern is *aims-*

[5] Cf. ideology as constituted through practices which secure the reproduction of the social relationships of production.

achievement[6]. In addition, we must rule out as partial and misleading (b) those forms of research and evaluation which treat the social reality of education as "objective", as if it were not of interest precisely because it is humanly-, socially- and historically-constructed. We thus rule out those forms of educational research and evaluation like those based solely on *testing and the measurement of student outcomes*[7], which privilege educational and social measurements as "facts" (in one way or another basing their justification on the strict empiricist grounds that we may count as valid knowledge only that which is reducible to sense data — the rule of phenomenalism[8]). Despite attempts to revive and recast it, test theory still depends on empiricist and foundationalist presuppositions which have been overturned in the philosophy of social science — test developers have been unmoved by this loss of a rational basis for their work, however, and continue to develop instruments on the basis of techniques that now lack adequate rational justification. And we must rule out as partial and misleading (c) those forms of educational research and evaluation which claim to be value-free or value-neutral, aiming to describe, understand or explain education without reference to the worldviews, concerns, values and interests of those involved in particular educational activities and those who conduct the evaluations. We thus rule out *all those forms of educational research and evaluation* (including the aims-achievement and student-gain-by-testing approaches already mentioned) *which do not take an interpretivist approach* on which basis the worldviews, concerns, values and interests of participants can be reconstructed and understood. On these three grounds, we see that much educational research and evaluation is partial and misleading, and insufficient as a basis for analysing or adjudicating educational issues.

This is not to say that any or all of these approaches are without any merit at all. On the contrary, they may be of some assistance to those wanting crude indications of the nature and effects of particular educational activities. But any of these approaches, alone or in combination, will always be insufficient in arriving at an *educational* theory or an *educational* evaluation. They are never more than crude indicators, no matter how apparently precise the measurements they use, and no matter how sophisticated their manipulation of test conditions and test data. To contribute to our educational knowledge, they must be supplemented by other evaluative work. In a variety of ways, this point has been recognised by some of the major evaluation theorists of recent decades, including Cronbach[9], Stufflebeam[10] and Stake[11].

(2) The need to employ the interpretive categories of participants

In some ways, the second requirement elaborates some of the issues which arose in relation to the rejection of positivist approaches as partial and misleading. In particular, it enjoins us to adopt approaches which permit an evaluation to give accounts of the worldviews, con-

[6] This rules out the exclusive use of a variety of approaches based on the classical approach outlined in R. Tyler (1949). For example, it rules out the exclusive use of the approach to educational evaluation based on instructional objectives advocated by Popham and his associates (for example, W.J. Popham and E.L. Baker (1970)).

[7] This is so whether the tests are norm-referenced, criterion-referenced or domain-referenced: whenever test items treat the developing or achieved knowledge of students solely in their own terms, they privilege the test-maker's view of knowledge over the test-taker's. The technical procedures by which test validity and reliability are achieved may provide grounds for taking the results of tests seriously as indicators of achievement in relation to particular topics in particular populations, that is, how they perform on particular items in relation to particular populations, but they do not provide accounts of students' knowledge. To describe what students know requires an analysis of the way they structure their own understanding of the world — something which can only be approached using interpretive techniques (see below).

[8] See L. Kolakowski (1972), pp. 11–12.

[9] See, for example, L.J. Cronbach (1975), in which he acknowledges that certain educational effects remain beyond the grasp of experimental and correlational methods, and require investigation through historical and other interpretive approaches.

[10] Stufflebeam's Context-Input-Process-Product approach, while empiricist in many respects, makes it clear that educational action must be understood in context, and in relation to the interests of "decision-makers" in and around the situation; see Stufflebeam *et al.*, (1970).

[11] See R.E. Stake (1967). Here, Stake makes two important shifts from a strict empiricist base: first, it relates antecedents to outcomes via transactions; second, it recognises that the quality of educational activities depends crucially on the perspectives, values and standards of different observers. Stake's shift from objectifying approaches to subjectivist approaches in evaluation was completed in his development of the notion of "responsive evaluation" — see Stake (1975). In outlining the responsive approach, Stake draws heavily on the psychological verstehen tradition in interpretivist social theory — see W. Outhwaite (1975).

cerns, values and interests of participants in a particular educational situation. Most importantly, it enjoins us to give accounts of the situation and the activities we observe in terms of the meanings they have for those involved, and that means employing the interpretive categories of the participants themselves.

On this requirement, we must therefore employ educational research and evaluation approaches which explore and report the way participants understand what they are doing. This suggests that we must employ interpretive techniques for the analysis of learning, which describe how new learning builds on old in terms of the understanding of students themselves (for example, through protocol analysis (Easley, 1974: 281–290) and clinical interviews[12]). It also suggests that we must employ interpretive techniques which allow us to understand what teachers (and others like curriculum developers and programme administrators) understand themselves to be doing in a particular educational setting. And, depending on the circumstances of the case, our interpretive enquiries may extend beyond the immediate setting of the classroom into the school and perhaps beyond it (for example, if we aim to understand the social effects of schooling in the workplace or in extra-school settings in the family or community). We thus find ourselves compelled to undertake interpretive studies of students, teachers and significant others, and perhaps towards historical studies of schools and communities.

Among the approaches to educational research and evaluation which seem to be ruled necessary by this requirement are interpretive or hermeneutic methods, including idiographic approaches to the evaluation of student learning (Kemmis, 1978: 45–59), phenomenological and ethnographic approaches, case study and historical approaches[13]. As we shall see as we consider later requirements, however, some of these approaches are open to criticism on the grounds that they, too, may be partial and misleading.

(3) Identifying ideological distortions on interpretation

The third requirement of an adequate educational theory recognises that, while consciousness "defines reality" (in the interpretivists' view), reality may also systematically distort consciousness. An adequate educational theory will aim to show how the self-understandings of individuals may be shaped by illusory beliefs which are the products of social structures (particular uses of language, patterns of activity and forms of social relationships) which are beyond the control of individuals. These illusory beliefs can sustain irrational and contradictory forms of social life[14] which can be brought into the open in certain kinds of discussion between participants. The consequences of this insight have been explored by some writers on educational research and evaluation[15], but theirs is by no means a common view.

One way this can be achieved is through discussion aimed at what Habermas (1974) calls "the organisation of enlightenment". Such discussions, he says, can be arranged on the model of therapeutic discourses, except that, in the organisation of enlightenment, participants simultaneously take on the roles of analyst and analysand for one another. In some ways, the process resembles what Freire (1970) earlier described as "conscientization"; other descriptions of the organisation of enlightenment on the Habermasian model are described by Fay (1977), Held[16] and Comstock (1982).

This requirement imposes a burden on interpretive approaches which most cannot carry. It requires that interpretations (perhaps reached by an evaluator, perhaps by a member of the participant group) are subjected to critical scrutiny by participants in order to test the possibility that their understandings of themselves and their situation may be systematically

[12] See, for example, Piaget (1929) "Problems and Methods", the introductory chapter and Codd (1981), pp.145–50.

[13] Arguments for such approaches can be found in a variety of works on educational research and evaluation, including, for example, Apple *et al.* (1974). Hamilton (1977), Bredo and Feinberg (1982) and Popkewitz (1984).

[14] Cf. ideology as false consciousness.

[15] For example, Karier (1974). A range of theorists of social and cultural reproduction in education, like Giroux and Apple (see above) have also explored ideology in educational research and evaluation.

[16] Held describes the approach as "immanent critique"; see Held (1980).

false — to test whether they have accepted false or illusory definitions of what they are doing (the products of a systematic false consciousness about the meaning of their activities, obscuring their rational interests). Some forms of interpretive educational research and evaluation (like MacDonald's (1976) "democratic evaluation") require *systematic negotiation of accounts* by evaluators to check that they have correctly represented the views of participants, but while this process offers a possibility of exposing systematically distorted understandings among members of the participant group (at least to the extent that contradictory interpretations may be identified), it imposes the obligation of negotiation on the evaluator on behalf of those evaluated — it does not ensure that systematic distortions are identified by participants on their own behalf, nor does it require that they analyse the relationships between the values and interests of different groups of participants in the setting to identify rational interests against ones that frustrate their rational aims.

To achieve the kind of organisation of enlightenment described by Habermas, *collaborative processes of analysis* are required. These may involve outsiders as "facilitators" (as in Freire's "conscientization" or Comstock's critical method), but the crucial testing of interpretations takes place in the collaborative process of analysis by participants themselves.

This requirement suggests that, at the very least, interpretive approaches must involve negotiation of interpretations with participants; more properly, they should involve *collaborative analysis by participants themselves.* On this requirement, much interpretive educational research and evaluation work is ruled out as partial and misleading because it privileges the perspective of the researcher or the evaluator over the perspectives of those being researched or evaluated.

(4) Identifying aspects of the social order which frustrate the pursuit of rational goals

The fourth requirement of an adequate approach to educational theory was that it must be concerned to identify and expose those aspects of the existing social order which frustrate the pursuit of rational goals and must be able to offer theoretical accounts which make teachers aware of how they may be eliminated or overcome. This was required, it was argued, because many of the aims and purposes that teachers pursue are not the result of conscious choice so much as a result of the constraints contained in a social structure over which they have little, if any, direct control[17]. *Wherever the interpretive approach to educational research or evaluation separates those who do the interpreting from those who must act on it (in a division of labour between researchers or evaluators, on the one side, and participants, on the other), it risks failing to meet this requirement.* In Habermas's account of critical social science, the organisation of enlightenment is distinguished from the organisation of action, but, though distinct, the two are seen as jointly necessary elements of rational social action. Only on the basis of their own rational interpretation of their situation can actors make rational decisions about how to overcome the constraints on their understandings and their action.

Here again there may be a role for "outsiders" who can facilitate interpretation, and perhaps even suggest possible courses of action to be followed. But, again, forms of educational research and evaluation which rely on outsiders' interpretations and prescriptions risk privileging the outsiders' perspectives vis-a-vis those of participants. Unless the outsiders' views are systematically tested by participants in their own *collaborative processes of enlightenment and decision-making,* they risk putting themselves under irrational or systematically distorted values and interests — values and interests which are not their own.

This requirement excludes a variety of conventional forms of educational research and evaluation, especially *forms of research and evaluation which aim to serve "decision-makers" beyond the settings being researched or evaluated* (and at the expense of the rational interests of participants themselves). It also excludes forms of educational research and evaluation which serve

[17] Cf. ideology as constituted through practices which secure the reproduction of the social relationships of production.

action through serving the interests of powerful groups outside the setting being researched or evaluated.

The requirement also narrows considerably the range of approaches to educational research and evaluation which can rationally be adopted. It includes only those forms of research and evaluation in which the general interpretive and informative function is open to participants, both during its process and as it relates to decision making. It thus includes only *collaborative approaches in which the research or evaluation process and the relevant action are seen as closely linked.* An example of such an approach is to be found in the spiral of cycles of critical self-reflection of *collaborative action research* (Carr & Kemmis, 1986; Kemmis & McTaggart, 1986).

By now, the set of approaches to educational research and evaluation which are justified in terms of the requirements of an adequate educational theory is extremely limited. Other forms of educational research and evaluation may be seen as contributors to the kind of collaborative, critical reflection which remains, but, on these arguments, they cannot rationally supersede it.

(5) The relationship to practice

The fifth requirement of an adequate approach to educational theory and research is that it must be practical, in the sense that the question of its educational status will be determined by the ways in which it relates to practice. In discussing the fourth requirement, we have already seen that an adequate approach to educational research or evaluation will involve participants not only in examining and transforming their own consciousness (including their understandings of themselves and their understandings of their situation) but also in arriving at their own decisions about action. Only under this requirement can the relevant interests at work in shaping action be "on the table" for those most involved and affected by any proposed action.

But the truth and rightness (appropriateness) of the views and decisions of the participant group cannot be tested other than in action — only in action can it be determined whether the factors frustrating their educational goals and purposes have been recognized and eliminated, and whether the obstacles which stand in the way of their achievement of their educational goals, which perpetuate ideological distortions, and which impede rational and critical work have been overcome.

This requirement rules out forms of educational research and evaluation which do not close the cycle of reflection and action — *forms of research and evaluation which serve decision making but which do not follow through the consequences of decisions in the situations for which the decisions were taken.* This requirement favours *formative* evaluation, but it will exclude (or treat as limited) *summative* evaluation[18] which only informs decisions about the nature and worth of a particular educational activity but does not follow the implications of the decision through into a new situation. It also excludes experimental and quasi-experimental approaches to research into and evaluation of programmes or activities. In general, it excludes as partial and potentially misleading those forms of research and evaluation which base conclusions on the analysis of situations other than the one for which a particular educational activity is adopted — as happens in forms of *product evaluation* which offer the educational "consumer" a guide to the relative value of particular educational activities, but which (of course) offer no guarantees that intended and desired effects will be achieved in the new situation. It also excludes as partial and limited many forms of *expert evaluation* — for example, evaluation by individual *experts,* by *inspectors,* or by *"blue-ribbon panels".* To close the cycle of evaluation and action, we require forms of research and evaluation which employ *cycles of feedback on the consequences of decisions in the situation for which they are taken* — for example, in the "spiral of self-reflection" of *collaborative action research.*

Very few forms of educational research and evaluation survive testing against the five requirements for an adequate educational science outlined by Carr and myself. Indeed, the range of surviving possibilities defies con-

[18] On the distinction between formative and summative evaluation, see Scriven (1967): 39-83.

vention in educational research and defies contemporary guidelines and standards for evaluation practice promulgated by professional evaluators themselves. Though few are likely to draw the conclusion that the literature of educational research and evaluation is now to be regarded as fundamentally flawed, it may be worth reiterating that the approaches conventionally employed in educational research and evaluation are not entirely without merit. On the contrary, despite their limitedness and partiality, most provide useful indicators of the nature and worth of educational activities and programmes. The key conclusion is that *almost all the methods mentioned are limited, partial and potentially misleading when employed alone, and thus a research study or an evaluation which relies too heavily on some of the cruder approaches will systematically ignore crucial factors to be considered in arriving at an understanding or an evaluation of educational activities, institutions and programmes in practice.*

Summary

In this section, I have examined approaches to educational research and evaluation against the five requirements of an adequate educational theory outlined by Wilfred Carr and myself. The range of approaches able to meet all five requirements turns out to be extremely narrow. Only a combination of interpretive forms of research and evaluation with collaborative self-reflection, and the approach of collaborative educational action research appeared to meet all five requirements. A central conclusion of this examination is that some of the conventionally-accepted approaches to educational research and evaluation might nevertheless make a contribution to a fully-justified educational science. To do so, however, they would need to serve interpretive and collaborative approaches to research and evaluation within the educational settings being studied.

On the arguments presented here, the most fundamental form of educational research and evaluation, and perhaps the only form able to contribute unequivocally to educational improvement, is the critically self-reflective approach of educational action research. But such a conclusion runs counter to convention in educational research and evaluation. Like many conventions, this one must be challenged. On the basis of the arguments presented here, we should conclude that a number of conventional approaches, usually employed as the sole means of studying schools, educational programmes and educational activities, should be regarded as limited, partial and potentially misleading when employed alone. In particular, we should conclude that educational research and evaluation and school monitoring should avoid relying solely or extensively on methods which:

- depend upon pseudo-objective tests or measures;
- focus too narrowly on aims-achievement;
- ignore the concerns and perspectives of teachers and other participants in the activities and settings being evaluated;
- do not examine the formation of participants' understandings, their concerns and perspectives, or their understandings of their situations;
- ignore the ways in which those processes of formation are conditioned by social constraints beyond participants' control;
- serve "decision makers" outside the settings in which the activities are to be conducted at the expense of rational and collaborative decision making within those settings; and
- break the cycle of reflection and action necessary for the rational development of education in the settings in which it occurs.

In our book, *Becoming Critical: Education, Knowledge and Action Research*[19], Wilfred Carr and I argued that some forms of educational action research can meet the requirements of an adequate educational science, showing how each of the five requirements we outlined was fulfilled.

Educational Action Research

In a variety of books, a number of researchers from Deakin University, together with a number of colleagues from elsewhere, have developed a view of educational action research

[19] See Chapter 7 "Action Research as Critical Educational Science".

(Kemmis & McTaggart, 1988a, 1988b). In some ways, our views derive from the ideas of social psychologist Kurt Lewin, the "father" of action research[20]; in other ways, they draw upon the thinking of Lawrence Stenhouse and his colleagues at the University of East Anglia[21]; in still other ways, they draw upon the Frankfurt School in critical social science.

In *The Action Research Planner,* we present a definition of action research:

> Action research is a form of *collective* self-reflective enquiry undertaken by participants in social situations in order to improve [the productivity,] rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which the practices are carried out. Groups of participants can be teachers, students, principals, parents and other community members — any group with a shared concern. The approach is only action research when it is *collaborative,* though it is important to realise that the action research of the group is achieved through the *critically examined action* of the individual group members. In education, action research has been employed in school-based curriculum development, professional development, school improvement programmes and systems planning and policy development (for example, in relation to policy about classroom rules, school policies about non-competitive assessment, regional project team policies about their consultancy roles, and State policies about the conduct of school improvement programmes) (Kemmis & McTaggart, 1988b).

We also outline the process of action research, involving a spiral of cycles of reconnaissance, planning action, enacting and observing the planned action, reflecting on the implementation of the plan using the observation data collected, replanning (developing a changed or modified plan), further action and observation, further reflection, and so on. These activities, we stress, aim at *improvement* of practices, understandings and situations, and they also aim at *involvement* of as many as possible of those intimately affected by the action in *all phases* of the research process.

In the *Planner,* we also set out some possible questions to be asked by intending action researchers as they plan and conduct their enquiries, linking each stage of the process (reconnaissance, planning, enacting and observing, and reflecting) to three interdependent domains of social life that we have come to regard as interdependent foci for the reconstructive work of social or educational improvement: language and discourse, activities and practices, and social relationships and forms of organisation.

In our recent thinking about action research, we have attempted to emphasise the importance of collaboration, believing that some action research work of the past has been rather too individualistic, too little aware of the social construction of social reality, and too poorly attuned to the social processes and politics of change. We have also begun to think of action research as a cultural process, in terms which may bear similarities to Freire's notion of "cultural action for freedom"(1970). We have begun to think of action researchers as groups of people who participate systematically and deliberately in the processes of contestation and institutionalisation, always at work in social and educational life, aiming to help in the improvement of social or educational life by the reflective and self-reflective ways they participate in it.

As some of these writings make clear, we have taken a critical and self-critical line in the evaluation of our own action research work, attempting to improve our practice of action research, our understandings of action research, and the situations in which we carry out action research through projects conducted in collaboration with others, i.e. to use the approach of action research for the development of action research.

Through this process, we believe that we have become clearer about the relationship between action research and other forms of educational enquiry, and perhaps somewhat clearer about the potential and limitations of action re-

[20] See, for example, K. Lewin, (1946) Action research and minority problems. *Journal of Social Issues,* vol. 2, pp. 34-46.

[21] In particular, Stenhouse's idea of the "teacher as researcher" developed in Stenhouse (1975). Another particularly influential source was the work of the Ford Teaching Project conducted under the direction of John Elliott and Clem Adelman; see, for example, Elliott and Adelman (1973).

search (though, as might be expected, our strong advocacy of action research is sometimes mistakenly regarded as incompatible with having a clear view of its limits as well as its strengths). In our view, it is important to continue to raise questions about action research and the philosophy of social science and education, and to continue to work not only at the level of the improvement of action research technique but also at the epistemological level, on the grounds that conducting our enquiries over this range is necessary to sustain the relationship between the theory and practice of educational research as well as between the theory and practice of education.

In the next section, some dimensions of the development of our thinking about action research are evident in a discussion of our roles as consultants, facilitators, moderators, and collaborators with others in education. Certain projects on Aboriginal education and teacher education provide some clear indications of the ways our thinking about the "facilitator's" role has changed. These matters relate to some of the issues of "first-person", "second-person" and "third-person" research discussed earlier.

Roles for Critical Educational Researchers: Lessons From Experience

For about ten years, I have been working with colleagues at Deakin University to develop a critical view of educational research through exploring the possibilities of educational action research. We have reported results of our enquiries in a variety of publications[22]. Increasingly, we find that our work turns over ground already tilled by others (for example, in the field of participatory research[23]). We find that we are at least as slow to learn from others' experience as others have been to learn from ours! To name just one case, I wish we had been able to learn from Orlando Fals Borda's[24] experience in Colombia before we had discovered similar things for ourselves — but perhaps we were not yet ready to understand . . . Throughout the world, there are people who do critical educational research and educational action research without those labels — and many have learned by experience rather than with the props and prompts of a formal theory of educational science.

With the best intentions and a familiar kind of academic self-importance, my colleagues and I at Deakin University began our work in educational action research by offering a kind of technical support service to teachers and others interested in researching their own practices. We saw ourselves as agents of change made by others. We helped teachers and parents to form questions about the problems and issues confronting them in their own situations, and offered advice on techniques of data-gathering which they could use in their investigations. In this phase of our work, we are inclined to regard ourselves as interfering if we intervened too much to shape the enquiries undertaken by teachers and others. In this role, we tried to leave all the power over the substance and direction of investigations with practitioners. We regarded any attempt to direct their action as an implicit disempowerment of those with whom we worked — the "real" researchers. We discovered that our "non-intervention" frequently deprived the teacher-researchers of relevant sources of theory in the research literature. Substantively speaking, the researchers had to learn everything for themselves, our approach seemed to say, or else, they would learn nothing worth knowing at all. In this way, we had structured the work so that it became excessively pragmatic — a kind of trial and error learning that refused to acknowledge the structures that deprived these teachers

[22] See, for example, Carr and Kemmis (1986). Kemmis and McTaggart (1987). Kemmis, S. and McTaggart, R. (1987). Kemmis (1987) "Critical Reflection", Chapter 5 in M. Wideen and I. Andrews; Kemmis, S. (1985) "Action Research and the Politics of Reflection", Chapter 10 in D. Boud, R. Keogh and D. Walker.

[23] See, for example, Hall, B. (1987) "Knowledge as a Commodity and Participatory Research", in Kemmis and McTaggart (1987).

[24] For a sophisticated account of the tension between North American action research and the possibility of a science of the proletariat, see O. Fals Borda, (1979) Investigating reality in order to transform it: the Colombian experience, *Dialectical Anthropology*, vol 4, March, pp. 33-55 (Reprinted in McTaggart, R. *et al.* (1987).

of intellectual resources for change and, worse still, of an understanding of the ideological structures (including false consciousness) that made it difficult for them to reconstruct their understandings of their situations. The social and political limits on what they could achieve seemed arbitrary; they frequently described themselves as prevented from transforming their work and their situations by arbitrary "politics" rather than by political, economic and cultural structures within the established social and educational order. We had made them acutely aware of the limits of their power to change things, at worst, confronting them with their alienation without offering an analysis of how it was produced by wider historical, social and political dynamics.

A second phase of our work entailed taking a more active educative role. We saw ourselves as "facilitators" and then "moderators" of the action research process, again offering advice and support on research techniques, but also beginning to offer theoretical perspectives which could link the work the researchers were doing to relevant literatures about their substantive problems and about ideology. We still believed that we should not intervene too strongly lest the researchers lose intellectual control of their own research work. In the final analysis, it was to be their work and not ours. Our language of "empowerment" rested heavily on an individualistic theory of empowerment as authentic understanding which could underpin *individual* praxis (informed, committed action). We saw ourselves as making a commitment to the work of these researchers, but we knew that, in their own situations, they would have to be able to justify their understandings and their actions for themselves — so we left the responsibility for final decisions with them. In this phase, we found ourselves in a difficult and somewhat hypocritical position — we wanted to share the commitment, but we did not share final responsibility for the action taken by the researchers as they learned by doing.

Each of these two phases of our work was marked by an "us-them" relationship between our Deakin group and the teachers and other researchers with whom we worked. At the risk of putting it too picturesquely, one could say that our theory of the relationship was one in which we were the avant-garde and they were the masses; we were the enlighteners and they were the ones to be enlightened. At a seminar at Deakin University in 1986 (McTaggart and Garbutcheon-Singh, 1988) in which the Deakin group and some colleagues from elsewhere reviewed our theory and practice of the previous six or seven years, participants finally penetrated the deception (and self-deception) involved in our understanding of our research relationships ("us"-"them") during these first two phases. We began to understand more clearly what it means to say that in the process of critical action research, there is room only for participants. In genuinely critical and self-critical research, all participants must take on genuinely collaborative roles, as members of, not outsiders to, the research work, even if roles within the group are differentiated. The projects should be collaborative projects governed by open decision making in a group committed to examining its own values, understandings, practices, forms of organisation and situation.

In the third phase, we have placed far greater emphasis on communitarian values and the importance of the research collective. Taylor (1982) suggests that a community exists when, (1) people hold in common shared beliefs and values; (2) relationships between people are direct and many-sided, not indirect as between people isolated from one another, nor role-specialised and narrow; and (3) the relationships between people are characterised by balanced reciprocity, in which there is a direct two-way flow of action in which individual actions are seen as benefiting all, and in which there is a sense of solidarity, fraternity and mutual concern. To be a *critical* community, a group of people would first of all strive to meet these conditions; in doing so, it would come to understand how contemporary culture operates from without to mitigate against the formation and maintenance of communities; and in doing so, it would also become self-critical, discovering how the habits and expectations of its members, learned in cultures decreasingly characterised

by these features of "community", operate from within to prevent a group from establishing itself as a community in Taylor's sense.

This third phase of our work has allowed us to reconcile our interests in participatory action research with broader questions of ideology-critique in curriculum studies, especially theories of social and cultural reproduction and transformation in education. Defining our conception of critical theorising in curriculum, Lindsay Fitzclarence and I (1986) wrote:

> The mode of curriculum theorising we envisage can be realised in a participatory democratic process of collaborative research undertaken by local communities (of teachers and other participants in the educational process) who aim, on the one hand, to relate their theory and practice in constructive and cumulative cycles of action and reflection, and, on the other, to locate the specific educational values and practices of their schools and classrooms within the wider history, traditions and forms of organisation of their society. These two aspects of collaborative critical curriculum theorising are integrated in the work of emancipatory action research which sustains the critical and self-critical analysis of concrete and particular cases of the curriculum and curriculum development work (in classrooms, schools and in society generally) in a particular community as manifestations of more general historical processes of social and cultural reproduction. The products of this work, generated and continually revised as it proceeds, emerge in the form of ideology-critiques which dialectically incorporate a shared "autobiography" of the local community of participant researchers within a wider history, locating collaborative self-reflection interpretively in more general social analysis, and locating and shared human agency of political action in a deepening analysis of social structure (p. 129)

Now these values are not easily realised. In our own work at Deakin, we have begun to do less of the kind of "facilitatory" work we used to do with groups of teachers and others, "teaching" them about action research and techniques for gathering and analysing data from their own settings. We have attempted to work in situations where the role distinction between "facilitator" and "researcher" can be transcended, where we can be co-researchers with others on problems and issues we share[25]. This shift in roles can be illustrated through the history of a series of projects we have undertaken in Aboriginal education and teacher education.

From facilitation to collaboration

Since 1983, I have worked with Deakin colleagues[26] on a series of projects in Aboriginal education and teacher education in the Northern Territory. The first of these projects involved John Henry and myself acting as "facilitators" to staff of Batchelor College, a teacher education institution preparing Aboriginal teachers. The College wished to undertake a self-evaluation as a preliminary step in the development of a new curriculum for accreditation. The project had two faces: first, it entailed making the existing curriculum problematic through collection of disparate staff and student views about it and through the exploration of the nature and effects of teaching and learning in the College through action research; and second, it involved the articulation of principles (critical theorems, perhaps) upon which the new curriculum could be based[27]. In this

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[25] A recent example was in a course on school self-evaluation in which Robin McTaggart, Ian Robottom and I worked with teachers, education consultants and others to prepare materials for teacher and parent organisations confronted with retrogressive proposals (from a project team of the Victorian State Board of Education) for intrusive mechanisms for school monitoring and accountability. In this case, we were course organisers, but we worked collaboratively with the group as a whole to define the problems and issues through reference to relevant literature, try out approaches in their own work settings; and (ultimately) produce a resource pack of materials to inform debate about school monitoring among affected groups.

[26] Including Rhonda Bunbury, Frances Christie, Jenny Grenfell, Warren Hastings, John Henry, Robin McTaggart, Neil Pateman and Helen Watson.

[27] The following are examples of the kinds of principles or theorems we strove to develop:

- Aboriginal self-determination is of fundamental importance politically, socially, historically and culturally;
- Aboriginal and non-Aboriginal Australians have different ways of life and different ways of understanding the world, and schooling should actively respect both ways;
- Aboriginal languages are fundamental and must be maintained and supported in schooling (as well as by other means available to government);
- Aboriginal people are, by and large, better equipped by their experience to be interpreters of bi-culturality than Anglo-Australians and are likely to be able to use this knowledge more tellingly in research into bi-culturality and "both ways education";

assisted self-evaluation, we worked as facilitators of the problematising and action research process, helping the staff collect views (their own views, students' views, and the views of senior members of some of the students' communities) on the nature and effects of the existing curriculum, and helping staff investigate the potential and limitations of new teaching-learning methods through action research into their own teaching. These investigations frequently involved testing out possible new approaches to teaching and learning which could provide new bases of principle for the new curriculum (for example, the principle of active respect for students' first languages, knowledge, culture and communities; negotiation of the curriculum between teachers and students to determine the specific content of teaching and learning within a framework of non-negotiable course requirements). Throughout, our role was as "outsiders", "moderating" and mediating the concerns and interests of different groups. Our role was one of technical support and substantive independence on the issues; it was premissed on the view that the staff would only become committed to developing and sustaining a new curriculum if they took all the major substantive decisions about how the new curriculum could and should develop.

The contradiction implicit in such a role soon became apparent. As articulators of emerging principles and supporters of innovative approaches to teaching and learning, we not only confronted college staff with their own differences and competing and conflicting interests, but, based on our discussions with students and members of their communities, we also became identified with certain kinds of innovative approaches. Increasingly, we were perceived as spokespersons for particular approaches, not as acting neutrally towards any and all suggestions. We were increasingly perceived as "captured" by a specific group on the staff. And, although we took no part in writing or presenting it, the new curriculum reflected many of the preferences we had formed in the assisted self-evaluation process.

During the assisted self-evaluation, the Principal of the college suggested we visit some of the tradition-oriented Aboriginal communities who sent students to Batchelor for teacher education. As we did so, we were invited to work with Aboriginal teachers and assistant teachers in some of the community schools — normally small schools serving remote communities, and staffed by a majority of non-Aboriginal teachers assisted by a number of Aboriginal "teaching assistants". We did so by helping to organise "action groups" of Aboriginal staff — groups who could organise their own professional development activities as part of a systematic process of their teaching and learning — and as a means of stimulating stronger community participation in school decision making. The Aboriginal staff involved made organisational links to community councils, and explored ways of improving the work of the schools so that it would more nearly reflect the culture and aspirations of their communities. We were only occasional visitors to these schools, but in three schools, the action groups thrived, exerting a strong influence on the schools themselves. In these cases, Aboriginal teachers and their communities took clear responsibility for the developments, and began to relate the role of the action groups to clan structures and patterns of interaction in ways we could only begin to understand.

This pattern of activity suggested that Batchelor and the community schools could together explore the power and limitations of a concept of "both ways" education[28] — educa-

• schooling has been an instrument of white colonialism and the destruction of Aboriginal culture and society; policies of "assimilation" and "integration", while less overt and more respectful of Aboriginal persons than the practices of cultural supremacy they replaced, may ultimately have the same practical effect (the destruction of Aboriginal cultures and communities).

[28] The concept of "both ways" education was offered by the Aboriginal teachers. As far as we are aware, it developed from the concept of "both ways" religion developed by some missionaries in North East Arnhem Land in the 1960s. According to this view, communities could retain their own religious beliefs while also adopting Christianity. This possibility seems somewhat remote to the non-Aboriginal observer familiar with the history of "modernisation" and "development" (see, for example, Berger et al. [1973]). The problem, however, is more acute for the Western observer accustomed to thinking in dualisms — either Aboriginal or non-Aboriginal but not both. From an Aboriginal perspective, however, the possibility of retaining and strengthening two

tion which would help Aboriginal students to gain access to non-Aboriginal knowledge and culture, and to the "mainstream" (that is, Anglo-Australian-dominated) economy, while also actively respecting and nurturing the dynamically-evolving and changing traditional culture and economy of these communities. In the schools and in some aspects of the college's work (notably through its Remote Area Teacher Education programme[29] which provided external studies in community schools for Aboriginal assistant teachers) this possibility was enthusiastically received, and investigations begin into how 'both ways' education might be articulated, understood and realised[30].

But this possibility required quite dramatically changed research relationships. In a culture and economy like Australia's, in which non-Aboriginal modes of life and being are all too readily understood as "the dominant culture", non-Aboriginal researchers have only a very limited understanding of Aboriginal knowledge and culture, and are poorly equipped to articulate the relationship between Aboriginal and non-Aboriginal modes of understanding and being. On the other hand, most Aboriginal teachers have a good understanding of both Aboriginal and non-Aboriginal modes of life and being. Their "bi-cultural" experience equips them far better for investigating the potential and limitations of "both ways" education. In order to explore the concept, it was necessary for us, non-Aboriginal researchers, to develop a new humility about how data could and should be gathered, and about what was important for the development of the community and its educational needs. Much of the research could only be undertaken by Aboriginal men and women with standing in their clan and family groups. At the same time, non-Aboriginal researchers were in some ways better equipped to deal with some of the administrative relationships of the non-Aboriginal education systems governing the schools, with aspects of curriculum, and with the history and character of schooling as understood from a non-Aboriginal perspective. The project has required coordinating enquiries across the presumed cultural "divide", and drawing a widening range of Aboriginal and non-Aboriginal people into the enquiry process.

This approach to educational enquiry has been richly realised in the work of Helen Watson, who, working with Aboriginal teachers and communities in the desert community of Lajamanu and the coastal community at Yirrkala in North East Arnhem Land in the Northern Territory, has begun to explore the problems and possibilities of "both ways" education in mathematics[31]. For example, she has shown that the epistemological and ontological presumptions of Aboriginal languages and English

alternative modes of life in relation to one another is not remote or unlikely — indeed, moiety and gender relationships express and engender a highly dialectical notion of the unity of opposites through which opposed categories retain and develop their own integrity and regenerate each other through interaction. Thus, from an Aboriginal perspective, "both ways" religion could have the potential for strengthening traditional religion as well as offering new modes of religious life (though this potential may not be realised, or it might be denied through discovering a hidden assimilationist motive). Similarly, "both ways" education could have the potential for offering access to new modes of life while retaining and developing traditional modes of life, including traditional modes of education.

[29] Leon White, Glenda Livett (now Shopen), Richard Geeves and Vicki Shardlow of Batchelor College's Remote Area Teacher Education (RATE) program and Bakamana Yunupingu of Yirrkala Community School took special responsibility for developing the idea of "both ways" education in the context of RATE. See also Kemmis (1988).

[30] The principles for the operation of RATE were articulated by the Batchelor RATE staff in July 1987 as follows:

(a) RATE programs should only operate with the full support and involvement of the local community.

(b) RATE programs should only operate with the full support and involvement of the local Principal and the staff of the local community school.

(c) RATE programs should only operate in schools in regions where the Regional Superintendent has supported the establishment and operation of programs.

(d) In accordance with the Batchelor College 1985 Reaccreditation Document, RATE programs primarily operate to increase the confidence and contribution of the Aboriginal participants as educators in and for their communities.

(e) In accordance with the Batchelor College 1985 Reaccreditation Document, RATE programs require a commitment by all of the involved non-Aboriginal staff to the goal of self management and self determination for Aboriginal communities.

(f) In accordance with the Batchelor College 1985 Reaccreditation Document, RATE programs are required to implement Stage 1 of the Batchelor College teacher education program.

(g) After negotiation for the commencement of a Program, RATE programs require schools to undertake to release RATE tutors for activities that relate to their roles as RATE tutors.

(h) RATE programs, by their very nature must provide for the Aboriginal educators who are participants in the programs to develop strategies to deal with a wide range of issues concerned with the delivery of educational services in their communities.

[31] Watson's work in this field began in explorations into language and mathematics among the Yoruba in Nigeria.

are quite different, and that, as a consequence, the teaching of number presents special difficulties. On the side of the conventional school curriculum, her Aboriginal co-researchers have therefore decided to try teaching number only after children have a reasonable grasp of English — as late as the fifth grade of primary schooling. Watson has now become an active participant in a long-term development project assisting the staff of the Yirrkala community school to develop a "both ways" curriculum, and, along with other Aboriginal and non-Aboriginal members of the school staff and the community[32], has helped to establish a lively community of researchers exploring the possibilities of "both ways" education in the school.

At the same time, Watson and I have been consultants to projects conducted by the Laynhapuy Community Council in North East Arnhem Land, aimed to support the development of Homelands Centres Schools, away from the "artificial" settlements created by missions or governments. In these schools, the communities argue, it is possible to retain and develop the traditional modes of life of Aboriginal clans and families, while at the same time conducting non-Aboriginal schooling. Our role in the Homelands Centres project was not the collection of data; that was the responsibility of an Aboriginal research team, with Bakamana Yunupingu as the primary data-gatherer, under the supervision of Daymbalipu Munungurr (an elder of one of the clans and a senior member of the Laynhapuy Council) and Wulyanbuma Wunungmurra (the School Council Chairperson). Our role was to help relate the views of the clans involved to the concerns of non-Aboriginal authorities, and to help with the editing of the final report of the project.

This example of the development of "both ways" education offers interesting insights into the nature of critical educational research. Because it is "cross-cultural", it admits that researchers from the two cultures have more or less limited understandings of one another's knowledge and cultures. The "both ways" education projects can be treated as a limiting case in critical research which admits that one's own understandings, practices and modes of life and those of others are different. It therefore requires a collaborative effort which actively respects differences and attempts to locate them with respect to one another in a cognitive, social, cultural, economic and political framework. Yet it is neither assimilationist (reducing one culture to the terms of the other) nor relativist (adopting a static view of the two cultures as different but, in some ahistorical and apolitical sense, "equal"). It adopts a dialectical stance, attempting to understand the epistemological bases, the history and the political economies of the two cultures in relation to one another, and to find means by which the two can be mutually-generative (generative both for themselves and each other).

This work, in our view, meets the five formal requirements of a critical educational science outlined earlier. First, it rejects positivist notions of rationality and truth in favour of a dialetical view. In particular, it does so by recognising and exploring Aboriginal epistemology and its relationships with non-Aboriginal epistemology. Moreover, it explores the dialectical thinking within Aboriginal knowledge and culture — a notion which is at its most explicit in moiety and gender relations in Aboriginal culture, but can also be found in the modes of life through which Aboriginal law is lived (for example, in relationships between clans in ceremonial matters).

Second, it employs the interpretive categories of those involved — both Aboriginal and non-Aboriginal participants. These concepts include notions drawn from the non-Aboriginal language of schooling ("curriculum", "teaching", etc.) and notions drawn from Aboriginal languages (in the case of the Yirrkala projects, a concept like "gama" which has explicit sacred and secular reference but which can also be used to refer to the relationships between different ways of life and different kinds of knowing). It also employs the interpretive categories of those involved in a more usual sense — the sense of treating as problematic the key ideas

[32] Notably Leon White, a Batchelor College staff member offering a Remote Area Teacher Education program at Yirrkala, and Bakamana Yunupingu and Greg Wearne, Co-Principals of Yirrkala Community School.

used by participants in the projects in their own language and discourses about schooling, education, community development and the like.

Third, the projects attempt to identify and overcome distorted self-understandings through seeing how the work and life of the schools involved are shaped by broader cultural, economic and political conditions. In relation to understanding schooling, for example, this has entailed seeing how the conventional non-Aboriginal language and practices of schooling serve particularly non-Aboriginal educational purposes, and how the language of schooling has frequently caused Aboriginal people to understand themselves in distorted ways (for example, as lacking mathematical ability or even the ability to form hypotheses, or as preferring modes of learning which exclude the possibility of attaining the levels of schooling necessary if Aboriginal people are to achieve full professional roles and responsibilities in their own communities and community schools). The projects have also suggested ways in which participants could overcome such distorted self-understandings (for example, by recognising the cultural location of non-Aboriginal "school knowledge", by demonstrating the power of high level Aboriginal knowledge in reaching understandings of education and schooling, by locating non-Aboriginal knowledge in relation to Aboriginal knowledge, by showing how the use of Aboriginal ideas can lead to productive and valued changes in the organisation of teaching and learning, and the like).

Fourth, the projects identify aspects of the social order which frustrate change and the pursuit of rational goals. In particular, they have demonstrated how the imposition of non-Aboriginal views of schooling on Aboriginal people has actually limited the achievement of the educational aspirations of Aboriginal students and communities. By relativising these non-Aboriginal views (comparing and contrasting them with Aboriginal views), it has been possible to identify ways that the educational aspirations of Aboriginal people can be made more achievable (for example, by delaying the teaching of number until the upper grades of primary school, or by supporting the development of bilingual programmes and the development of Homelands Centres education).

And finally, the projects recognise that the truth status of developing educational theory — the theory of "both ways" education — is tested in practice. The projects proceed through action research investigations which explore new possibilities and take a critical view of how they turn out in practice. Indeed, Wulanybuma Wunungmurra, the Yirrkala School Council Chairperson, is so committed to this principle that he is reluctant to allow the structure of the School Council (developed through an association between action groups and men and women elders of the clans in the community) to be seen as a model for development by Aboriginal communities elsewhere, because it will take at least five years for the power and limitations of the model to be tested in practice.

Some tentative conclusions about the politics of critical educational research

The projects in Aboriginal education and teacher education we have undertaken in the Northern Territory exemplify the shift we have tried to achieve from "facilitatory" roles to collaborative ones. They have shown how we can establish modes of work which recognise and respect different interests. I described these projects as a kind of "limiting case" for critical research, in which the difference between interests was marked by a kind of cultural divide. In a sense, however, these are also easier cases, where it is easier to understand that one does not fully understand the culture and the interests of the "other". It is easier, too, to know that one stands in opposition to established modes of interaction between Aboriginal and non-Aboriginal people in these communities, and in opposition to entrenched interests in the assimilation of Aboriginal culture to the dominant culture of Anglo-Australia.

What is encouraging about these projects is that they have made a substantive contribution to Aboriginal education and teacher education. They have given Aboriginal teachers and their

communities a central role in their own professional development. They have changed the work of the community schools involved, in ways endorsed by Aboriginal and non-Aboriginal teachers and by the schools' communities. But they have also provided tangible benefits to non-Aboriginal people working in these settings. For example, they have offered models to Batchelor College for the development of its curriculum as a "both ways" curriculum (for example, in its developing Remote Area Teacher Education programme). And the notion of "both ways" education has provided both form and substance to the Deakin University Aboriginal Teacher Education programmes (one offered in association with Batchelor College in the Northern Territory, and another offered to Aboriginal students at Deakin in Victoria) through which we at Deakin have been able to explore and develop Aboriginal teacher education in our own practice.

Concluding Comment

In this paper, I have very briefly outlined a view about education and its role in the improvement of society. Since the eighteenth century, there has been a strong belief in Western cultures that social improvement would come with the extension of rational thought into all domains of human and social life. In some ways, perhaps, that faith has been challenged as our views of rationality have proved insufficiently robust and comprehensive to meet the variety of problems and issues of human and social life. Yet the view that a good society is also an *educative society* remains strong — and properly so. The developments of contemporary social science towards the critical view may be seen as extensions of this view. They aim to link the educative processes of research and enquiry to the life of society — including the life of education in educational institutions. The development of educational action research can be seen as an expression of this commitment.

While promising, these are small and precarious steps; they are also double-edged. These projects also demonstrate the dangers of compromise and cooption. They make teacher education institutions more accessible and acceptable to tradition-oriented Aboriginal people, but in doing so make the impact of those institutions on Aboriginal communities the more powerful and pervasive. We ask ourselves, "are we the best friends or the worst enemies of our Aboriginal co-workers in this process?" It is significant that some of our most promising examples of critical educational research are in Aboriginal education and teacher education — widely regarded by teacher educationists in Australia as marginal to "mainstream" education and teacher education. Our experience in our conventional teacher education programme at Deakin has been that it is much more difficult to overturn the assumptions, expectations, habits and traditions which support conventional teacher education as a process of transmitting a "craft" to student teachers. We have had some successes in the mainstream programme but our record is far from satisfactory. Since we lack a conspicuous record of success in changing our own "mainstream" programmes, our work in Aboriginal teacher education leaves us with the uneasy feeling that we may have been part of a process through which the distinctive circumstances and interests of Aboriginal people and communities have been more or less adequately incorporated into the existing institutional means for teacher education in Australia, using a new approach to teacher education to achieve an accommodation previously not possible. Once articulated, this question in its turn can be subjected to continuing enquiry by teachers and students on the programme — thus giving us an opportunity to explore still further the nature, potential and limitations of teacher education as we usually provide it *and* the "both ways" teacher education offered to Aboriginal students.

It is one thing to desire the development of an educative society, and to desire educative forms of educational research, and another thing to attain them. As our account of our steps towards a more critical and self-critical approach to educational research may have shown, we have learned a little as we have gone

along — and that alone suggests that we have much, much more to learn. A form of research that is participatory and collaborative, let alone critical and self-critical, must evolve slowly if its development is to follow its own principles. Though to some it seems no more than another fad, there has been a kind of revitalisation of the development of action research as a "movement" in a variety of places around the world. Perhaps its re-emergence as a movement is enough to ensure its demise — at least by that name. Since it touches upon fundamental issues of science and of social and educational life, I am not inclined to think it will disappear, though the labels we apply to it will undoubtedly continue to change.

I am grateful to you for your invitation to speak to your conference — your invitation is a kind of proof that you are addressing problems to which at least some of my concerns are relevant. I hope we will have further opportunities to work together in the development of action research and the improvement of education.

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Development of Research Skills to Improve School-Focussed Research

John Izard

ABSTRACT

School-focussed research may be concerned with improving classroom learning, with ensuring that a teaching team functions effectively, or with monitoring learning processes and identifying changes that have occurred. Improvement of such research requires particular skills — being able to recognize the personal nature of learning, and to interpret evidence about learning. Development of research skills requires a particular type of professional development to enable teachers to investigate and assess learning in their own classrooms and to facilitate cooperative studies with researchers. Examples of such activities are provided.

Introduction

It is always a pleasure to return to Singapore and to participate in the activities at the Institute of Education. I am pleased that I have this opportunity to meet old friends and to greet new friends from Singapore and elsewhere.

In talking about school-focussed research I recognise the crucial importance of words and their meaning. For example, the notion of pastoral care in the educational context is not the same as care of a pasture, nor is clinical observation the same as observation of a clinic. We must recognise also that inferences from events may vary from person to person. To demonstrate this I ask you to describe the picture I am about to show you. This description should be your own personal account, without reference to the perceptions of others around you. This picture is shown as Figure 1.

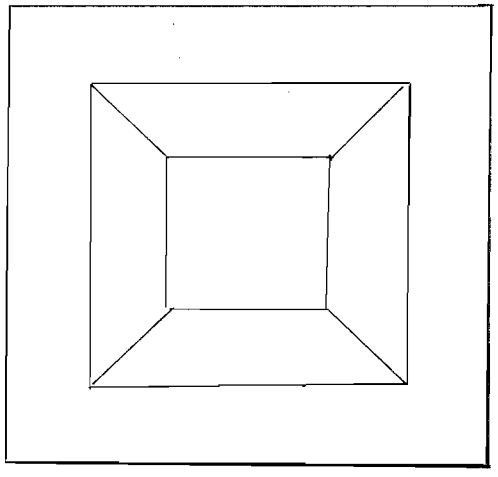


FIGURE 1 Diagram to be described.

Now that you have described the picture, we will list some of the descriptions given by this audience. Some people saw a picture frame while others saw four trapezoidal shapes. For some of the audience the figure suggested a

square tunnel going into the board; others considered that the square tunnel was coming out of the board. Some perceived the figure as a square pyramid with the top lopped off viewed from above. I hope you will agree that inferences from the same evidence will vary and that there is a personal dimension in the way one assigns meaning to words and visual material.

In his keynote address on 'Improving Schools and Teaching through Educational Action Research' yesterday, Stephen Kemmis emphasized the personal nature of the 'action research' enterprise. He characterised 'action research' as 'first person' research involving an understanding of 'me', 'we', and 'us'. This type of research was contrasted with qualitative research ('second person' research to understand 'you') and quantitative research ('third person' research where people are the objects of the research). In my view, his research typology may be represented by Figure 2. While I accept that some types of research project are consistent with this perceptive view, I would argue that 'action research' is qualitative where the teacher is investigating presence or absence of particular qualities in the children, and quantitative when the teacher counts the events or reports proportions or averages, as shown in Figure 3. Qualitative and quantitative research can be done by 'us' and I will return to some examples later in this paper.

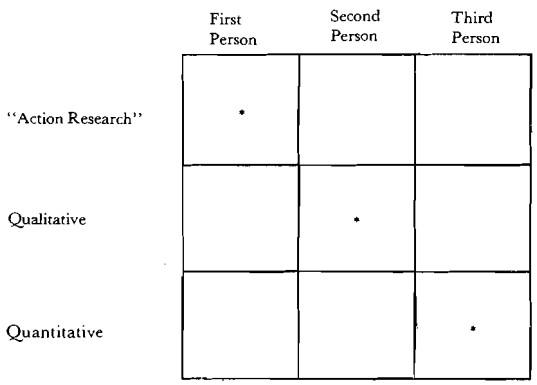


FIGURE 2 Research Typology (after Kemmis)

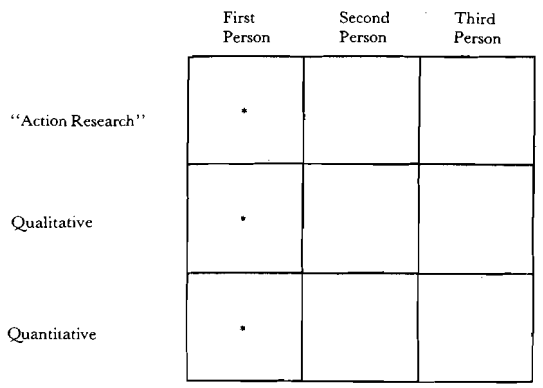


FIGURE 3 Typology for First Person Research

Now I propose to engage each of you in some educational tasks (or tests) so that each person responds to my tasks on a one-for-one basis. To do this you will need to prepare a worksheet like this (see Figure 4).

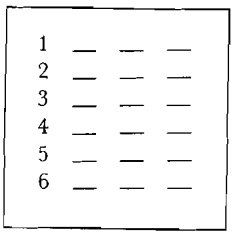


FIGURE 4 Sample Worksheet

When I show you the first three pictures, your task will be to choose the two that seem to you to be most alike. If you think the first two are most alike then you would show your response as: 1. / / __ .
If you think the first and third are most alike then your response would look like: 1. / __ / .
If you think the last two are most alike then your response would look like: 1. __ / / .
The first set of pictures looks like this (see Figure 5).

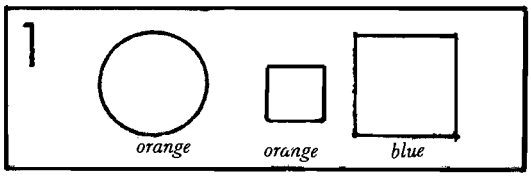


FIGURE 5 First Set of Three Pictures

Now choose the two pictures that seem to be most alike as I show each set in turn. (Figure 6 shows the remaining five sets of pictures.)

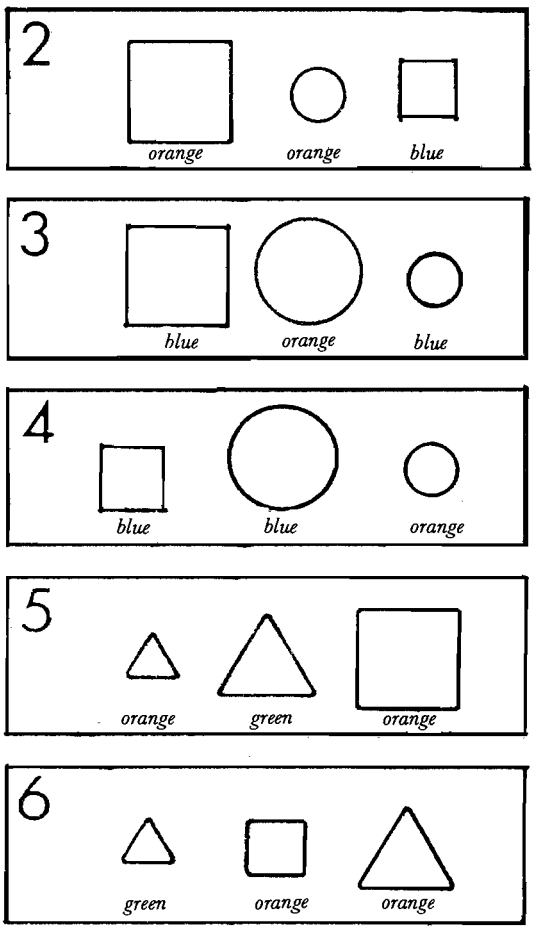


FIGURE 6 Further Sets of Three Pictures

Let us reflect on what the evidence suggests. I would not expect every set of responses to be the same as there is no one set of right or wrong answers. The answers you gave were right for you (if you were engaged as requested). If you had the pattern shown in Part A of Figure 7, I

Part A Colour	Part B Shape	Part C Size
1. / / _	1. _ / /	1. / _ /
2. / / _	2. / _ /	2. _ / /
3. / _ /	3. _ / /	3. / / _
4. / / _	4. _ / /	4. / _ /
5. / _ /	5. / / _	5. _ / /
6. _ / /	6. / _ /	6. / / _

FIGURE 7 Response Patterns to Infer Colour, Shape, and Size.

believe you had 'colour' in mind, even though you may not have used the term 'colour' explicitly. Your responses were personal, and on the evidence of those responses I have drawn an inference. Notice that those who had this pattern were consistent even though the colour green had not been seen in the first four sets of pictures. If you had the pattern shown in Part B of Figure 7, I believe you had 'shape' in mind, even though you may not have used the term 'shape' explicitly. Similarly, if you had the pattern shown in Part C of Figure 7, I believe you had 'size' in mind.

It is possible that some of you had other patterns. For example, you may have chosen the left-hand two every time. Others may have a mixed pattern because they chose to use, say, colour followed by shape, or some other cycle of concepts. With this example I have shown how it is possible to explore educational concepts on a personal basis even though I have had the constraints of a conventional lecture theatre and a large audience. If my task was to see which cues were salient for each person, then I could ensure that individual teaching materials used the concept that was likely to get the attention of the student. Why is this important? Suchman and Trabasso (1966) found that young children made fewer errors on single-cue tests involving the preferred cue than when they were tested on the non-preferred cue. The same study reported a discrimination learning experiment where children who preferred

colour learned a problem involving colour quickly, but were slow in learning a problem involving shape. The opposite ordering of learning rates was obtained with children who preferred shapes.

Some of my research has used such ambiguous stimuli to explore cue preference. Children aged from 9 to 11 years have a very consistent preference for shape over size and colour (Izard, 1973). This consistent preference has been confirmed for children aged from 11 to 12 (Izard, 1979).

Some Features of School-Focussed Research

In my view, school-focussed research addresses one or more of a number of concerns. It may be concerned with improving classroom learning, with "management" of groups of teachers (as in a school), or with monitoring learning and identifying changes that have occurred. I propose to give examples of areas which address such concerns and to illustrate some of the examples by reference to some of my own research.

Improving Classroom Learning

Such research may be directed at clarifying syllabus intentions, or modifying a syllabus or course to meet unanticipated difficulties experienced by students. It may involve development of more appropriate teaching strategies, or refinement of teaching materials. Such research can be carried out by many agencies — the teacher in the classroom, the writers of the curriculum, the developers of instructional material including textbook authors, teachers of teachers, or researchers. The researchers sometimes have the opportunity to explore aspects that the classroom teacher does not have time to explore. However, the important elements of such research have to include trials of alternatives under comparable conditions, a gathering of evidence on the relative success of strategies, and judgments about this evidence in order to reach some conclusion. An example will illustrate each of these points.

Some teaching materials were being developed for mathematics at about the age 12 level. What were the features of the diagrams that assisted children in reaching the concepts that were the target of the teaching? In this investigation, children were given the task of identifying the concept the teacher had in mind. Each student tried to choose from three diagrams the two that were alike with respect to that concept. The student was informed whether he or she was correct. (A smiling face stamped on their sheet indicated a correct choice; a sad face indicated a wrong choice.) Students were assured that the teacher-researcher would be consistent, and were warned that their guess could be correct for the wrong reason. Students did not have to describe the concept the teacher had in mind. If they could anticipate the correct pair of diagrams in three successive instances, it was concluded that the concept had been identified. Although the type of diagram and the concept to be identified was fixed for a particular student, the format of the diagrams varied and so did the concept the teacher had in mind. Diagrams were presented as a solid on a grid, as an outline, or as a broken outline, as shown in Figure 8. The concepts to be identified were height, perimeter, or area.

The results of this investigation are illustrated in Figure 9. The type of diagram was not important when height was the concept to be identified. When perimeter was the concept to be identified, those who had the broken-outline diagrams were successful after a small number of examples, while nobody who had the grid diagrams was successful when trials terminated after 15 examples. Those who had the solid-outline diagrams took a longer sequence of examples before identifying the concept.

The reverse applied when area was the concept to be identified. Those with the grid diagrams were successful after a small number of examples, and those who had either the solid-outline or broken-outline diagrams took a longer period to achieve success in identifying the concept.

This example of 'first-person' research (from Izard, 1979) demonstrates that an investigation involving both qualitative and quantitative aspects can be carried out in the classroom by a teacher. The results suggest that use of grids will make it more difficult for children to learn

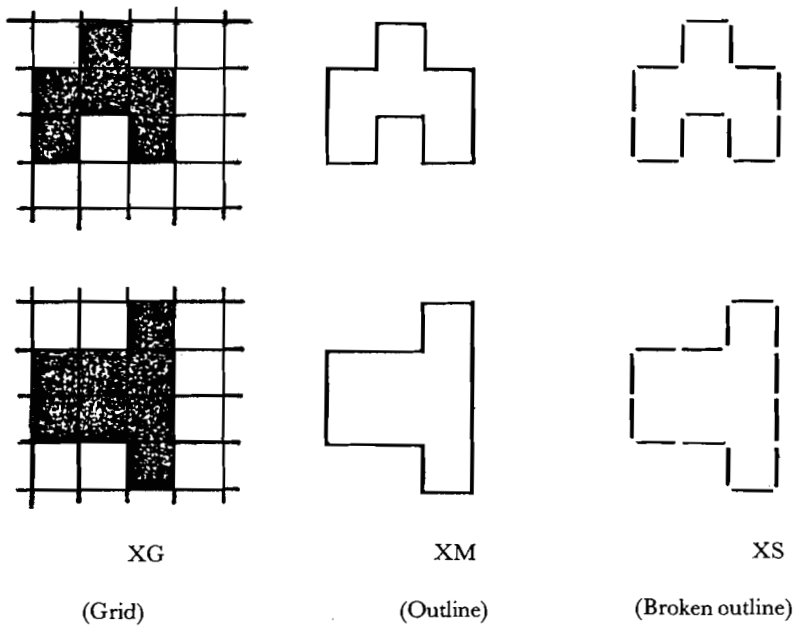


FIGURE 8 Stimulus Objects Used in Tests XG, XM, and XS.

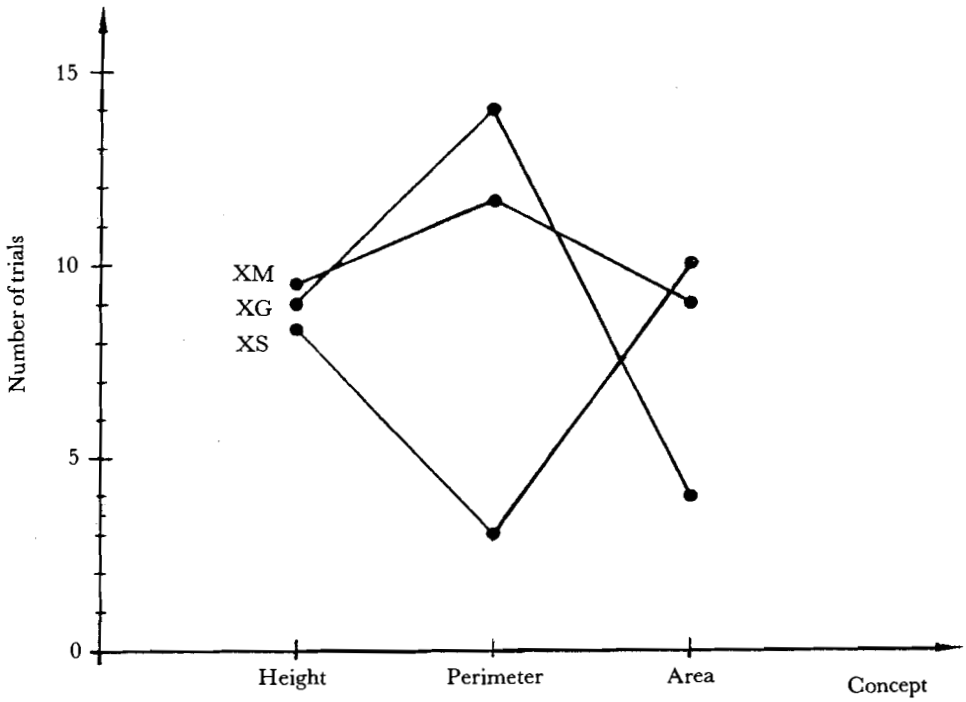


FIGURE 9 Profile of Means for Each Concept.

about perimeter but will facilitate the learning of area concepts. Conversely, the use of unit-length broken outlines will facilitate the learning of perimeter concepts but will make it more difficult to learn about area.

Concerns about Management of Groups of Teachers

School administrators have the responsibility of ensuring that the teaching team functions effectively. Professional development for self and colleagues may serve to inform staff of new developments, to disseminate teaching strategies found successful elsewhere, to improve administrative skills of senior staff, and to motivate and support teachers in their teaching role. Such developments may facilitate the identification of problem areas, suggest solutions to such problems, and assist in the implementation of policy changes. The Australian Council for Educational Research has recognized that the professional development of teachers includes providing opportunities to develop skills in assessment, in programme evaluation and in curriculum development, and is planning to offer such activities in Australia, the South Pacific and Asia.

Concerns about Monitoring Learning and Identifying Changes That Occur

These concerns lead to a whole variety of behaviours focussed on gathering and interpreting evidence. Action research, as an attempt by a teacher to grasp the interplay of classroom processes, is but one example. Many examples can be observed at the primary, secondary, and tertiary levels. Surveys, tests, and checklists are used by teachers to marshal information and to describe the current status of pupils in a learning context. This concern to describe each pupil's current standing should not be seen as a static and sterile part of an assessment programme. The essential purpose is to assess progress towards targets **and then to implement a learning-teaching programme to facilitate progress towards those targets.** Without this notion of the facilitation of progress, assessment cannot serve its most valuable purposes.

Sometimes teachers appear to administer tests to students on the grounds that more testing is better for them. Just as taking the temperature of a patient more frequently will have a negligible effect on reducing a fever, administering many tests will have a negligible effect on the student's lack of knowledge. The teacher's planning of further instruction on the basis of what the student already knows is the powerful element. If such actions are **not** taken, many assessment activities are a waste of time.

Research studies involving school-based, teacher-constructed tests, locally developed tests, or published instruments, can help identify profiles of achievement for particular age-groups in a range of subjects. Since teachers tend to infer that areas being assessed are worthy of teaching effort, it is important that assessment be broader than pencil-and-paper tests. Research studies like the Institute of Education's Functional Objectives of Language Learning (FOLL) project have addressed many aspects of language rather than focus on, say, reading comprehension. Anecdotal evidence suggests that teachers have given greater emphasis to the whole range of language skills since the FOLL project commenced. The benefits of such studies (in addition to encouraging teachers to be perceptive about the skills they develop in their students) include the development of more valid instruments, ensuring that overseas publications are adapted to suit local conditions, and making better use of time devoted to assessment so that a greater proportion of the time in the classroom can be devoted to teaching. In such a case the researcher complements the work of the teacher by concentrating on particular aspects, and by applying more powerful analytic techniques to extract the maximum of information from each classroom observation.

The following example (from Izard, 1979) will show how an educational researcher can complement the work of a number of teachers. This study was concerned with aptitude and achievement. Our expectation was that students with high aptitude would achieve at high levels and that low achievement would be linked with low aptitude. Our research enquiry

involved questions like, 'What happens to the relationship between aptitude and achievement if we were successful in teaching the skills measured by the achievement tests?' and 'What happens if we teach skills presumed to be related but **not** measured by the achievement test?'. I invite you to make a note now of what you anticipate as the result so that you can compare your expectation with the results we actually obtained.

One aspect of the study provided for instruction on comparison of areas, followed by testing on both area comparison, volume comparison, and assembly of three-dimensional puzzle blocks. Another group was instructed on volume and three-dimensional puzzles before being tested in the same way as the area comparison group. The students were tested on the aptitude measures some six months prior to the instruction.

Figure 10 shows the results of the area comparison test for the two groups. The first diagram in Figure 10 shows the contribution of spatial orientation (CARDS), spatial visualization (MPFB), and instructional time (OPLN) to success on the area comparison test where the group was instructed on volume comparison and assembly of three-dimensional puzzle blocks. The data suggest substantial and positive contributions from the two spatial aptitute measures. In the case of instructional time, those spending longer times on (irrelevant) instruction tend to have lower scores on the area comparison test. In the case of the group being instructed on area comparison (see the second diagram in Figure 10), longer (relevant) instruction time (OPLN) was associated with better scores on the test. There is still a contribution of spatial orientation (CARDS) to area comparison but this contribution is smaller than for the other group. The contribution of spatial visualization (MPFB) is very small for this group.

These results imply that the weaker students as judged from the aptitude tests do better as a consequence of successful teaching when the instruction is relevant for the assessment. Aptitude measures should be used cautiously. If the teaching is relevant and the test assesses what is

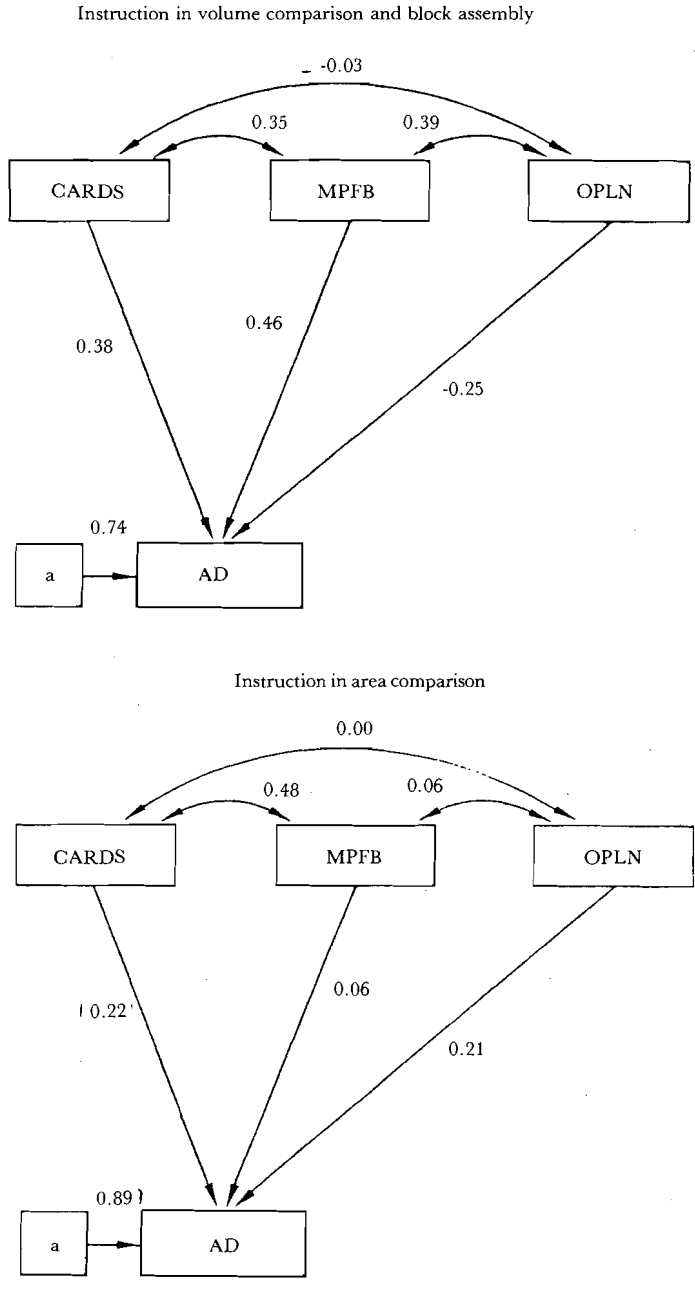


FIGURE 10 Contributions to success on Area Comparison Tasks

taught then the improved success rate of the weaker students may well result in lower correlations between predictor variables and final test results. If correlations between predictor variables and final test results remain high we might need to question the success of the instruction, or the choice of those predictor variables as relevant aptitude measures.

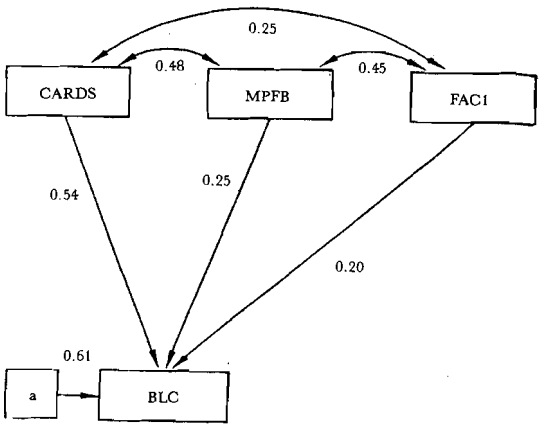
As these results could have been specific to the instructional strategies being used, it is useful to examine the results of these groups on the task involving assembly of three-dimensional puzzle blocks. The first diagram in Figure 11 shows that, for those instructed in area comparison (irrelevant), there are substantial contributions to score on the block construction tasks (BLC), from spatial orientation (CARDS), spatial visualization (MPFB), and from prior experience with building sets and similar three-dimensional toys as reported by the parents of the children in the study (FAC1).

In the case of the group being instructed in volume comparison and block construction (see the second diagram in Figure 11), the contribution of spatial orientation (CARDS) is substantially lower than for the other group. The contributions of spatial visualization (MPFB) and prior experience with three-dimensional toys (FAC1) are reduced. Longer instructional time (OPLN) was associated with better scores on assembly of three-dimensional puzzles (BLC).

The pattern of results for block construction after relevant and irrelevant instruction is similar to that observed for area comparison. The researcher has been able to complement the skills of a group of teachers by identifying aspects of their teaching that have differential effects. This type of study is of particular benefit in investigating how to overcome learning deficits. Overcoming deficits is a challenge in any school or tertiary institution because a number of the factors are not malleable. Factors like age and sex are not subject to manipulation by the teacher. Factors like motivation and quality of instruction are able to be manipulated as part of the educational process.

In discussing the development of research skills to improve school-focussed research, I have drawn attention to the distinction between

Instruction in area comparison



Instruction in volume comparison and block assembly

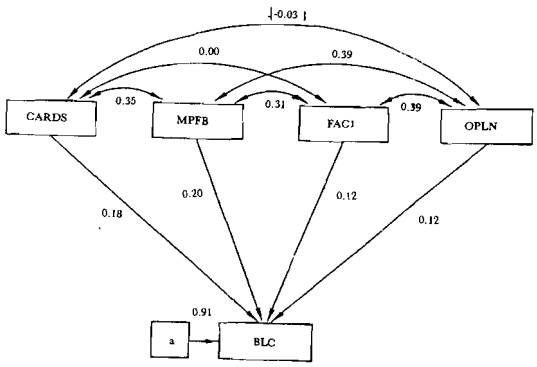


FIGURE 11 Contributions to Success on Block Construction Tasks

the evidence one might collect in a research project and its interpretation, and to some ways in which a classroom teacher and/or educational researcher might seek to investigate issues relating to the instructional process. I have identified some of the features of school-focussed research, and discussed in some detail an investigation that required a co-operative effort between the researcher and a number of classroom teachers. In concluding, I must emphasize the necessity for teachers, teachers of teachers, and researchers to cooperate in improving instructional techniques and the ways in which such improvements may be identified and evaluated.

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Doing Research on Teachers' Professional Satisfaction

Allen Menlo

ABSTRACT

This paper first describes a nine-country, cross-cultural comparative research project which comprises two research studies — one on teacher satisfaction and another on teacher enthusiasm. Rationale for the particular focus and for the cross-cultural approach to the research is then presented. Finally, several non-conventional ways of thinking about schools are suggested in order to create a new paradigm for applying findings from the two studies. This is all provided as a context for applying the findings in the papers of Dr Sim Wong Kooi and Dr Frances Lee (included in this issue) towards the improvement of teacher satisfaction and efficacy in Singapore secondary schools.

Through this paper, I would like to set a context for the interesting and important Singapore findings which Drs. Sim and Lee present in their papers. To set this context, I would like to respond to three questions.

1. What is the background and general design of the larger cross-cultural research project from which the Singapore findings arise?
2. Why do the two studies of this project have the focus that they do, and why conduct them across cultures?
3. Dr. Sim's and Dr. Lee's findings from these two studies will best serve education in Singapore if they are used to improve the professional satisfaction and efficacy of teachers in their own settings. School and education officials have power to influence how this utilization of findings will take place. So, a third question to which I would like to respond is: What is the kind of thinking and believing by school and education officials which will increase the likelihood that these findings will be implemented in the best service of the professional satisfaction and efficacy of teachers?

Question 1. What is the background and general design of the larger cross-cultural research project from which the Singapore findings arise?

The Singapore Institute of Education is a member of a research partnership between nine research teams, each at a different higher education institution in a different country. These teams are located at the Singapore Institute of Education, the University of Michigan in the United States, the University of Sheffield in England, the University of Frankfurt in West Germany, Hiroshima University in Japan, the University of Warsaw in Poland, the University of Windsor in Canada, the Shanghai University of Finance and Economics in China, and the University of Haifa and The Technion in Israel. The purpose of this Consortium for Cross-Cultural Research in Education is to generate basic behavioural science knowledge, applied knowledge about the nature of teaching and schooling, and policy and practice recommendations for the improvement of education within the cultural settings involved.

Three years ago, there was a decision to

engage in two studies within each of the settings. One study, called the Teacher Professional Satisfaction Study, collected data on several variables which went beyond just the concept of professional satisfaction. The seven broad variables in the study are underlined within the schema in Figure 1, and under each broad variable the sub-variables are identified. The richness of the data collected on each of these variables becomes more clear when one realizes that answers can be provided to both unicultural and cross-cultural research questions about each variable and sub-variable, as well as about relationships between variables and sub-variables, as depicted by the vectors. For example, one can find out the answer to the unicultural questions of which practices Singapore teachers find most to least difficult to carry out in the classroom, and to what extent the presence or absence of certain work conditions contributes to the experience of job stress for Singapore teachers. The answers to these same two questions can be sought cross-culturally by comparing the responses of Singapore teachers to those of teachers in any or all of the other nine countries. Through a careful examination of Figure 1, the multitude of pursuable single variable and inter-variable questions, on a unicultural or cross-cultural basis, can be identified. Data for this study were collected through a somewhat lengthy, structured, closed-ended questionnaire which was distributed to a systematically selected sample of secondary teachers within each country. The return in Singapore was 1,000 questionnaires, for a response rate of 95% of those distributed — a response rate not experienced in my part of the world. Of course, in each country, translation or modification of questionnaire language was needed in order to accommodate the country's language and culture.

The second study, called the Teacher Enthusiasm Study, sought to find out what the sources of enthusiasm and discouragement are for secondary teachers in their daily work, how it is that these sources work, and by what means enthusiasm can be increased and discouragement decreased in teachers' professional lives. Data for this study were collected through structured, open-ended, small group interviews of teachers at their schools. Teachers were asked to identify and select the things which made them feel enthusiastic professionally and the things which made them feel discouraged professionally, how each of these things operated in the arousal of enthusiasm or discouragement, and what could be done to increase enthusiasm and decrease discouragement for teachers. Here again, answers to these questions are available for Singapore teachers; and how Singapore teachers compare to teachers in any or all the other eight countries can be determined.

The two studies complement each other. That is, the findings in one can serve to explain, clarify, and add to the other. They have a conceptual overlappingness.

Question 2. Why does this project have the focus that it does have and why conduct it across cultures?

Carl Rogers, in recent writings (1980), spoke of a voice from the dungeon; the efforts of many individuals struggling each day to tap out messages to others; to be heard and understood, and responded to. For us, this fits the plight of the teaching profession in many places. We very much wanted to give strong voice to the concerns of teachers and to the wisdom of their experience on how to improve teaching and schooling. This may sound somewhat romantic and overdrawn, but, to us, it seems that academic researchers are more likely to interpret the utterances of teachers in and for scholarly journals, and that policy-makers are more likely to establish stately commissions for recommending educational change, than to help clarify and amplify the wisdom of those who are closest to the task under consideration. So, one reason for focusing this project on teachers and their professional lives is because we wish to contribute to their empowerment as important professional people and to their sense of efficacy — their feelings of being able to influence constructively what goes on in schools. There are other reasons; I will identify five more.

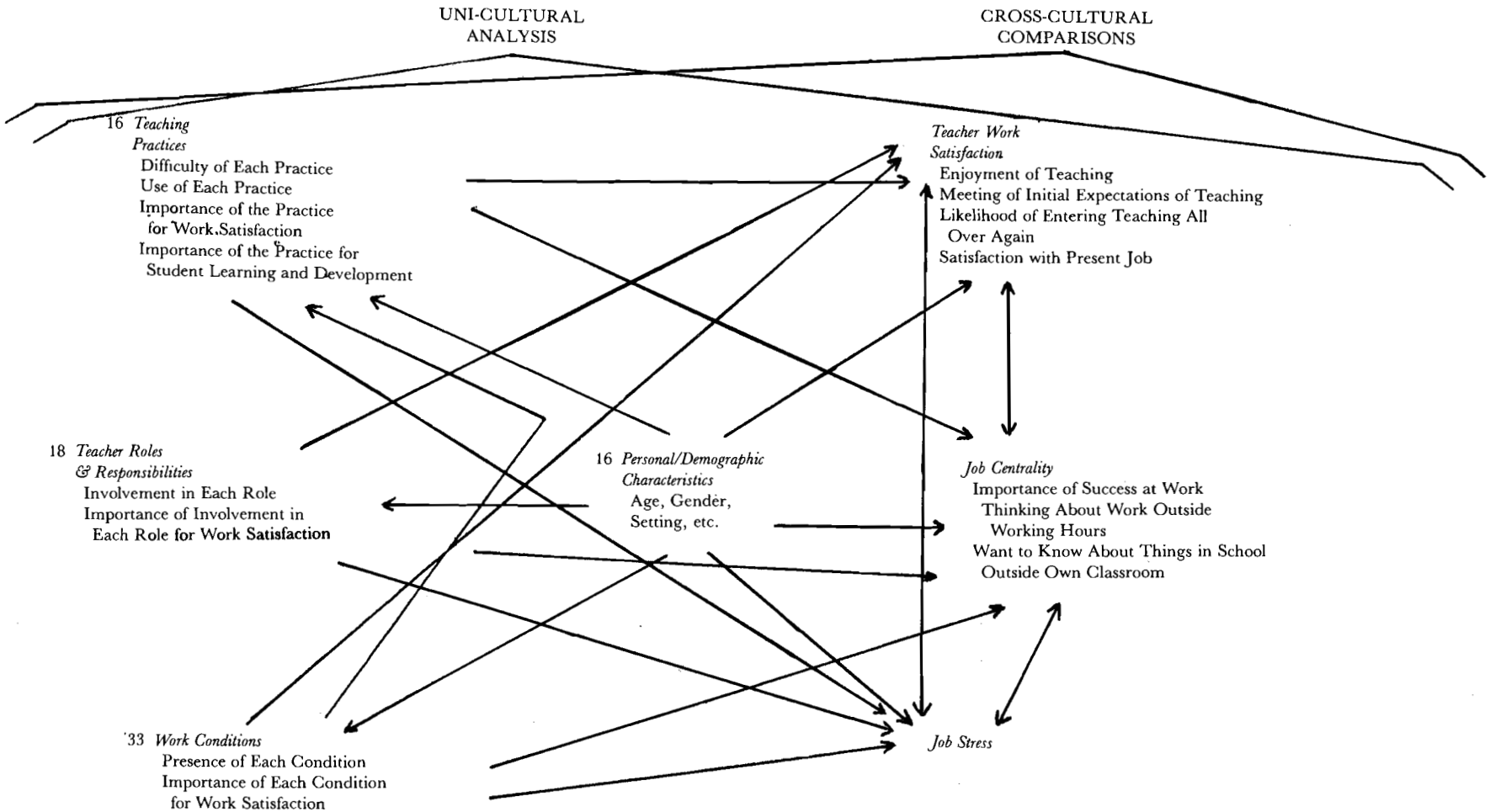

FIGURE 1. VARIABLES AND INTER-VARIABLE RELATIONSHIPS WITHIN THE TEACHER PROFESSIONAL SATISFACTION STUDY

1. The quality of student learning is inevitably linked to the quality of classroom teaching, and the quality of classroom teaching is closely related to a number of factors which impact on the thinking, feeling, and behaviour of the teacher — such as those being researched here.
2. The more that can be understood about teachers' perceptions of their practice, their views about what practices are most and least promotive of student learning and development, and their experiences with what conditions help and hinder their engagement in effective practice, then the greater the potential for school officials to make sound interventions in classroom and school life in the best interests of teaching and schooling.
3. There is a need to define what the knowledge base is that teachers ought to have in order to be a successful teacher (Holmes, 1988). The practices which teachers identify as essential for student learning and development and for their own work satisfaction can be one important source for determining this knowledge.
4. Several studies (Kalleberg, 1977; Schmitt and Pulakos, 1985) have found that job satisfaction influences life satisfaction and thus can act as an important influence on the teacher's daily psychological health. We have found that, in most of the countries in this study, teachers who have greater overall job satisfaction are likely to experience less stress than teachers with less overall job satisfaction. Stress, in turn, has been related to teacher burnout and its consequences of the teacher either leaving the profession or remaining in it in an unhappy, self-shackled manner (Cedoline, 1982; Dworkin, 1987). So, it is important for us to understand the nature of the relationship between work satisfaction and stress and what kinds and levels of stress are functional and non-functional for the efficacy of teachers in their profession.
5. Enthusiasm in the classroom and school setting has been documented as an important source of influence on both the quality of worklife of teachers and the eventual academic learning and socio-emotional development of students (Allen, 1980; Collins, 1976; Cruickshank, 1980; Gillett, 1980; Rosenshine and Furst, 1971). At the same time, discouragement has been shown to have a strong negative influence on teachers and teaching. It has brought about such consequences as: emotional and physical fatigue; decreases in work motivation, involvement, and satisfaction; expressions of aggression, psychosomatic symptoms, and absenteeism; leaving teaching; and placing increased value on material rewards (Blase, 1985; Dunham, 1976; Argyris, 1957; McLaughin et al, 1986). It seems clear that it is important to understand the dynamics of these two emotional states.

The reason for conducting the project in several cultural settings and then making cross-cultural comparisons is that this process presents the opportunity to extract understandings and develop recommendations which have a more broad and reliable base than those developed from a unicultural context. Cross-cultural research enhances our ability to develop and test knowledge with a more universal scope, rather than with just specific populations. Each culture acts as yet another experimental setting to both test the universality of findings and discover the influence of the particular culture on the phenomena under consideration, i.e. we can discover what is inherently true about teaching and schooling regardless of culture, as well as how each culture affects teaching and schooling. For example, we have found that contact with students and their learning is, by far, the strongest stimulus for the feeling of enthusiasm by teachers in *all* countries we have studied. But, teachers in Singapore and the United States are far more affected, positively and negatively, by administrator behaviour than teachers in the other countries. Even further, we can determine if the detailed, internal properties of what is generally true across cultures is also precisely the same in each culture. For instance, in an earlier study (Menlo, 1985) we discovered that, while both United States

and British teachers associate friendliness with the act of teaching, the British teachers *take time out* from teaching in order to introduce it and the U.S. teachers view it as an integrated component of teaching. From information such as this, teachers and school officials in one culture can learn new perspectives and approaches to translate into the educational context of their own culture, or even to *modify that context* so new things can happen in it. A simpler, yet accurate, notion is that educators can see their own system with greater clarity when it is reflected against a different system. National differences can help point up features in one system that might otherwise be taken for granted. Many aspects of one country's education are immediately illuminated by systematic comparison with education in other countries. The negative influence of being overfamiliar with one's own context can be reduced. Being so familiar can preclude the singling out of events that are occurring, even when they happen right in front of the observer (Atkinson, Delamont, and Hammersley, 1988). Still another reason for conducting this project in several cultural settings is that it can provide each of us with an opportunity to gain personally and professionally through interaction with researchers and practitioners from uniquely different backgrounds and orientations. One future event in our vision is an international meeting of teachers and administrators from the several countries of this project, at which the findings would be examined and learnings extracted cross-culturally through discussion.

Question 3. What is the kind of thinking and believing by school and education officials which will increase the likelihood that the Singapore findings will be in the best service of the professional satisfaction and efficacy of teachers?

To truly allow change to happen in schools, we need to allow schools to be thought about in ways which may be contrary to the ways we think about them now. To illustrate this kind of thinking — a departure from the usual — I would like to share a cartoon (Figure 2) created

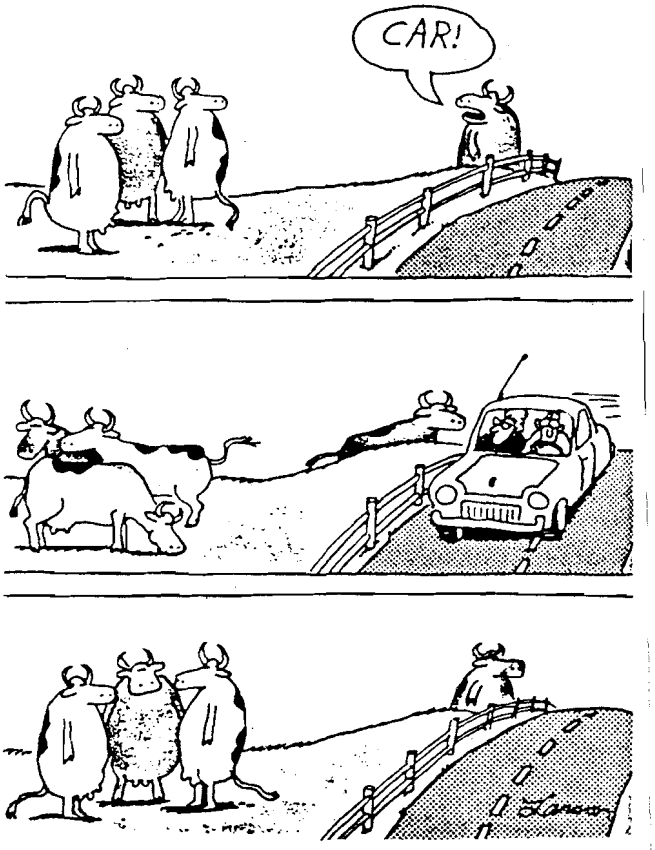

FIGURE 2 How things may be other than the way we think them to be.

(On The Far Side cartoon is reprinted by permission of Chronicle Features, San Francisco)

by the illustrator, Gary Larson (1984). The cartoon raises the humorous question of whether or not one of the main reasons cows walk on four legs is because they think people expect them to. By analogy, the structure and functioning of schools might be quite different if we allowed them to be thought of in ways which are contrary to our usual ways of thinking about them. We need to allow ourselves to shift our consensually-held paradigms for schools; to modify many of the already agreed-upon guidelines, principles, beliefs, and images which come into play when we begin to think about schools. I think this is true because what may be perfectly obvious in one paradigm may be totally imperceptible in another. What may be impossible with one paradigm may be easy with another paradigm. We can *choose* to modify our paradigm for schools if we wish.

I would like to suggest a few ways of thinking about schools and about the human nature

which would comprise a paradigm shift within which to hear and consider the application of Dr. Sim's and Dr. Lee's findings, and possibly allow the findings to have the fullest potential for improving the professional satisfaction and efficacy of teachers in schools. My suggestions are grounded in two sources: a recent synthesis by Miller and Lieberman (1988) of findings from quantitative and qualitative studies on school improvement; and thirty some years of work in individual, group, organization, and community development. Here are my suggestions for your consideration.

1. The *work* of being a teacher is a powerful source of learning, *at least* equal to the formal teacher education curriculum wherever it occurs.
2. The school is a setting for the academic learning and professional development of teachers, *side-by-side* with the academic learning and personal development of students.
3. The academic learning and professional development of teachers is a legitimate *product* (not a by-product) of the school, side-by-side with the *product* of student learning and development.
4. Teachers are the agents for developing the setting of the school, and school administrators are the facilitators of competency learning and action taking by teachers in order for them to develop the best of settings.
5. The school administrator is an adult educator with an androgogical perspective, i.e. the administrator's efforts towards teachers are those of helping teachers learn how to learn from and within the context of their work and are aimed at the development of the teacher as a self-directed professional.
6. School administrators have an ethical responsibility for the psychological health consequences of teachers' daily experiences in school. This perspective is pursued directly and indirectly in several recent writings on teachers and the teaching profession (e.g., Bolin and Flak, 1987; Lieberman, 1988; Maeroff, 1988).
7. Teachers, like all other adults, do not resist change; they seek it. In order to view people this way, you have to disbelieve most of the conventional literature on the dynamics of change, which reports that resistance to change is a natural human phenomenon and is the most commonly encountered response to an advocated change. To the contrary, if and when teachers do resist, it is not *change* they resist, but instead, it is the expected consequences of loss which will diminish their self or social esteem or personal power. The most potent condition for the reduction of resistance to expected loss is the assertive provision of avenues for active participation in planning and implementation of the change process.
8. Efforts to help teachers become more effective *through the evaluation of their work* should be minimal. Several researchers and reflective practitioners (e.g. Gibb, 1961; Rogers, 1955) have made it abundantly clear that when evaluativeness and judgment enter an interpersonal relationship, there is damage to the health and trustfulness of the relationship and to either party's receptiveness to being influenced by the other. What can be helpful to the growth and development of teachers are feedback processes which involve the non-evaluative observation of behaviour, the non-judgmental citing of consequences, and the inquiry of whether the consequences are in line with the teacher's intentions. It is when evaluation becomes inappropriately synonymous with feedback and terms such as "positive feedback" (praise) and "negative feedback" (criticism) are employed that expected losses of personal and social esteem are likely to occur, resistances are likely to be aroused, and the possibilities of mutual helpfulness deteriorate. By its nature, feedback comprises neutral information and there would seem to be no such things as positive or negative feedback. One implication which would logically appear to

follow from this perspective is that administrators can be of greatest service to the professional development of teachers if they create various mechanisms for ongoing feedback on teacher efforts more so than mechanisms for evaluation.

9. The goals and objectives for professional development programmes should not be meticulously predetermined. While the currently favoured advice from many psychology and education experts to practitioners of teaching and schooling is that they should be very specific, precise, and behavioural in their development of educational objectives, it is wise to question ready adherence to this advice. If one defines, with specificity, where one wishes to end up as a result of educational efforts, then one strongly precludes ending up at a place which one could not have imagined at the beginning of the venture. Thus, the meticulous predetermination of outcomes would appear to reduce the opportunity for the discovery of many exciting alternatives. Since change tends not to be a neat, linear process, it is often neither possible nor advantageous to have either precise goals or a clear itinerary for change; but instead to notice and optimistically explore some detours.
10. Most teachers do *not* wish to be directed by responsible leadership. Most *persons* prefer to be directed by themselves more so than any leadership. Much has been written from different perspectives (Zeleny, 1981; Olson, 1959; Berelsen and Steiner, 1964, pp. 244-249) about the natural drive and capacity of persons to direct and help themselves, even though this drive is sometimes masked by initial and later short term expressions of impotency and accompanying desires for quick answers and minimum involvement in co-determination (Fried, 1970). The extensive number of leadership training agencies and programmes may be viewed as testimony to the preference of persons to direct themselves. The peculiar nature of this testimony is that people in ascribed leadership roles are continually having difficulties in directing all those people who naturally do not wish to be directed, regardless of the number and variety of strategies developed for this purpose. Fortunately, many leadership training programmes now operate with the realization that leadership training can mean helping leaders learn how to help persons lead themselves. Accordingly, it would seem wise for school administrators to resist the occasional temptation to *prescriptively* present faculty with solutions to problems or even procedures for moving towards solutions. Instead, they would provide training in, and opportunities for active participation in shared decision-making, planning, and implementation of organization development efforts in the school.

In summary, what I have tried to do in this paper is provide information on the larger cross-cultural project from which Dr. Sim's and Dr. Lee's findings emerge, tell you why the project focused on the general topic of teacher professional satisfaction and enthusiasm and why cross-culturally, and then I tried to suggest a way of thinking about schools and teachers which would be most likely to allow the findings to have an impact on teacher professional satisfaction and teacher efficacy in your schools.

I hope you will forgive my arrogance in suggesting how school and education officials ought to think. And, yet, I hope you will give some consideration to these possibilities.

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RESEARCH PAPERS

The Job Satisfaction of Teachers in Singapore

Sim Wong Kooi

ABSTRACT

Questionnaire responses from 926 secondary school teachers were analysed in order to relate various background characteristics variables (classified as Personal Characteristics, Professional Characteristics, and School Characteristics) and job characteristics variables (divided into Conditions of Work, Roles and Responsibilities, and Teaching Practices) to teacher job satisfaction variables. Using factor analysis, the two factors of Overall Satisfaction and Work Orientation were regressed on selected background characteristics variables as well as sets of higher order factors of the job characteristics variables. Arising from multiple regression analyses, Conducive Work Environment, Opportunities for Professional Development and Teacher-Pupil Rapport were found to be most predictive of Overall Satisfaction, whereas Professional Autonomy, Pastoral Role and Pupil Behaviour Control were most likely to be associated with Work Orientation. Comparisons with the findings from the analysis of interview results and from cross-cultural comparisons among the countries involved in the major study are strongly urged for arriving at more definitive suggestions for improving teacher job satisfaction.

1.0 INTRODUCTION

1.1 This paper[1] reports the findings of a part of a part of a major cross-cultural study on secondary teachers' perceptions of their job satisfaction and associated variables. In the first place, this project is being undertaken by six countries, and Singapore is a part of the consortium. In each country, data are collected from interviews and questionnaire surveys, but this paper will be confined to the analysis of questionnaire data only. Finally, even though the massive data can be analysed in a variety of ways, only selected data and some of the analyses would be presented.

1.2 The main research question to be explored in this paper is: to what extent are certain background and job characteristics related to teacher job satisfaction for a sample of secondary school teachers?

[1] A version of this paper was first delivered at the symposium on Teaching Practices, School Work Conditions, and Teacher Job Satisfaction in Five Countries: A Cross Cultural Survey at the American Educational Research Association Annual Meeting, New Orleans, 5-9 April 1988. The writer wishes to acknowledge his gratitude to Professor Allen Menlo and his team from the University of Michigan for conducting the interviews, members of the Executive Committee of the Educational Research Association, Singapore, for administering the questionnaire for this study and to his colleagues at the Institute of Education for various assistance, in particular to Dr Frances Lee for the qualitative analysis of the interview data and Mr Lam Tit Loong for processing the questionnaire data.

1.3 Since the job characteristics and teacher job satisfaction variables have been subjected to factor analysis, a more useful representation of the main components of the study is to incorporate some of the resultant factors, as shown in Fig. 1. Factor analysis of the teacher job satisfaction variables has resulted in two clearly defined factors which have been labelled 'Overall Satisfaction' and 'Work Orientation'.

1.4 Job characteristics are represented by three sets of items which are concerned with Conditions of Work, Roles and Responsibilities and Teaching Practices. In each of these sets of items, the respondents were asked the extent to which each item was present in their job as well as how important each item was for their job satisfaction. Each of the ratings on a three-point scale according to 'presence' and according to 'importance' were separately factor analysed. The entries in Fig. 1 show the names of the first three second-order factors.

1.5 While many more background characteristics were captured by the questionnaire, only some selected ones would be examined in this paper. These variables have been grouped into Personal Characteristics, Professional Characteristics and School Characteristics. Some explanations may be needed for the selection of the latter set of variables. In Singapore, which is a compact island state, the rural-urban dimension of school location is meaningless. Likewise, the size of school is also not very meaningful, for there are schools that are large because they are popular or because places in choice schools are limited and the school is the last choice for many students. Because of centralisation tendencies, the distinction between Government and (Government) Aided Schools is also fast blurring, but perhaps there are residual differences in school ethos to make School Type a worthwhile dimension for comparison. While teachers in secondary schools could differ in their job satisfaction from those in junior colleges — which prepare students for university entry — teachers in pre-university centres experience a different work environment. Although they do prepare students for university entry, many do not make it even though the students spend three years after their secondary school course. Furthermore, these centres are situated in secondary schools, where facilities and resources are more limited than those in junior colleges. Comparisons of the perceptions of teachers by school level (i.e. those from junior colleges, pre-university centres and secondary schools) might therefore be useful. With our highly examination-oriented schools, schools that are placed among the top quartile are probably different from those in the bottom quartile according to overall achievement in the public examination. Thus, comparing teachers in terms of whether they are from high-achieving or low-achieving schools (School Status) could be quite meaningful.

1.6 The composition of the sample of 926 teachers, which constitute approximately 90% of usable returns, is shown for each of the background characteristics in Fig. 2. Thus, there is a predominance of females (about two-thirds), with about a third in each of the three age ranges; less than 30, 30–39, and 40 and above, and a little more than two-thirds with degrees. A quarter of the sample are language arts teachers and a large majority

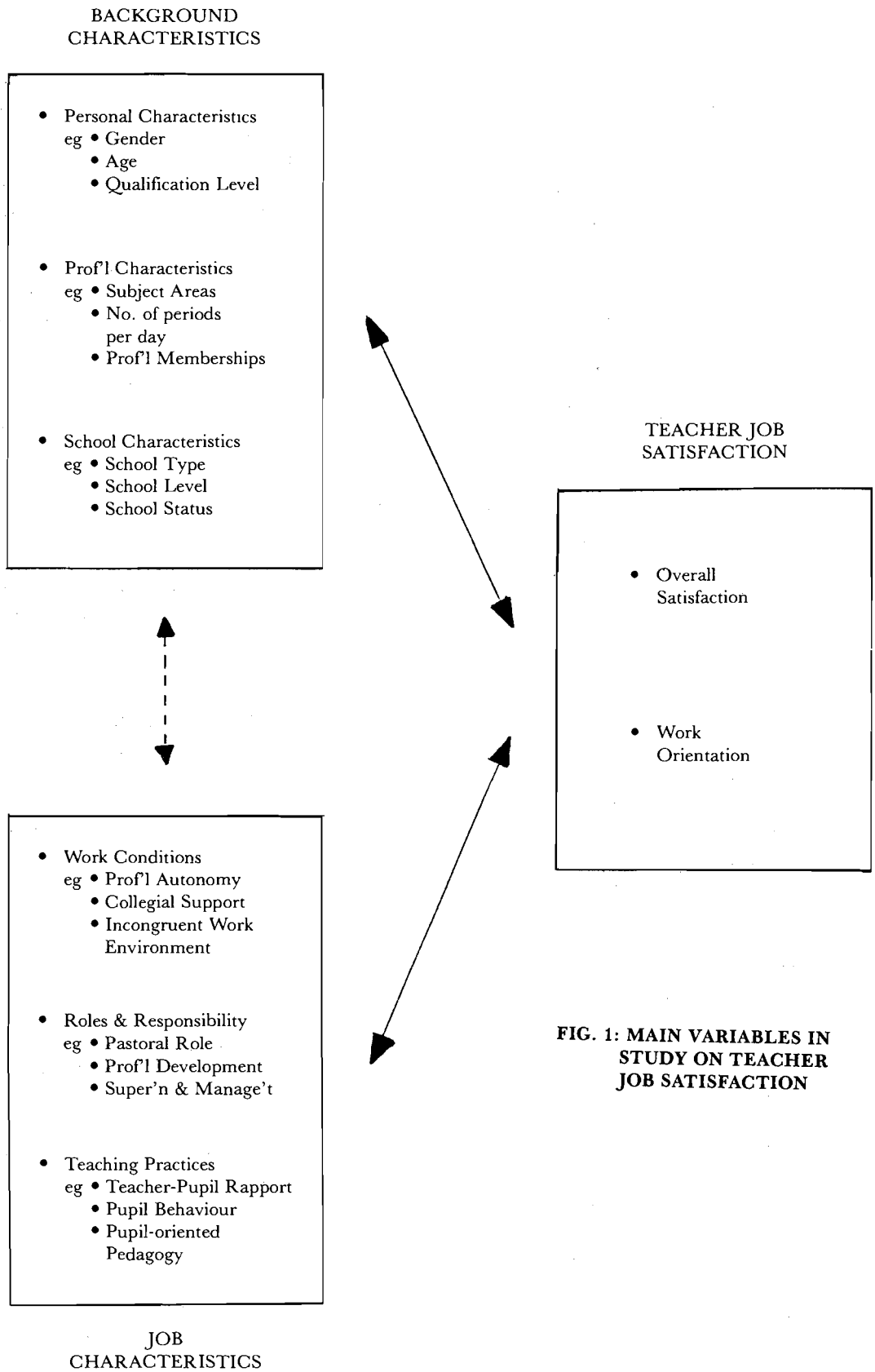
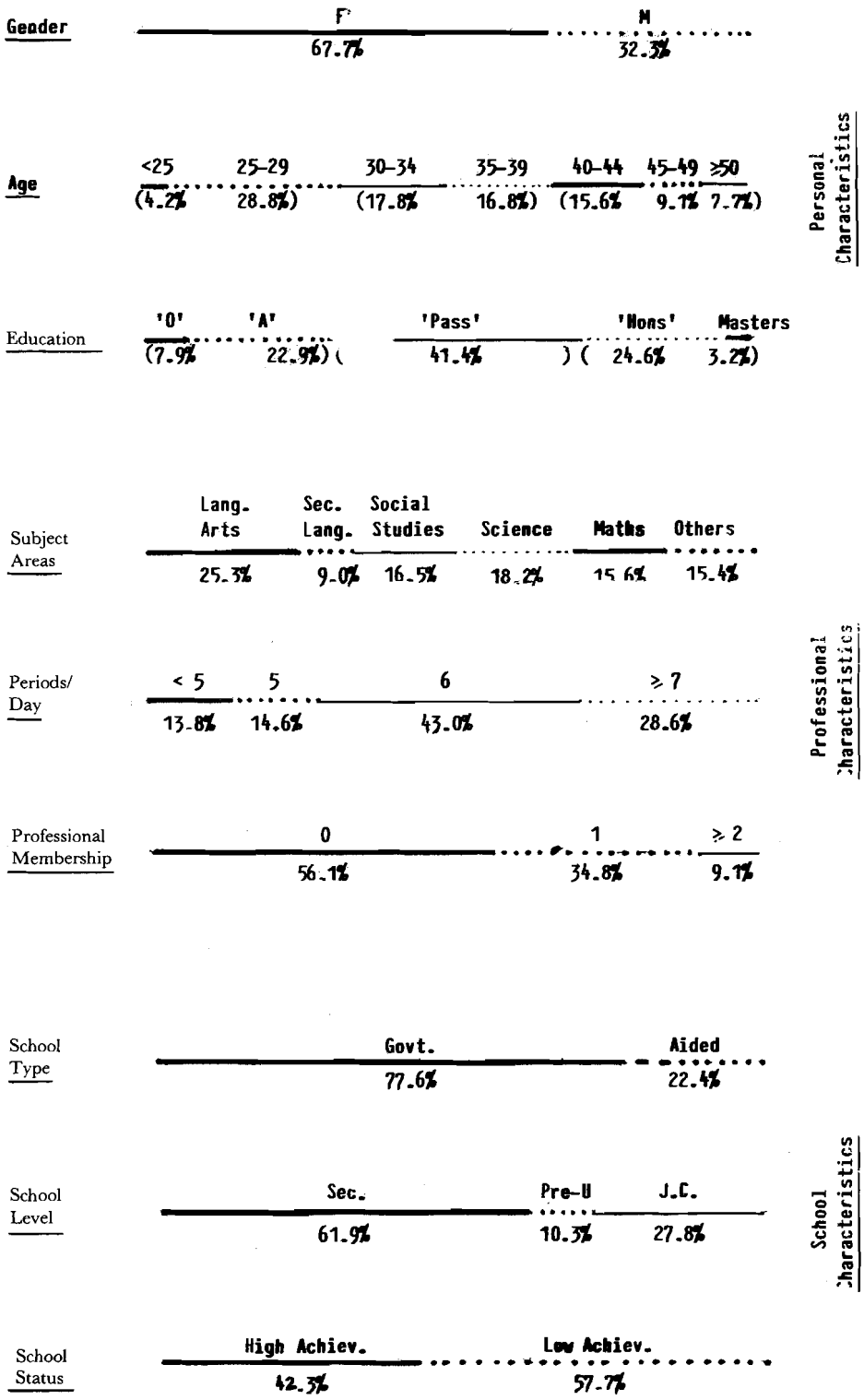


FIG. 1: MAIN VARIABLES IN STUDY ON TEACHER JOB SATISFACTION

Fig. 2: SOME BACKGROUND CHARACTERISTICS (N=926)



(43.0%) teach about six periods (of about 45 minutes per period) each day. But more than half (56.1%) are not members of professional associations. Finally, most of them (77.6%) are from government schools, a majority (57.7%) teach in lower achieving schools and a majority (61.9%) also teach at the secondary school level.

2.0 SCOPE OF STUDY

2.1 In the questionnaire, 9, 33, 19 and 20 items were used to represent Teacher Job Satisfaction, Work Conditions, Roles and Responsibilities, and Teaching Practices respectively. Although responses to individual items would be compared within each group and also in relation to the selected Background Characteristics, factor analysis is employed as a data reduction device so as to allow more manageable, and perhaps more meaningful, comparisons.

2.2 Some of the Background Characteristics variables are compared one at a time with each of the Teacher Job Satisfaction variables as well as with each of the resultant factors through one-way analysis of variance. Multiple regression analysis is also used to relate the combined group of Background Characteristics with each of the factors for Teacher Job Satisfaction.

2.3 Particular attention is paid to the Job Characteristics variables, for they represent what Lawler (1973) has termed as "facet satisfaction" or "people's affective reactions to particular aspects of their job", as distinguished from "overall satisfaction" which he termed as "a person's affective reactions to his total work role".

2.4 Another useful distinction is that between the perceived "presence" and perceived "importance" of each of the Job Characteristics items. Intuitively, the relative degrees of "presence" and "importance" should be related to satisfaction or dissatisfaction, but the relationship is by no means simple nor likely to be linear. For instance, when a simple difference model is used, high presence with high importance could be mistaken for low presence with low importance. Likewise, using a simple product model, high presence with low importance could be mistakenly equated with low presence with high importance. Some attempts to group the joint responses for each item will be made for each set of Job Characteristics variables in order to arrive at the overall pattern of responses. The co-occurrence of "presence" and "importance" variables in clusters arrived at through factor analysis is expected to yield meaningful associations for this study. Multiple regression analysis would then be used to relate each set of factor scores for Work Conditions, Roles and Responsibilities, and Teaching Practices with each of the factors for Teacher Job Satisfaction. However interesting, it is beyond the scope of this study to delve into the measurement and meaning of various ways of combining these and other variables, such as those discussed by Evans (1969) and Wanous and Lawler (1972).

2.5 Besides attempting to arrive at results that could be compared with those from the other countries that have applied the same instrument, with perhaps slight modifications to accommodate the more important features which obtain in their respective countries, this study hopes also to compare with the find-

ings of the few local studies that have been conducted on teacher job satisfaction or dissatisfaction. One interview study which was briefly reported in the so-called Goh Report (1979), resulted in a major reform in the education system in Singapore. Taking teacher satisfaction and low teacher morale as synonymous, the Report concluded as follows: "The majority of the teachers interviewed (82%) indicated that their morale was not low. However, a significant relationship existed between the type of school (poor and good by examination results) and teacher's morale. Major factors which have affected morale were low social status, frequent changes in the education system, ineffective system of supervision and guidance and poor promotion prospects".

2.6 A more recent study by Ho (1985) investigated ten job facets (recognition and status, students, resources, teaching assignment, supervision and guidance, workload, salary and benefits, advancement and growth, co-workers, and management and policy) which affect satisfaction and dissatisfaction of secondary school teachers. Each of these separately as well as when combined was significantly correlated with overall job satisfaction. Some of the findings were comparable to those obtained for the Goh Report, although they were strictly non-comparable because of differences in instrumentation. Ho's study also found that a number of personal variables (sex, academic qualification, age and experience) were related significantly to overall job satisfaction.

2.7 In the current efforts by the Ministry of Education to attract better qualified graduates and school leavers to take up teaching, some understanding of secondary teachers' perceptions of various facets of Work Conditions, Roles and Responsibilities and Teaching Practices and their relationships with Teacher Job Satisfaction will be useful in focussing on aspects of teaching and the work environment that could be further improved.

3.0 SURVEY FINDINGS

3.1 *Table 1* summaries the results for nine Teacher Job Satisfaction variables. Overall, the responses are on the positive side. The highest response is for the question, "To what extent is **success at your work important** to you?" The mean response is closer to the top end of the scale which ranges from "Very Little" to "A Great Deal". The lowest response is for the question "Knowing what you know now, if you had to decide all over again whether to **enter teaching**, how likely is it that you would do so?" The mean response is closer to "Somewhat Likely" on the scale which ranges from "Not at all Likely" to "Very Little". There is therefore some basis for concern that some teachers are somewhat likely to contemplate leaving teaching. In terms of group comparisons by Background Characteristics, there does not seem to be a very consistent pattern, except for gender, where males tend to be generally more positive.

3.2 The responses to the item on Work Conditions have been arranged in ascending order according to the perception of 'presence' (How much is this present in my job?) and the responses to the question of 'importance' (How important is this for job satisfaction?) are shown alongside the corresponding items of the

TABLE 1. TEACHER JOB SATISFACTION AND SOME ASSOCIATED VARIABLES

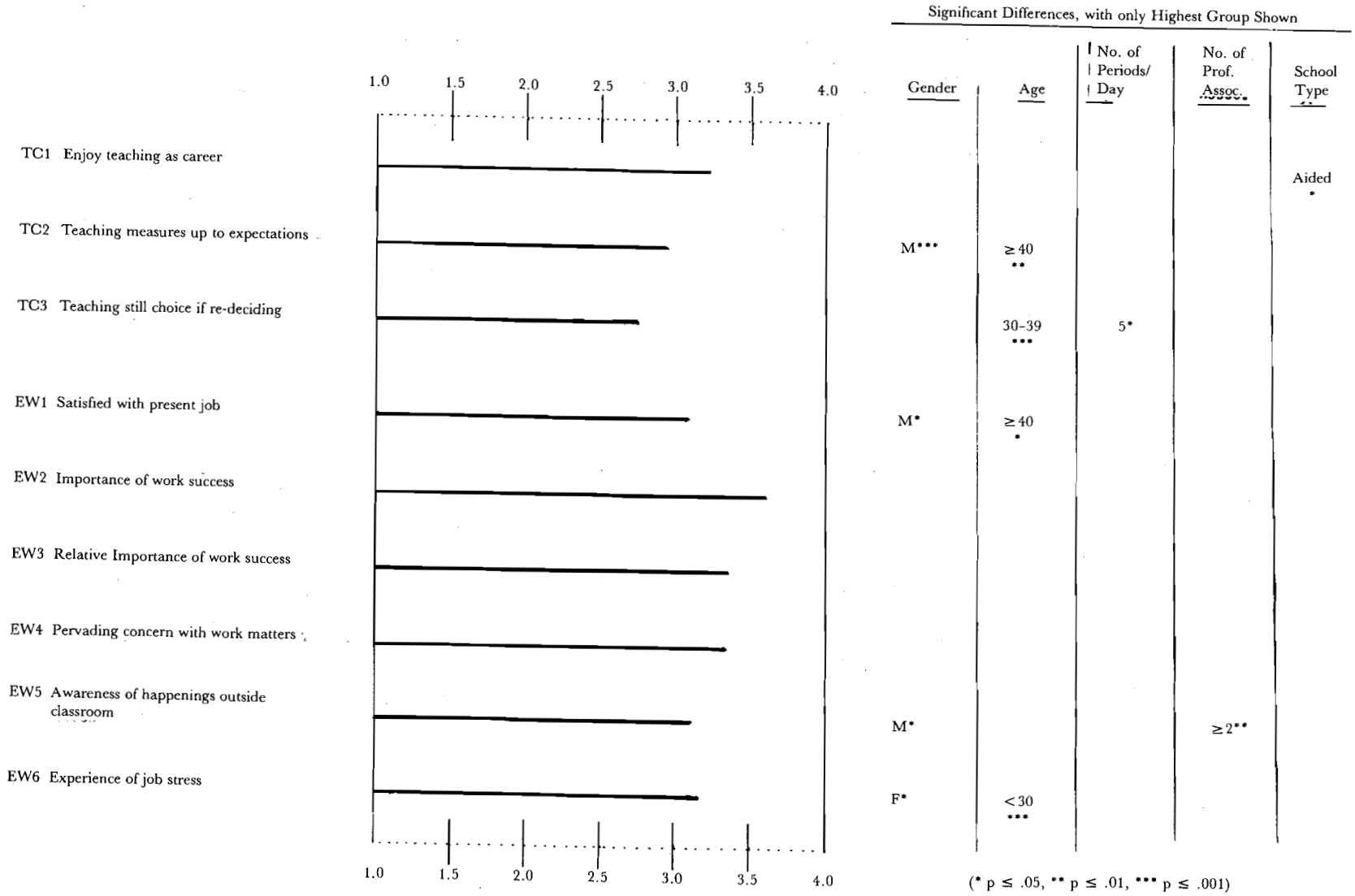
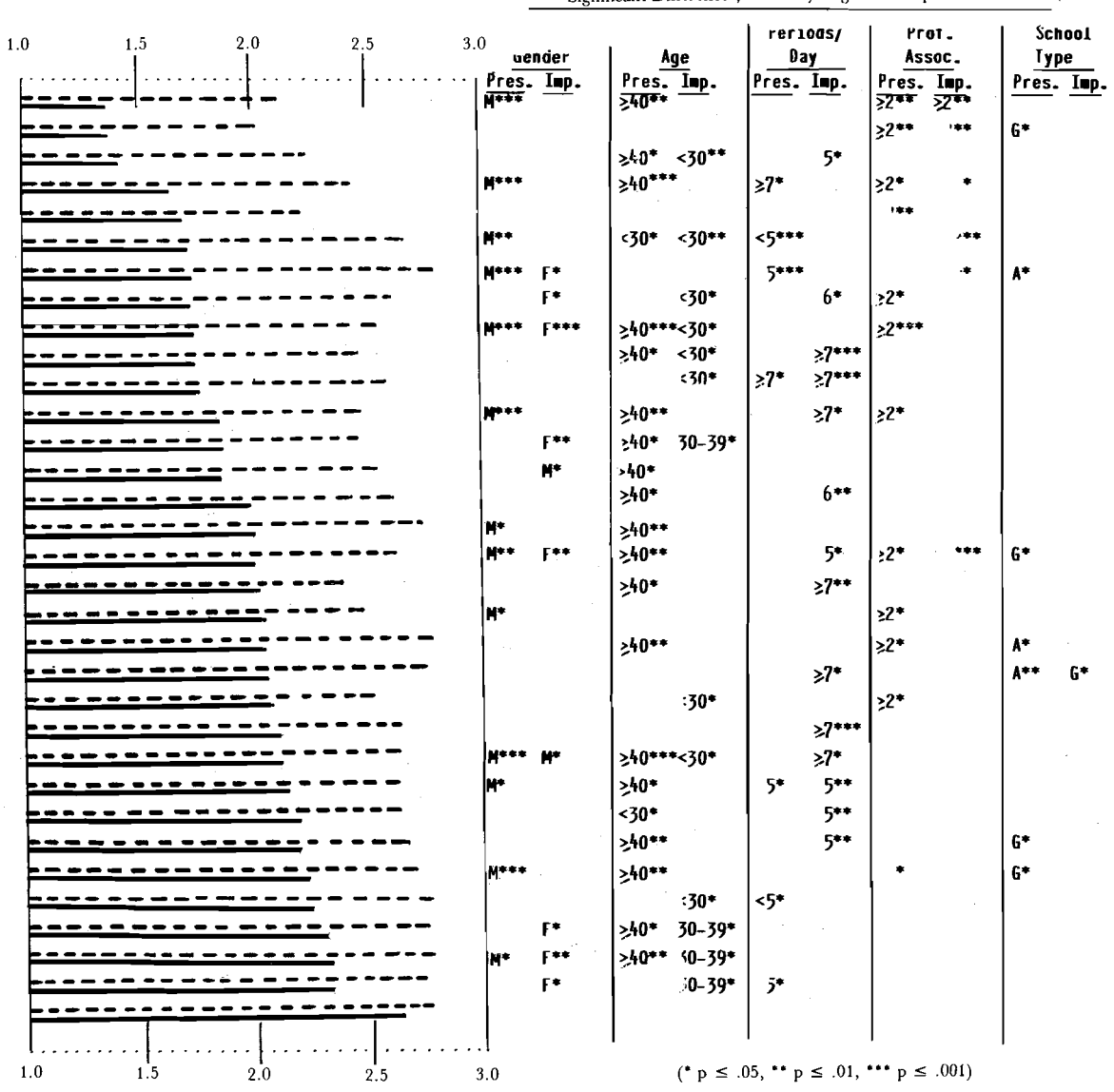


TABLE 2 PRESENCE OF CONDITIONS OF WORK AND IMPORTANCE FOR JOB SATISFACTION AND SOME ASSOCIATED VARIABLE



former, as shown in *Table 2*. Overall, all items are seen as much more important than they are actually present.

3.3 If the response pairs are re-grouped as shown in *Table 2A,* one item which teachers are probably most satisfied with is job security. This result might have been due to the fact that when the questionnaires were administered in the middle of last year, Singapore was just emerging from a brief period of economic recession which saw some people being retrenched in the private sector, many of whom were then trying to seek a more secure job like teaching. Items 2, 27 and 32 suggest areas where teachers are least satisfied and includes the perceived lack of adequate promotion opportunities, which was also one of the consequences of policies of wage restraint which accompanied strategies for economic recovery. However, the study by Ho (1985) tended also to confirm the Goh Report (1979) which observed dissatisfaction regarding prospects of promotion.

3.4 Turning to differences by Background Characteristics, it may be concluded that generally males, older respondents (40 years or older) and those with two or more professional memberships appear to be more satisfied in perceiving the presence of many facets more significantly than the other groups.

3.5 The ratings for items on Roles and Responsibilities are relatively low, as shown in *Table 3*. But 'importance' is again rated higher than 'presence' for all items except item 12, which suggests that teachers generally feel that they are already doing more than what they should be expected to do in extra-curricular activities like running clubs, sports, drama, trips, etc. Again, re-grouping of items as in *Table 3A* suggests that teachers hardly attend teacher union meetings, attend conferences, participate in research, induct new teachers, supervise student teachers,

TABLE 2A: RE-GROUPING OF 'CONDITIONS OF WORK' VARIABLES BY COMPARING RESPONSE PATTERNS ACCORDING TO 'PRESENCE' AND 'IMPORTANCE'

Grouping of Responses on 'Presence of Conditions of Work' Scale	Relative 'Increase' in Responses on 'Importance for Job Satisfaction' Scale over Responses in 'Presence of Conditions of Work' Scale		
	0 — .25	.25 — .50	≥ .50
1.0 — 1.5	—	—	2, 27, 32
1.5 — 2.0	—	—	15, 33, 5, 4, 26, 12, 31, 25, 19, 13, 14, 28
2.0 — 2.5	—	6, 9, 17	23, 8, 20, 1, 24, 16, 18, 11, 30, 10, 21, 22, 7, 13
2.5 — 3.0	29	—	—

TABLE 3. PRESENCE OF ROLES & RESPONSIBILITIES AND IMPORTANCE FOR JOB SATISFACTION AND ASSOCIATED VARIABLES

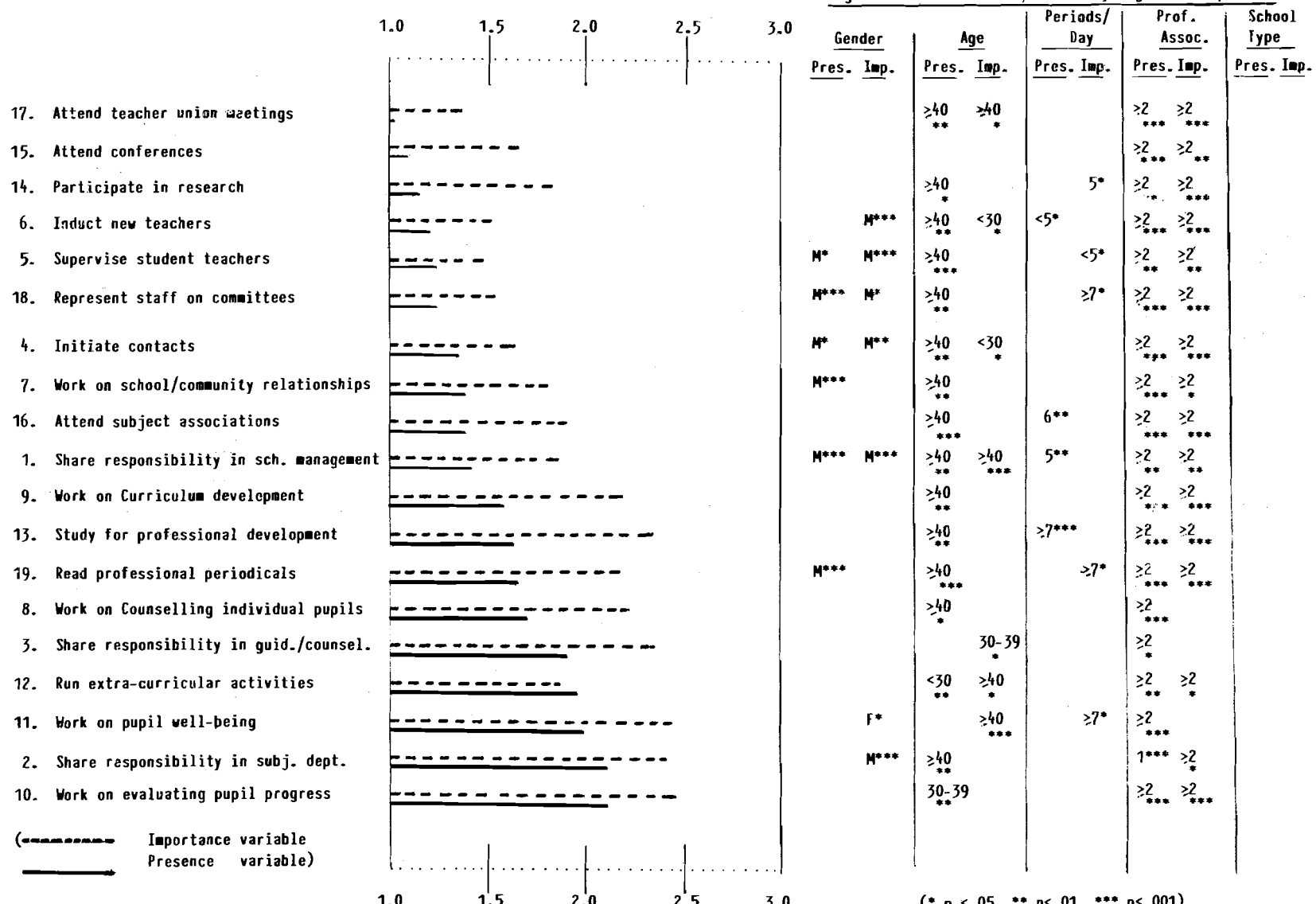


TABLE 3A: RE-GROUPING OF 'ROLES AND RESPONSIBILITIES' VARIABLES BY COMPARING RESPONSE PATTERNS ACCORDING TO 'PRESENCE' AND 'IMPORTANCE'

Grouping of Responses on 'Presence of Roles and Responsibilities' Scale	Relative 'Increase' (or 'Decrease') on 'Importance for Job Satisfaction' Scale over Responses in 'Presence of Roles and Responsibilities' Scale			
	<0	$0 - .25$	$.25 - .50$	$\geq .50$
1.0 — 1.5	—	—	17, 6, 5, 18, 4	15, 14, 7, 16, 1
1.5 — 2.0	12	—	3, 11	9, 13, 19, 8
2.0 — 2.5	—	—	2, 10	

and represent staff on committees (items 17, 15, 14, 6, 5, and 18) although they are more keen to undertake these activities, especially in research participation and conference attendance. This augurs well for the teaching profession. In the case of items 8, 3, 11, 2 and 10, which are related to teachers' pastoral role, although they are rated relatively highest in terms of 'presence', the ratings of 'importance' are also higher. To what extent this was influenced by the extensive public discussions of a report on *Towards Excellence in Schools,* which recommended inter alia the need for emphasis on pastoral care and career guidance cannot however be ascertained. In terms of Background Characteristics, again generally males, older teachers, and those who are more active regarding professional memberships appear to have relatively more favourable perceptions.

3.6 *Table 4* summarises the responses to the items on Teaching Practices, where the ratings for 'importance' are generally higher than those for 'presence' although the discrepancies are not as large as in the previous responses. Referring to the groupings in *Table 4A,* it is interesting to note that items 20, 19 and 13 which relate to pastoral practices are rated relatively lowest in terms of 'presence', while they are considered to be higher on 'importance'. The last few items (7, 9 and 10) suggest that teachers are generally satisfied with being able to communicate clearly with pupils on work expectations. Group differences are however less clear-cut.

3.7 Factor analysis of the nine items of Teacher Job Satisfaction with varimax rotation yielded two distinct factors, which are labelled Overall Satisfaction and Work Orientation. *Table 5* shows the significant loadings of the variables which may be identified by referring to *Table 1.* It is noteworthy that the experience of stress variable is loaded negatively on Overall Satisfaction and positively on Work Orientation. This suggests a possible area of conflict, for teachers may regard a situation as satisfying if it is free from stress, but they nevertheless realise that stress is inevitable for work success. For subsequent analyses, these two factors would be used in comparing with other variables.

TABLE 4. PRESENCE OF TEACHING PRACTICES AND IMPORTANCE FOR JOB SATISFACTION AND SOME ASSOCIATED VARIABLES

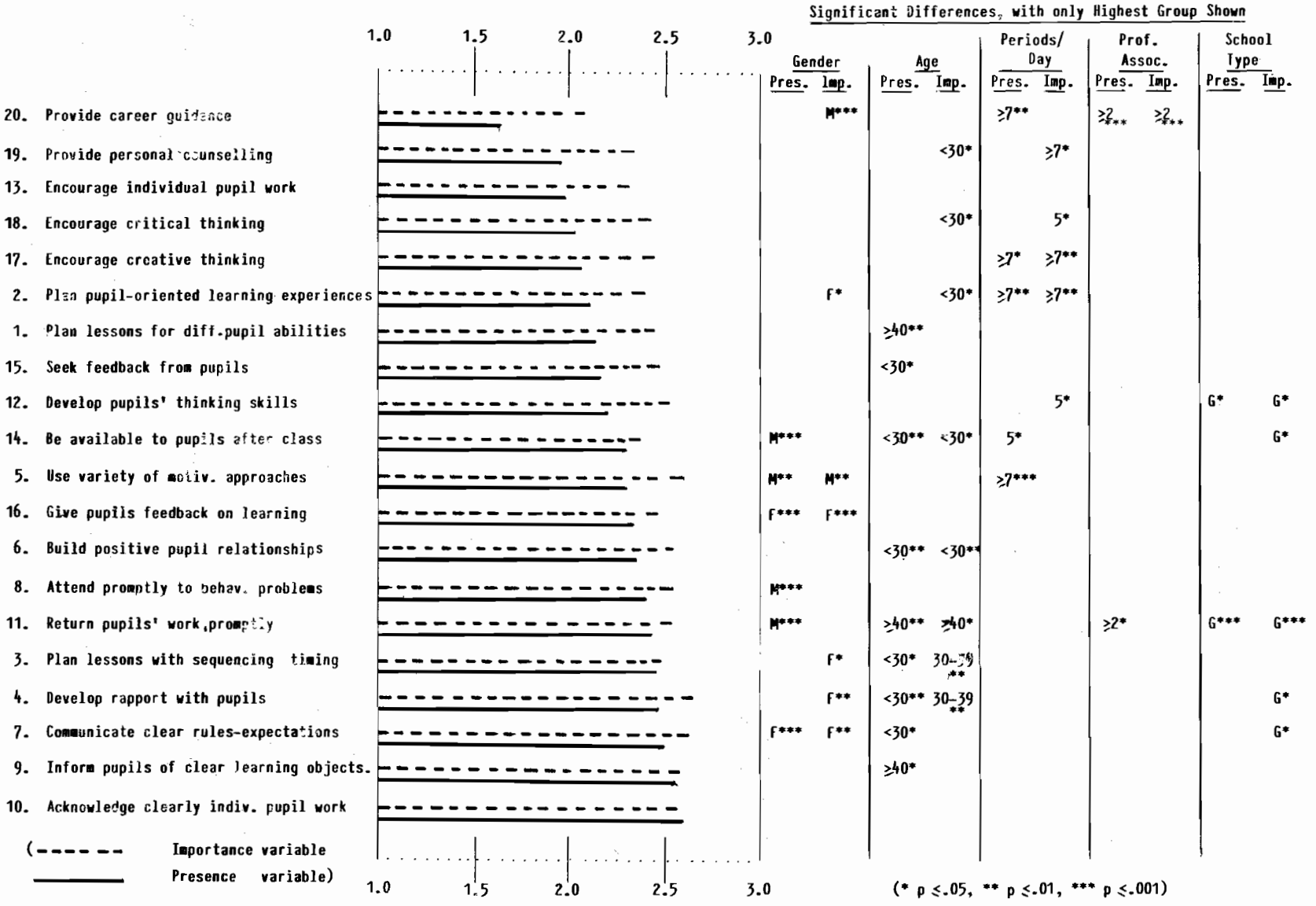


TABLE 4A: RE-GROUPING OF 'TEACHING PRACTICES' VARIABLES BY COMPARING RESPONSE PATTERNS ACCORDING TO 'PRESENCE' AND 'IMPORTANCE'

Grouping of Responses on 'Presence of Teaching Practices' Scale	Relative 'Increase' (or 'Decrease') in Responses on 'Importance for Job Satisfaction' Scale over Responses in 'Presence of Teaching Practices' Scale		
	<0	0 — .25	.25 — .50
1.5 — 2.0	—	—	20, 19, 13
2.0 — 2.5	—	14, 16, 6, 8, 11, 3; 4, 7	18, 17, 2, 1, 15, 12, 5
2.5 — 3.0	10	9	—

TABLE 5: 'TEACHER JOB SATISFACTION' VARIMAX FACTOR PATTERN MATRIX (SHOWING SIGNIFICANT LOADINGS ONLY)

Variable	Factor 1 'Overall Satisfaction'	Factor 2 'Work Orientation'
TC1	60	—
TC2	70	—
TC3	74	—
EW1	74	—
EW2	—	72
EW3	—	71
EW4	—	73
EW5	—	48
EW6	−46	42

3.8 Although many significant differences were found when some of the Background Characteristics were compared with each facet of Work Conditions, Roles and Responsibilities, and Teaching Practices, very few significant differences were found in relation to the two Teacher Job Satisfaction factors. *Table 6* summaries the results of the one-way ANOVAs which show significant differences only in the following:

Age group: with those less than 30 years old rating lower in Overall Satisfaction

Qualification Level: with the non-graduates being significantly higher in Overall Satisfaction

No. of Periods/Day: with those having fewer than six periods per day being more favourable in Overall Satisfaction

Professional Membership: with those having more professional memberships being significantly higher on Work Orientation.

Multiple regression of these variables, with the appropriate use of dummy variables for nominal data, does not however result in a statistically significant result.

3.9 Factor analysis, followed by varimax rotation, of the Conditions of Work variables according to 'presence' and 'importance' separately yielded seven and eight factors, respectively. When factor scores from these two analyses were combined and subjected to a second-order factor analysis, seven higher order factors

TABLE 6: ONE-WAY ANOVAS FOR SOME BACKGROUND CHARACTERISTICS VARIABLES, WITH OVERALL SATISFACTION AND WORK ORIENTATION AS DEPENDENT VARIABLES

VARIABLE	OVERALL SATISFACTION				WORK ORIENTATION		
Personal Characteristics	df	F	P	Comment	F	P	Comment
• Gender	1/924	3.57	.06	NS	0.34	.56	NS
• Age Group	2/924	4.58	.01	≥40 30-39<30**	0.60	.55	NS
• Qualification Level	2/859	8.53	.0002	GCE HONS+ PASS***	0.09	.91	NS
Professional Characteristics							
• Subject Areas	5/791	0.94	.46	NS	1.99	.08	NS
• No. of Periods/Day	3/883	3.62	.01	5<5 6≥7**	0.19	.90	NS
• Professional Memberships	2/850	1.68	.19	NS	3.89	.02	>2 1 0*
School Characteristics							
• School Type	1/288	1.54	.22	NS	2.03	.16	NS
• School Level	2/273	0.69	.50	NS	0.75	.50	NS
• School Status	1/288	0.00	.95	NS	0.75	.39	NS

were produced which would subsequently be used to represent the 66 variables of Work Conditions. The results are summarised in *Table 7*. Only the first three higher order factors would be labelled and interpreted in this paper.

3.10 The first factor (COND. 1) is straightforward, being loaded with both 'presence' and 'importance' factors which in turn are loaded with items like:

1 I feel encouraged to experiment with different strategies and ideas;
2 I have an opportunity to help develop policies in my school; and
3 I have freedom to decide how I do my work.

This factor is therefore labelled "Professional Autonomy".

3.11 The second factor (COND. 2) is, also clear-cut, being loaded with both 'presence' and 'importance' factors which in turn are loaded with such items as:

17 I have the support and cooperation of colleagues;
19 I have sufficient opportunity for professional interactions with other colleagues; and
16 I have responsive students in my class.

This factor is accordingly labelled "Collegial Support".

3.12 Interpretation of the third factor (COND. 3) is, however, a little tricky because similar factors are loaded with opposite signs. The 'presence' factor is loaded negatively, while the 'importance' factor is loaded positively. But the variables that may represent this factor include such items as:

4 the sizes of my classes are reasonable;
5 I have enough free periods during the school week; and
12 the amount of clerical and administrative work I have to do is reasonable.

The label "Incongruent Work Environment" is therefore used for this factor.

3.13 All seven factors were then included

TABLE 7: 'CONDITIONS OF WORK' VARIMAX FACTOR PATTERN MATRICES FOR 'PRESENCE' AND 'IMPORTANCE' VARIABLES, AS WELL AS FOR SECOND ORDER FACTOR ANALYSIS OF THE TWO SETS OF FACTORS. (SHOWING SIGNIFICANT FACTORS ONLY)

	'Presence' Factors							'Importance' Factors							
Variable	CWP1	CWP2	CWP3	CWP4	CWP5	CWP6	CWP7	CWI1	CWI2	CWI3	CWI4	CWI5	CWI6	CWI7	CWI8
1							68								64
2			64												69
3							56								62
4					70					51					
5					68									60	
6	45									55					
7	52									55					
8					38									64	
9					42					66					
10		47								48					
11	41									34					
12					48									67	
13			42									47			
14			44								42				
15			58									36			
16				49							54				
17		65									71				
18		56									40				
19		63										60			
20		49										66			
21		54									48				
22	69												50		
23	69								56						
24	54								46						
25				70					63						
26				65					59						
27				52								59			
28	55								71						
29						63		64							
30						69		77							
31						54		72							
32			63					53							
33			40					43							
Second Order Factors	CWP1	CWP2	CWP3	CWP4	CWP5	CWP6	CWP7	CWI1	CWI2	CWI3	CWI4	CWI5	CWI6	CWI7	CWI8
COND 1							78								77
COND 2		76									74				
COND 3					−69			50						58	
COND 4			74									70			
COND 5	71									71					
COND 6						68			52						
COND 7				69									58		

in the multiple regression using Overall Satisfaction (OS) and Work Orientation (WO) separately as criterion variables. In each case, the Multiple R^2 turns out to be very highly significant ($P \leq .001$), but they account for only 15.0% and 9.7% of the variance, respectively. The results are perhaps best summarised in the form of regression equations as shown below:

$$\begin{aligned} OS = & -.22\ COND\ 3 + \\ & .16\ COND\ 5 + \\ & .16\ COND\ 2 \\ & +.14\ COND\ 1 + \\ & .12\ COND\ 4 + \\ & .11\ COND\ 6 + .02 \end{aligned}$$

$$\begin{aligned} WO = & .21\ COND\ 1 + \\ & .12\ COND\ 4 + \\ & .12\ COND\ 3 \\ & +.11\ COND\ 2 + \\ & .09\ COND\ 7 + .00 \end{aligned}$$

Hence, Incongruent Work Environment is most predictive of Overall Satisfaction. Since the beta weight is negative, one way of interpreting the result is to say that Conducive or Reasonable Work Environment is most highly related to Overall Satisfaction. In the case of Work Orientation, however, it is Professional Autonomy which is most highly predictive.

3.14 Factor analysis, with varimax rotation, of the Roles and Responsibilities variables according to 'presence' and 'importance' separately yielded five to three factors, respectively. When factor scores of these two sets of factors were subjected to a second-order factor analysis, four higher order factors were produced. This represents a considerable reduction of variables from the original 38. The results are shown in *Table 8* and again only the first three higher order factors would be discussed in this paper.

3.15 The first higher order factor (ROLE 1) is loaded by 'presence' and 'importance' factors which are in turn loaded with items like:

11 work on the well being of pupils;
10 work on evaluation of pupil progress; and
8 work on counselling individual pupils.

This factor clearly reflects the teacher's "Pastoral Role".

3.16 The second factor (ROLE 2) is also clear-cut with loadings by two factors which in turn are loaded with such items as:

15 attend national/regional conferences;
14 participate in research activities; and
17 attend teacher union meetings.

Bearing in mind that in Singapore, the Singapore Teacher's Union is mainly concerned with professional activities and hardly concerned with industrial actions, attending teacher union meetings could be a very professional activity. Hence, this factor is named "Professional Development".

3.17 The third factor (ROLE 3) is likewise loaded with similar factors which in turn are loaded with items like:

5 supervision of student teachers;
6 induction of new teachers; and
4 initiating contacts.

Slightly less likely loaded is item 1: share responsibility in school management. Hence, the factor is named "Supervision and Management".

3.18 When multiple regression was carried out with the four higher order factors as predictors and each of the two teacher job satisfaction variables as criterion variables, the Multiple R^2 is found to be very highly significant, even though the variance ex-

TABLE 8: 'ROLES AND RESPONSIBILITIES' VARIMAX FACTOR PATTERN MATRICES FOR 'PRESENCE' AND 'IMPORTANCE' VARIABLES, AS WELL AS FOR SECOND ORDER FACTOR ANALYSIS OF THE TWO SETS OF FACTORS. (SHOWING SIGNIFICANT FACTORS ONLY)

	'Presence' Factors					'Importance' Factors		
Variable	RRP1	RRP2	RRP3	RRP4	RRP5	RRI1	RRI2	RRI3
1			66			60		
2			72			38		
3	68							62
4				43		69		
5				84		79		
6				81		76		
7	42					62		
8	80							72
9			52					57
10	59							79
11	73							81
12					51	37		
13					68		60	
14		52					77	
15		69					78	
16		46					65	
17		77					56	
18		57					54	
19					57		58	
Second Order Factor	RRP1	RRP2	RRP3	RRP4	RRP5	RRI1	RRI2	RRI3
ROLE 1	75							86
ROLE 2		71					79	
ROLE 3				87		72		
ROLE 4			75		−48			

plained is very low in each case. For Overall Satisfaction (OS) as criterion variable, it is only 4.0% while for Work Orientation (WO) as criterion variable, 16.5% of the variance is explained. Again, the results are best shown by the following regression equations:

OS = .13 ROLE 2 +
.11 ROLE 1 +
.10 ROLE 3 + .02

WO = .31 ROLE 1 +
.24 ROLE 2 + .01

Thus, teachers perceive Professional Development as important for their Overall Satisfaction, while they would like to see Pastoral Care as contributory to their Work Orientation.

3.19 For the Teaching Practices variables, factor analysis with varimax rotation has also yielded five and three factors for the 'presence' and 'importance' ratings, respectively. When these factors were further subjected to second order factor analysis, four higher order factors were produced. The results are shown in *Table 9* and again only the first three factors would be interpreted.

3.20 The first factor (PRAC 1) is represented by factors, which in turn are loaded by such items as:

TABLE 9: 'TEACHING PRACTICES' VARIMAX FACTOR PATTERN MATRICES FOR 'PRESENCE' AND 'IMPORTANCE' VARIABLES, AS WELL AS FOR SECOND ORDER FACTOR ANALYSIS OF THE TWO SETS OF FACTORS. (SHOWING SIGNIFICANT LOADINGS)

	'Presence' Factors					'Importance' Factors		
Variable	TPP1	TPP2	TPP3	TPP4	TPP5	TPI1	TPI2	TPI3
1					75		44	
2					47			47
3		51					70	
4				75				78
5				47				61
6				67				64
7		61					71	
8		61					62	
9		58					67	
10		50				50	(49)	
11		54					53	
12	70					66		
13	40					66		
14			61			59		
15			51			63		
16			48			64		
17	75					76		
18	80					77		
19			73			61		
20			67			61		
Second Order Factor	TPP1	TPP2	TPP3	TPP4	TPP5	TPI1	TPI2	TPI3
PRAC 1				79				84
PRAC 2		81					83	
PRAC 3	81					79		
PRAC 4			73		−63			

4 develop a warm, personal relationship with pupils;
6 build positive relationships between students; and
5 use a variety of approaches to gain pupil interest and participation.

This factor is accordingly labelled as "Teacher-pupil Rapport".

3.21 The second factor (PRAC 2) is loaded with the two corresponding 'presence' and 'importance' factors, which in turn are loaded with such items as:

7 communicate clear rules and expectations for pupil behaviour;
9 inform pupils for clear learning objectives; and
3 plan lessons with concern for sequencing and timing.

When these and other significant items are taken into consideration, the factor is labelled as "Pupil Behaviour Control".

3.22 Finally, the third factor (PRAC 3) is loaded with factors which are in turn loaded with items like:

18 encourage critical thinking;

17 encourage creative thinking; and

12 give special attention to developing pupils' thinking skills.

Although these items would suggest that this factor is concerned solely with developing thinking, scrutiny of the other contributory items suggests that the factor covers other aspects of pedagogy. A more appropriate label is therefore "Pupil-oriented Pedagogy".

3.23 Now, combining all four higher order factors in a multiple regression with Overall Satisfaction (OS) and Work Orientation (WO) as criterion variables, the resultant Multiple R^2 is again found to be very highly significant for each of the two criterion variables, although again the variance explained is only 4.9% and 12.2% for OS and WO, respectively. Again the results are best represented by the following regression equations:

$$OS = .15\ PRAC\ 1 + .12\ PRAC\ 3 + .11\ PRAC\ 2 - .00$$

$$WO = .21\ PRAC\ 2 + .18\ PRAC\ 1 + .17\ PRAC\ 3 + .09\ PRAC\ 4 + .01$$

Teachers apparently regard Teacher-pupil Rapport as important for their Overall Satisfaction, and see the need for Pupil Behaviour Control in their Work Orientation.

4.0 DISCUSSION AND CONCLUSIONS

4.1 This study has shown that, for a sample of secondary teachers in Singapore, there are two well-defined dimensions of Teacher Job Satisfaction, with the amount of stress experienced playing opposite roles. Thus, for *Overall Satisfaction,* stress should be minimised, if not eliminated, for teachers to enjoy their practice. In contrast, *Work Orientation* is expected to be stressful, but nonetheless satisfying especially in the attainment of work success.

4.2 In relating the Job Characteristics variables to each of these dimensions, certain factors pertaining to Conditions of Work, Roles and Responsibilities and Teaching Practices have been particularly prominent. The presence of a *Conducive Work Environment,* with teachers able to undertake activities leading to their *Professional Development* and to enjoy the practice of *Teacher-Pupil Rapport,* is presumably a minimal stress situation that could lead to *Overall Satisfaction.* On the other hand, the challenge of *Professional Autonomy,* with teachers able to assume the *Pastoral Role* and to exert better *Pupil Behaviour Control,* could be associated with *Work Orientation* that is expected to be stressful but satisfying.

4.3 The relationships between certain selected Background Characteristics and either the Teacher Job Satisfaction or the Job Characteristics variables are less clear-cut or interesting. In general, however, non-graduates, older teachers and those with less heavy teaching loads were found to manifest greater Overall Satisfaction, while teachers who are members of more professional organisations are better in terms of Work Orientation. That non-graduates have turned out to be more satisfied, overall, with teaching than graduates may seem unexpected in view of the large difference in salaries between the two categories of teachers. But salary is apparently not a crucial determinant, and, in any case, a similar result was obtained by Ho (1985). For the Background Characteristics variables, males, older teachers and

those who join more professional organisations are also generally more positive in their perceptions of Work Conditions, Roles and Responsibilities and Teaching Practices.

4.4 That older teachers have more favourable perceptions than their younger colleagues might appear to be a less desirable situation than the reverse pattern. But if we reflect on the findings of a study by Soh (1984) who conducted a partial replication of an earlier study by Lau et al. (1968) on the motives of student teachers in choosing teaching as a career, we might find a plausible answer. Soh found that whereas the 1968 group were influenced more by such motives as: 'A Noble profession, Influenced by relatives, Influenced by teachers, Suit temperament, Had no alternatives and Financial difficulty'', a significantly higher proportion of the 1981 group gave such motives as: ''Like children, To realise potential, Like to teach, and Prefer to work with children''. The older teachers in the sample of the present study probably include some from the 1968 cohort, while the younger teachers probably include some from the 1981 cohort. The motives cited by the 1968 group are either no longer relevant or more readily satified, whereas those cited by the 1981 group, albeit more desirable and challenging, are nevertheless less easily satisfied or require conditions less easily attained. One interpretation of the age group differences in the present study is that the older teachers are probably more complacent, while the younger teachers have higher self-expectations.

4.5 A rather surprising set of results is that there are no significant differences between schools that differ according to school achievement in examinations (School Status). This is so despite the special feature in the sampling to provide contrasts by selecting schools from the top quartile and bottom quartile in terms of overall academic results and also when the study of the Goh Report (1979) did show a significant relationship between the type of schools by examination results and the morale of teachers. Perhaps some compensatory factors operate which make it, for example, as challenging and satisfying or as frustrating and dissatisfying to teach high fliers or slow learners.

4.6 At this juncture, it might be useful to mention briefly some of the results of the content analysis of qualitative interview responses. In her analysis, Lee (1988) found it convenient to categorise the open-ended statements of sources of enthusiasm into:

I the Teaching and Learning Process Theme;
II the School Environment; and
III the Teacher and Professionalism.

These correspond roughly to the categories of Teaching Practices, Conditions of Work and Roles and Responsibilities in the questionnaire survey. (For the sources of discouragement, an additional category IV, the Education System, was added, but this could be subsumed under the School Environment).

4.7 Group interviews were conducted with a total of 211 teachers in groups varying in size between six and ten teachers each. Each group was asked to list sources of enthusiasm, and discouragement, and each teacher was asked to choose two sources from each list and to explain their reasons for the choices. In comparing the frequency of responses to sources of enthusiasm for the groups

and the individuals, the highest source of enthusiasm for both group (16.3%) and individual (33.2%) responses was: "Teaching and relating to motivated, responsive and well-behaved students". For sources of discouragement, however, the highest frequency for groups (16.0%) was "Working under Supervision", whereas for individuals (20.5%) it was "Coping with teaching constraints". These responses bear a close relationship to the questionnaire findings which show that under Teaching Practices, the highest predictors of Overall Satisfaction and Work Orientation are "Teacher-Pupil Rapport" and "Pupil Behaviour Control", respectively and, under Conditions of Work, the highest predictors are "Conducive Work Environment" and "Professional Autonomy", respectively.

4.8 Assuming that job satisfaction is related to professional excellence, serious attention should be paid to improving the conditions of work so that teachers would be able to fulfil their roles and responsibilities through various teaching practices in a more effective and efficient way. The present study suggests some of the areas that need to be emphasised in school policies and teacher education. With further analyses of the questionnaire responses, especially in relation to the interview results, and with possible implications from cross-cultural comparisons, more specific, and perhaps more definitive, suggestions could hopefully be advanced for the improvement of teacher job satisfaction.

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Sources of Enthusiasm and Discouragement: Another Aspect of Teacher Professional Satisfaction and Its Link with the Quality of Teaching and Learning

Frances Lee Moi Fah

ABSTRACT

This paper examines a set of interview data* gathered from 211 secondary school teachers in Singapore about what enthuses and discourages them in their teaching. The result is an identification and characterization of sources of enthusiasm and discouragement. These are employed to discuss the links between teacher professionalism and its impact on the quality of learning that may arise from the changing roles and responsibilities of the classroom teacher. This has been inferred largely from the five significant sources that have resulted from the content analyses of the interview data. Students have been found to be the dominant source of enthusiasm as well as discouragement. The positive sources for the sample appear to be teaching their own subject and continuing their own learning related to their teaching effectiveness while the non-teaching duties and working environment seem to dissatisfy them. These findings when compared with those of the United States, England and Germany, are rather congruent. Also, these findings suggest that the Singapore teacher's sense of professionalism is argued to hinge upon the teacher's efficacy at providing quality learning with high educational attainment as an outcome.

1. *What is the concern of the study?*

The primary concern centres on the efforts directed at establishing the links between teacher professionalism and the changing roles and responsibilities of the classroom teacher, and the effects these two phenomena have on the quality of learning and in general, education.

Inferences are made largely by drawing upon the sources of enthusiasm and discouragement that have been identified by a sample of 211 secondary school teachers in Singapore.

In the Cox et al. (1982) critique of the national union of teachers in the United Kingdom, i.e. NUT, the view has been that NUT is not a professional body. Instead NUT has been perceived to seek teacher control over all aspects of education in schools such as policy, curriculum, salaries, terms of service, resources, organization and public examinations for the sake of

* The interview data form part of the Singapore Study on Teacher Job Satisfaction in the Five-Nation Cross-National Study, including the United States, England, Germany and Japan. The interviews were conducted by the research team from the University of Michigan, Ann Arbor in May 1987, assisted by the IE (Singapore) Committee comprising members of the Executive Committee of the Educational Research Association of Singapore and staff of the Institute of Education, Singapore.

power and control. The emphasis had not been on the quality of education, for Cox et al. argue that the children who are the clients of teachers and schools have the right to learn. Hence, to be professional according to Cox et al., the involvement of a professional body like NUT is seen as that of improving the standard of educational attainment, morality and learning behaviours of the learners.

Similarly, Waxman and Walberg (1982) observe that to be professional in teaching is to define the knowledge base underlining successful teaching. The main criterion used to gauge the success is the learning that takes place.

The argument for creating the equation between teacher professionalism and quality of education is further augmented by a series of research studies reviewed by Rosenholtz and Smylie (1984). They claim that the academically able and talented enter the teaching profession mainly on intrinsic motivation and they have been considered to be vital for raising the status of the teaching profession in the United States because of the high probability of teaching success. In the Singapore context, Soh (1984) found intrinsic motivation as an important factor influencing a cohort of 1981 student teachers' choice of teaching as a career.

However, whether Soh's sample gauge their future professionalism in terms of their ability to affect students' academic growth has not been examined. In studies carried out by Bredeson et al. (1983), Chapman and Hutcheson (1982) and Litt and Turk (1983), teachers' perceptions of professional accomplishment in terms of being instrumental to students' learning and progress, have been found to have the greatest probability of remaining as teachers. Thus, the implication seems to be that teacher professional satisfaction hinges upon the teachers' sense of efficacy in their own ability to affect students' performance positively.

The relationship between teacher professionalism and the quality of education has been regarded as close and is located in the classroom. The classroom drama is to a great extent emotionally aroused, swaying between levels of enthusiasm and discouragement. The view is held that if a problem prevails, the solution is not to increase the sources of enthusiasm or decrease the negative ones.

The proposition is a cognitive appraisal (Lazarus, 1987) of the changing roles and responsibilities of the main classroom actors. For example, the students have available other sources of information besides the teacher. The academically inclined, motivated and able students come to class sometimes better informed than the teachers while the less academically ones may have access to resources that meet their teenager needs which are not catered for by the teacher or school, thus suggesting that the traditional, conventional instructor role of the teacher is changing with the facilitator and socializing role becoming important.

The suggested mental reframing is located in the theory of dissonance (Festinger, 1957) which talks about attitude change. The idea is not to treat the sources of discouragement, for instance, as conditions that impede successful teaching but to examine them as indicators that the traditional and conventional roles and responsibilities of teachers are changing (Hoyle, 1969). Similarly the students' roles and responsibilities are also changing.

Thus, the argument that to be truly professional is really to define the knowledge base underlining successful teaching, can be taken a step further. The professional teacher does not only define the knowledge base but also be in a position to articulate clearly the criticism that may arise from the proposed solutions. What has been stated is an explanation that places the professional teacher in control of the teaching situation.

Although some of the sources of satisfaction and dissatisfaction appear to be in the teacher's control, there are other equally influential actors. These players are, for example, the school administrators, other

teachers, students and parents. Teachers have identified them as beyond their locus of control (Weiner, 1980). However, the identification and characterization of the sources of teacher professional satisfaction suggest that the teachers have the propensity to attribute the roses and thorns of teaching (Rotter, 1982). This means that teachers may not be in control but it does mean that they are unable to explain the causes.

In short, the teaching profession has been found to be not a bed of roses. The improving situation also does not imply an increase in the sources of enthusiasm; neither does it suggest a decrease in the negative sources as discussed by Menlo et al. (1986) nor does it show that the teachers are doing badly or well. What is depicted is probably a professional picture of the social-psychology of the Singapore teacher and the professional teacher.

2. *How were the interview data gathered?*

2.1 A total of 211 teachers from 14 schools participated. They consisted of 143 secondary school teachers, 48 teachers from the Junior Colleges and 20 of them were from the Pre-University Centres located in secondary schools.

2.2 Two administrative procedures were carried out. The first was a group interview. For the interview 28 groups were formed. The size of each group varied between 6 and 10 teachers. Notes of the group interview were written on newsprint for all participants within the respective group to see and agree upon.

Before the interview, the participants were asked to discuss in pairs for a couple of minutes three questions:

(a) What enthuse them in their teaching?

(b) What discourage them in their teaching?

(c) What recommendations would they make?

The informal discussion was followed by the interviewer taking the group through each of the three questions. As the responses were given, efforts were made at clarifying what the respondents meant in their statements. Also, efforts were made at using as closely as possible the language of the respondents. Their contributions were written on newsprint.

2.3 After the group interviews, the participants were given blank paper to record their own individual explanation. This was the second administrative procedure.

Each participant of the interviewed group had to choose two sources of enthusiasm and two sources of discouragement from the respective newsprint where the group had listed both sources. Each teacher had to give written explanation why the four chosen sources were responsible for their job satisfaction and dissatisfaction.

3. *What was the aim of the interview and study?*

3.1 The group interview and individual explanation were intended to identify and characterize the sources of enthusiasm and discouragement with the aim of understanding teachers' sense of professional satisfaction.

3.2 The positive and negative sources help to provide an insight into what constitutes the priorities of teachers and hence, the theories and practices they subscribe to that underline the action of teacher professionalism.

3.3 However, for the discussion of this paper, inferences are drawn from the interview data on the two sources of job satisfaction to help establish the link between teacher professionalism and the quality of education. The link is ascertained by looking at what teachers perceive to be their main roles and responsibilities in their teaching profession.

4. *How were the interview data analysed?*

4.1 The focus was on the identification and characterization of the sources of

enthusiasm and discouragement in teaching.

4.2 Content analyses were carried out by observing the following schema:

(a) *Interview Questions*

. . . . What satisfy the 28 groups of teachers interviewed?

. . . . What satisfy each of the 211 teachers interviewed?

. . . . What discourage the 28 groups of teachers interviewed?

. . . . What discourage each of the 211 teachers interviewed?

(b) *Categories* were developed from the responses, and

(c) *Re-classification* of the categories was done according to the nature of teaching and working in a school. As a result, observational statements were identified and characterized in terms of the following:

i Pupil Type
ii Teaching Process
iii Professional Matters
iv Administration and Supervision
v Colleagues
vi Working Environment

5. *What are the results?*

Identification of the sources of enthusiasm and discouragement are presented in Tables 1a and 1b. These positive and negative sources are characterized in Tables 2a and 2b. Comparisons are made by referring to Tables 3a and 3b which show the sources of enthusiasm and discouragement among the teachers of the United States, England and Germany.

5.1 Comparisons are made between the 28 groups and the 211 individual explanations. From the comparisons, there seems to be a close correspondence between the group's response and the individual's, indicated in Table 1a. Suggested are perhaps the effects of group influence upon individual choice. Unfortunately, there is no way of establishing the group dynamics at play. For example, in the group interview, some groups practised turn taking, consensus taking and the dominance of some members who spoke all the time while some others became the groups' spokesmen.

5.2 Students (25%, 43%)* and the teaching process (31%, 22%) are found to be very significant sources of enthusiasm while the problematic pupil behaviours (10%, 20%) in terms of ill-discipline and poor learning disposition appear as the fourth source of discouragement for the groups of teachers (Table 1a). However, it assumes only the third position for the individual. Hence, contrary to most observers of teachers' classroom management problems, the ill-disciplined students seem to be less significant than the problems of administration and supervision (33%, 25%). Included in this category is the negative aspect of the teaching dimension (31%, 40%) which is characterized by the teachers having to cope with teaching constraints such as teaching many subjects, levels, heavy workload, big classes and teaching subjects untrained to teach or doing extra-curricular activities (ECA) not trained to run (Table 2a).

5.3 For the individual teacher, the greatest source of satisfaction seems to come from teaching and relating to motivated, responsive, well-behaved and appreciative students including the weak students who make the effort to learn.

5.4 Considering the group and individual response patterns together, the teaching process appears to be a significant source of enthusiasm (31%, 22%) as well as discouragement (31%, 40%). This aspect of the teacher's role and responsibility is classroom-based. It appears as two sides of the same coin. It

* The percentage figures given in brackets (e.g. 25%, 43%) show the weight of the sources as identified by the group and individual respectively.

relates to the primary goal of teaching which is to bring about learning for the pupils as well as for the teacher.

The conditions that foster the effective performance of this role and responsibility seem to be the autonomy over teaching in terms of making decisions about a variety of creative teaching methods, teaching a preferred subject or conducting a preferred ECA, and lastly helping and relating to the young people.

5.5 As a source of discouragement, the significance of the teaching process is probably connected to the practices of school administrators. Table 1b shows the link in terms of their ranking in the group and individual comparison. The sample felt that working with and under supervision, was most discouraging (respectively 33%, 25%).

5.6 The sample also seems to say that coping with teaching constraints, the pressures of an examination and achievement-oriented education system and time-consuming non-teaching duties are high sources of dissatisfaction (Table 2a). This may be largely a problem connected with the highest source of discouragement, i.e. administration and supervision.

5.7 Contrary to general beliefs that colleagues (2%, 0%) (5%, 5%) and the school working environment (9%, 5%) (3%, 1%) are important positive & negative sources, respectively, both were considered by the sample to be the least important as arousal stimuli (2%).

6. *How congruent are the results of the United States, England, Germany and Singapore?*

6.1 Great differences are found in the sample size across the four countries. In comparison, the Singapore size is four times bigger (Table 3a). However, the main sources of enthusiasm and discouragement are almost similar. The positive ones centre around the teacher's main roles and responsibilities which are classroom-based, for example, positive qualities of the good students, recognition and appreciation while the negative sources stem from the practices of school administrators, working environment and the ill-disciplined students.

6.2 Although, like teachers in the other three countries, Singapore teachers had also identified non-supportive administration and parental recognition, and lack of support and appreciation as critical sources of discouragement, they nevertheless had picked supportive, appreciative, and fair administration as an important source of enthusiasm. Hence, this source is found to be the difference between the Singapore teachers and their Western counterparts.

6.3 Although all countries did not consider the material returns of the teaching profession such as pay, status and rewards as important sources of satisfaction, teacher morale was raised. It was found to be a negative source.

6.4 Unlike the other three countries, Singapore teachers did not identify having students showing initiative and independence as an important source of enthusiasm. Similarly, the Western teachers did not indicate the teaching process such as using a variety of creative teaching methods, teaching a preferred subject and running a preferred ECA as important sources of enthusiasm. Also excluded were the pressures of an examination-oriented education system which had been identified by the Singapore sample. Perhaps, these are due to cultural or contextual and cross-national differences which hinge upon the education system.

7. *DISCUSSION*: Are the significant sources of enthusiasm and discouragement indicative of teacher professional satis-

TABLE 1a: IDENTIFICATION OF THE OBSERVATIONS MADE BY 28 GROUPS (484 RESPONSES) & 211 INDIVIDUAL TEACHERS (413 RESPONSES) ON THE SOURCES OF ENTHUSIASM

General Observations of the Sources of Enthusiasm	Frequency in %	
	GROUP	INDIVIDUAL
a) *Nature of Teaching*		
PUPIL TYPE	(24.8)	43.4
1. Teaching and relating to motivated, responsive, appreciative and well-behaved students	16.3	33.2
2. Teaching achievement-oriented students	8.5	10.2
TEACHING PROCESS	(31.4)	21.5
3. Teaching effectively with a repertoire of varied and creative teaching methods	11.4	6.1
4. Teaching a preferred teaching subject and doing a preferred ECA	5.2	8.2
5. Helping and relating to young people	12.8	7.0
PROFESSIONAL MATTERS	(18.2)	15.6
6. Teaching is a life-long vocation	6.4	6.6
7. Teachers are treated as professionals	11.8	9.0
b) *Working in School*		
ADMINISTRATION & SUPERVISION	(11.6)	9.7
8. Having supportive, consultative and appreciative administration	11.6	9.7
COLLEAGUES OR CO-WORKERS	(5.2)	5.0
9. Having supportive, helpful and challenging staff relationships	5.2	5.0
WORKING ENVIRONMENT	(8.8)	4.8
10. The uniqueness of the school	4.5	4.6
11. The social atmosphere of the school	4.3	0.2

TABLE 1b: IDENTIFICATION OF THE OBSERVATIONS MADE BY 28 GROUPS (476 RESPONSES) AND 211 INDIVIDUAL TEACHERS (386 RESPONSES) ON SOURCES OF DISCOURAGEMENT

General Observations of the Sources of Discouragement	Frequency in %	
	GROUP	INDIVIDUAL
a) *Nature of Teaching*		
PUPIL TYPE	(10.3)	20.0
1. Teaching misbehaving, not motivated students	7.9	14.3
2. Teaching students with learning difficulties	2.4	5.7
TEACHING PROCESS	(31.1)	40.0
3. Coping with teaching constraints	14.4	20.5
4. The pressures of an examination and achievement-oriented education system	6.4	7.8
5. Time-consuming non-teaching duties	10.3	11.7
PROFESSIONAL MATTERS	(20.2)	13.4
6. The low professional status of teachers	13.0	9.3
7. Problems of relating to parents & the community	6.2	3.1
8. Teachers' personal problems	1.0	1.0
b) *Working in School*		
ADMINISTRATION & SUPERVISION	(33.4)	25.1
9. Negative aspects of working with administration	8.4	7.8
10. Problems of working under supervision	16.0	8.0
11. Having no recognition & appreciation, criticism & unfair assessment from the administrators	9.0	9.3
COLLEAGUES		
12. Lacking relationships	(2.0)	0.5
WORKING ENVIRONMENT		
13. Inadequate facilities & the routine	(3.0)	1.0

TABLE 2a: OBSERVATIONAL STATEMENTS OF ENTHUSIASM

Characterization of the Group & Individual Observation of Enthusiasm: 484 & 413 Responses, respectively.	Group/ Individual Responses Frequency Counts (%) (Group)	Individual
a) *Nature of Teaching*		
Type of Pupils		
1. *Teaching and relating to motivated, responsive, appreciative and well-behaved students:* (79, 16.3%) [137, 33.2%]		
. . . when students are learning, achieving and making an effort in their studies	(21)	[37]
. . . when students have positive attitudes, are motivated, keen, enthusiastic and interested in their subjects and learning	(18)	[40]
. . . when students are responsive, participative in lessons and well-behaved	(18)	[31]
. . . when students are appreciative, recognizing teachers' efforts and show their gratitude	(22)	[29]
2. *Teaching achievement-orientated students:* (41, 8.5%) [42, 10.2%]		
. . . teaching students who are successful in school attainment, examinations and have achieved success	(25)	[22]
. . . teaching bright, academically inclined, curious and challenging students	(12)	[12]
. . . teaching weak students who put in effort and respond positively	(4)	[8]
Teaching Process		
3. *Teaching effectively with a repertoire of varied and creative teaching methods:* (65, 13.4%) [26, 6.3%]		
. . . when there is a variety of teaching methods and room for creativity	(14)	[4]
. . . when there is autonomy and flexibility over choice of teaching methods, more time for preparation and availability of materials and staff support	(29)	[13]

Table 2a (contd)

. . . when teaching methods work, developing curriculum materials, interesting textbooks and more time to teach than do ECA or administrative duties	(22)	9
4. *Teaching a preferred subject and doing a preferred ECA* (25, 5.2%) 34, 8.2%		
. . . when the subject and ECA are liked and trained to teach	(25)	34
5. *Helping and relating to young people* (62, 12.8%) 29, 7.0%		
. . . when relating and meeting people, interacting and being involved in youth movement and a variety of out-of-school activities	(22)	11
. . . when meeting students' needs, counselling them with discipline problem, influencing and enabling the weak pupils to learn, their moral character and values	(21)	4
. . . having good teacher-pupil relationships	(19)	14
Professional Matters		
*** 6. *Teaching is a life-long vocation* *(31, 6.4%)* *27, 6.6%*		
. . . *having the commitment, motivation and conviction that teaching is a profession, and service-oriented*	*(8)*	*12*
. . . *learning and developing all the time in the subject area and teaching*	*(23)*	*15*
7. Teachers are treated as professionals (57, 11.8%) 37, 9.0%		
. . . when there is professional recognition, social status, high morale and continuous professional development	(18)	9
. . . when remuneration such as pay, holiday, length of working day, advantages like job security and no dress code, commensurates with the professional status	(23)	17
. . . when there is support and appreciation from parents and the community	(10)	3
. . . when teachers are treated like human beings, assessed fairly and with a fair distribution of work	(6)	8

Table 2a (contd)

b) *Working in School*		
Administration and Supervision		
8. *Having supportive, consultative and appreciative administration* (56, 11.6%) [40, 9.7%]		
. . . when administration is supportive, recognizing the teachers' efforts than judging by examination results and perceptive of their ideas and suggestions	(37)	[20]
. . . when administrators praise or show appreciation of teachers' work	(21)	[10]
. . . when there is trust, consultation and interaction between teachers and administrators	(19)	[3]
** . . . when guidelines are given without the interference	(2)	[3]
. . . when administrators have good administration and organization	(2)	[2]
*** . . . when there is leadership and management training	(2)	[2]
Colleagues or co-workers		
9. *Having supportive, helpful and challenging staff relationships* (25, 5.2%) [21, 5.0%]		
. . . when there is recognition from colleagues who are supportive and helpful	(17)	[18]
. . . when colleagues are challenging and who share ideas	(8)	[3]
10. *The uniqueness of the school/a typical school* (22, 4.5%) [19, 4.6%]		
. . . when classes of reasonable size, with good facilities, clean working environment and flexibility, e.g. unexpected early dismissal	(16)	[18]
. . . when there is tradition or reputation and celebration	(6)	[1]

Table 2a (contd)

11. *The social atmosphere of the school* (21, 4.3%) [1, 0.2%]		
. . . when there is social mixing and friendly staff	(6)	[1]
when there is organized staff welfare	(15)	

TABLE 2b: OBSERVATIONAL STATEMENTS OF DISCOURAGEMENT

Characterization of the Group & Individual Observation of Enthusiasm: 484 & 413 Responses, respectively.	Group/ Individual Responses Frequency Counts (%) (Group)	Individual
a) *Nature of Teaching*		
Type of Pupils		
1. *Teaching misbehaving, lazy, not motivated students* (37, 7.9%) [55, 14.3%]		
. . . when students are misbehaving, indifferent and rebellious	(21)	[28]
. . . when students are lazy, lacking in motivation and have negative attitudes	(16)	[27]
2. *Teaching students with learning difficulties* (11, 2.4%) [22, 5.7%]		
. . . when students are academically weak, having no aptitude for science subjects, having poor English abilities, performing poorly in examinations and being too dependent on teachers	(11)	[22]

Table 2b (contd)

Teaching Process		
3. *Coping with teaching constraints* (67, 14.4%) [79, 20.5%]		
. . . having to teach too many subjects and levels, not trained in the teaching of the subject, having no liking for the subject and no preference in teaching the given class level, and untrained to do given ECA	(19)	[19]
. . . having a heavy time-table, big classes, heavy marking and when form teachers are overloaded, floating classes or sessions, high noise level	(32)	[54]
. . . having inadequate teaching resources, too many textbooks	(7)	[2]
. . . having no guidance counselling support and pastoral contact, treating pupils like kids	(3)	[3]
. . . having no opportunities to teach as one really feels like doing, with new teaching methods considered fun and not learning, and a boring routine	(6)	[1]
4. *The pressures of an examination and achievement oriented education system* (30, 6.4%) [30, 7.8%]		
. . . when the concern is over grades and examination results and not on the learning process, students are pressurized	(15)	[13]
. . . having to deal with curriculum changes, completing syllabuses and following the rigid curriculum structure with the arts subjects projected as of less in status than the science subjects, leaving out subjects like commerce	(8)	[6]
. . . when unfair comparisons are made of schools with intake of weak students	(7)	[11]
5. *Time-consuming non-teaching duties* (48, 10.3%) [45, 11.7%]		
. . . having to spend time doing electrical, administrative paper work, attending too many meetings and doing work not trained or qualified to do	(41)	[39]
. . . having too many ECA	(7)	[6]

Table 2b (contd)

Professional Matters		
6. *The professional status of teachers* (61, 13.0%) 36, 9.3%		
. . . when there is no recognition, low morale and status, with misconceptions of what teachers really do and having too many roles	(22)	24
. . . when remuneration like pay, incentives, holidays, working hours and job security, e.g. retirement age and medical for women teachers, does not commensurate with the status of a professional	(21)	7
. . . when promotion, advancement and further development are limited and restricted, with too many workshops and in-service courses to attend	(16)	5
. . . having no incentives to hold positions	(2)	—
7. *Relating to parents and the community* (29, 6.2%) 12, 3.1%		
. . . when parents complain, interfere and pressurize teachers, and a lack of support	(19)	6
. . . when parents are indifferent and having a lack of parent-teacher interaction	(2)	4
. . . when the community interfere and tell teachers what to do	(8)	2
8. *Teachers' personal problems* (6, 1.0%) 4, 1.0%		
. . . when there is conflict between professional and political goals, teachers have to conform to authority and have no privacy, too many restrictions and doing non-profound things	(6)	4
b) *Working in School*		
Administration and Supervision		
9. *Working with the administration* (39, 8.4%) 30, 7.8%		
. . . when administrators are demanding, pressurizing and ambitious, set high expectations and unreasonable demands, e.g. too many projects and meeting deadlines	(14)	10

Table 2b (contd)

. . . when administrators do not trust, are strict, task-oriented, interfere with teaching methods, treat staff like digits and do not admit failure, pressurize staff to perform by emphasizing staff confidential report	(25)	20
10. *Working under supervision* (75, 16.0%)	31, 8.0%	
. . . when there is no consultation, no feedback from and communication with staff, asking for ideas but not acting upon them, too many bosses and high teacher-principal ratio, bored principals	(22)	9
. . . when the administration is too restrictive, rigid, bureaucratic and responsive — reactive to MOE and frequent changes	(18)	1
. . . when administrators have poor leadership with no clear or long term goals, having too many goals to achieve, there is confusion they are not good at discipline.	(13)	9
. . . when there is poor co-ordination between schools and MOE	(5)	2
. . . having too many meetings, long meetings, and meeting after school	(11)	8
. . . having unfair distribution of workload	(6)	2
11. *Having no recognition and appreciation, criticism and unfair assessment from the administrators* (41, 9.0%)	36, 9.4%	
. . . when there is a lack of recognition, support and sympathy from leaders, entertaining complaints	(14)	21
. . . when administration does not show appreciation, constantly criticizes without constructive feedback	(22)	4
. . . when there is unfair staff assessment, judging on the basis of one observation, unequal distribution of work and conducts evaluation informally with students	(5)	11
. . . when administrators hold back teachers' request for transfer, transfer teachers without consent to the headquarters.	(4)	

Table 2b (contd)

Colleagues or Co-workers		
12. *Lacking relationships* (9, 2.0%) 2, 0.5%		
. . . having low morale, mental health problems, staff politics	(9)	2
Working Environment		
13. *Inadequate facilities and the routine* (13, 3.0%) 4, 1.0%		
. . . there is no concern over teachers' welfare and physical needs, e.g. staff-room conditions and toilet amenities	(9)	2
. . . having poor physical facilities like dirty, old buildings and insufficient rooms	(4)	2

TABLE 3A: COMPARISON OF STRONGEST SOURCES OF ENTHUSIASM FOR TEACHERS IN THEIR WORK ACROSS THREE COUNTRIES

Sources of Enthusiasm		56 Teachers U.S. % & N of Responses	66 Teachers England % & N of Responses	67 Teachers Germany % & N of Responses	189 Teachers Total % & N of Responses
I	Good teacher-student relations	4% 5	21% 28	23% 31	17% 64
II	Achievement, success, & progress of students	11% 12	22% 30	10% 13	15% 55
III	Enthusiasm, interest, & responsiveness of students	11% 12	24% 32	7% 10	14% 54
IV	Teachers working & sharing together	18% 20	5% 6	16% 21	12% 47
V	Students showing initiative & independence	8% 9	4% 5	20% 27	11% 41
VI	Parental support	3% 3	1% 1	14% 18	6% 22
VII	Teacher's enjoyment of young people & teaching	19% 21	2% 2	0% -	6% 23
VIII	Positive classroom climate & environment	2% 2	6% 8	7% 10	5% 20
IX	Teachers receiving appreciation, recognition, & respect	1% 1	10% 13*	3% 4	5% 18
X	Supportive administration	15% 17	0% -	0% -	5% 17
XI	Teacher's sense of independence	4% 5	5% 6	0% -	3% 11
XII	Positive material aspects of the job	4% 5	0% -	0% -	1% 5
	Totals	100% 112	100% 131	100% 134	100% 377

Source: Menlo et al. (1986).

TABLE 3B: COMPARISON OF STRONGEST SOURCES OF DISCOURAGEMENT FOR TEACHERS IN THEIR WORK ACROSS THREE COUNTRIES

Sources of Discouragement		43 Teachers U.S. % & N of Responses	62 Teachers England % & N of Responses	50 Teachers Germany % & N of Responses	155 Teachers Total % & N of Responses
I	Uncooperative & disruptive behaviour of students	7% 6	14% 17	35% 35	19% 58
II	Lack of motivation, success, enjoyment & happiness of students	10% 9	17% 21	25% 25	18% 55
III	Excess demand on teacher responsibility, role, & time	26% 22	14% 18	12% 12	17% 52
IV	Lack of appreciation, understanding, status & recognition from the larger community for teachers	19% 16	18% 22	7% 7	14% 45
V	Lack of support & inadequate leadership from administration	15% 13	10% 12	14% 14	13% 39
VI	Low morale, lack of enthusiasm, energy & a sense of meaninglessness for teachers	13% 11	10% 12	0% -	7% 23
VII	Lack of resources & poor working conditions	2% 2	9% 11	2% 2	5% 15
VIII	Difficulties in relationships & understanding between teachers	5% 4	3% 4	5% 5	4% 13
IX	Insufficient pay & lack of promotion	3% 3	5% 6	0% -	3% 9
	Totals	100% 86	100% 123	100% 100	100% 309

Source: Menlo et al. (1986).

faction and how are they related to the quality of teaching and learning?

The main findings seem to be related to the teacher's role in the classroom in terms of how teachers make an impact on students and their learning. The three conditions that facilitate the effective performance of this teacher role seem to be the pupils, teaching process, and school administration and supervision (Wangberg et al., 1982). This situation is probably like what has been considered to be teacher professionalism, discussed by Cox et al. (1982), Waxman and Walberg (1982), and Hoyle (1969).

For example, in the words of one of the teachers interviewed:

> 'If pupils can respond to your lesson positively or they don't understand and ask questions . . . and when they are given work and they do it; the work done may not be perfect but at least, you know that they are listening and doing your work.'

The implication seems to be an emphasis on teacher directed learning. Contrast the above with the negative aspect of the pupil as a source of job satisfaction as described by another teacher:

> 'The poorly disciplined students literally suck blood out of you. You can feel so exhausted and tired after a day's work. Usually you have to keep them quiet so that you can conduct a

proper lesson. When they disturb the class, you have to stop your lesson so often. They have been caught smoking, gambling . . . . Normal pupils can make life very miserable to a form teacher for a whole year.'

Again the emphasis seems to be the pupils and their learning, and the role the teacher plays in the situation. However, undeniably the latter case implies the influence of other sources, for example, the school administration and parents. The discipline problems are not the sole responsibility of the classroom teacher but the concern of the school as well as the home.

Studies (Soh, 1984; Schlechty & Vance, 1983) have shown that people who aspire to become teachers and who enter teaching do so, to a great extent, because of intrinsic or altruistic reasons. Such is the case of the teacher who said:

> 'I join teaching because I like to teach and I am encouraged when I see the expression of my classes that show that they have understood my lesson. I want so much to help them do well . . . .'

This reinforces the point that teaching success according to the intrinsically-motivated teacher is in terms of their ability to affect the academic growth of their students.

The motivation appears as a need and the importance of working with, helping and relating to young people. Hence, it is learning that is stressed by the teacher whose main role is perceived to consist of inducting a lesson so aptly described by yet another teacher:

> 'This motivates me for I feel that I am reaching the kids when I explain and I see the nodding heads and lit eyes . . . makes up for all the marking. I like people, be with them and teaching puts me in touch with the young people who have so much enthusiasm for life and this encourages me.'

Although the pupils and learning, and the intrinsic motivation enable the teacher to perform effectively, the school may erode away some of the confidence. Some of the teachers are not positive or less so when they make the following observation:

> 'Having to follow SIOs, schemes of work and meeting the demand of a number of assignments, we have been assigned to dampen our spirit. It checks creativity as we are afraid that we will be judged according to certain means of measurement.'

Another problem which has been stated to be beyond the control of the classroom teacher to some extent, is the question of additional responsibility. For example, two teachers gave different aspects of a negative source. The first teacher sounded terribly discouraged and disillusioned when she explained:

> 'I was given an ECA that I do not like and after one year I was made head of the ECA. I am not interested in it and whenever I think about it I think of quitting.'

Compare the above situation with the earlier teacher's problem with the normal students who 'literally suck your blood'. In the former case, there was no mention of quitting. Both difficulties or discouragement cannot be considered trivial. To the two teachers, each problem appears as critical. Their situation rests upon their perception of their teacher role and responsibility which is largely classroom-based.

In Sim's (1988) survey of 926 secondary school teachers, two types of professional satisfaction were examined, overall satisfaction and work orientation. He found that opportunities for professional development and teacher-pupil rapport were most predictive of overall satisfaction, whereas work orientation was indicated by professional autonomy, pastoral role and pupil behaviour control. These general findings seem to correspond with the sample's identified sources of enthusiasm and discouragement shown in Table 1a.

Promotion in terms of professional development was identified by some teachers as a source of discouragement as explained by one teacher:

> '. . . the policy encourages all the good teachers to become administrators, i.e. promotion is to become a vice-principal or principal.'

The picture that emerges seems to stress the traditional and conventional roles and responsibilities of teachers who prefer to be classroom instructors whereas their sources of dissatisfaction suggest that they have been playing multiple roles. This change reflects the societal trends of urbanization and modernization, a situation described by Hoyle (1969). But if professionalism is towards the realization of high educational attainment and morality as argued by Cox et al (1982), then, the overwhelming concern with the pupils, their learning and the teaching process becomes vitally important for the achievement of professional satisfaction. Hence, seeing professional accomplishment as a sign of teacher professionalism can be said to be the hallmark of the Singapore sample.

The negative sources such as working with the administration, working under supervision, coping with teaching constraints and doing time-consuming non-teaching duties can be transformed into positive sources if teachers begin to understand the changes. With understanding, they will see that their roles and responsibilities have multiplied and they are no longer just classroom instructors only.

However, the mental reframing (Festinge, 1957; Lazarus, 1986) should not only be on the part of the teachers. The school administration and other educational agencies are equal partners in bringing about the change.

The most important finding that has surfaced is the close link between teacher professionalism and the quality of education. The Singapore teacher is found to be concerned with his/her pupils and their learning. This has been repeatedly emphasized throughout the discussion. As a result, the professionally oriented teachers are equally concerned with the teaching process through which they affect their pupils' learning. Because of this, they are enthused by the varied and creative methods of teaching, inducting and instructing their preferred teaching subject and ECA, and helping and relating to young people. These sources of enthusiasm are within their own control. The teachers seem to relate this to the kind of autonomy they have, which seems to lie within their classroom.

To enable the Singapore teacher to function with self efficacy, the other school actors like the principal, vice-principal, heads of departments, subject co-ordinators, etc., are found to be important sources of satisfaction as well as dissatisfaction.

The collegiate and school environment have not appeared as important sources as expected. Perhaps, the collegiate factor is a potential source of professional satisfaction. This is based on the assumption that improving the teaching process is a collective rather

than an individual enterprise and that analysis, evaluation and experimentation in concert with one's colleagues set the conditions under which teachers become effective (Ashton et al, 1983; Little, 1982; Metz, 1983; Walberg and Waxberg, 1985). Also, being effective has been argued to be part and parcel of being professional. Furthermore, the arguments have been on the changing roles and responsibilities of teachers; one of which is having a responsibility to not only the students but to the colleagues in the profession as well.

To conclude, throughout the discussion there has been no attempt to define the concept of professionalism and what constitutes teacher professionalism. This is deliberate as the main focus is to address the emotional content of enthusiasm and discouragement. In the process, notions of what is meant by teacher professionalism are alluded to by the kind of professional satisfaction that engages the sample of 211 secondary teachers interviewed.

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The Ability of Secondary School Students to Imagine Possibilities

Belinda Charles

ABSTRACT

This study of student thinking used the Test of Judgmental Ability, adapted from E A Peel, to investigate the thinking patterns of adolescents in Singapore secondary schools. The patterns of thinking revealed by the test scores were seen against the background of Piagetian Formal Operations and Lunzer's description of the adolescent's Acceptance of Lack of Closure (ALC).

The study revealed that the student's ability to imagine possibilities beyond a given situation increased with age. At the same time, his tendency to be limited by given circumstances decreased as he grew older.

There were some differences in performance between boys and girls in the sample but these differences did not account for much of the variance in scores as compared to age.

The home environment, as represented by parental educational experience, and the academic ability of the student were also considered for their possible effect on student thinking. Correlations between these measures and student scores were not practically significant, and no conclusive statements could be made therefore about the relationship.

The Problem

In a meeting of General Paper teachers from pre-university centres and junior colleges in Singapore in 1978, a common concern that emerged was about the apparent inability or reluctance of 'A' level students to think. This was stressed again among a meeting of junior college departmental heads of English, when they came to discuss a common viable approach to the General Paper. It was found that students seemingly prefer to regurgitate and to reproduce copiously from reference tomes than to commit themselves to original ideas. Some of the current dependence on model answers and examination notes may well reflect the same mental atrophy.

For the teacher who believes in helping every student towards his potential, this is frustrating. The teacher knows theoretically that the process of learning is related to thinking, yet he seems to achieve the former only at the expense of the latter. If the student is to 'learn' his Geography or his Chemistry, it often appears that he copes only through rote-learning of a heap of facts. Learning by rote and thinking seem to pull in different directions.

Yet this is surely not the real case. We know that by thinking, we learn more and at greater depth. The question is to connect the two processes so that they pull in tandem. However, this is far from common. Abercrombie (1960) observed that 'A' level students who were well grounded in scientific facts, did not always use scientific ways of thinking to solve problems.

She noted that two or three years in the university did not improve these processes of thinking much either. Her observations would apply as much to the local scene. As a departmental head of English for some years, I have come across Science graduates who could not teach the 'A' level General Paper because they never studied it in the university (!) and English Arts graduates who could only teach a text if it had been on the university readings.

It is very clear that our students can pass examinations showing they have 'learnt' (in a limited sense). It is not at all clear how our students are thinking while in that process of learning. Perhaps this is aggravated by the fact that teachers are not very sure how thinking is structured, and how they want their students to think. Most of them know what they want in the finished product; they value the original opinion, the imaginative essay, the assignment that can tie points together; but they are not quite sure how one student is able to do this and not another.

Hence a study of processes in thinking in adolescence may not be amiss. If it is possible to identify the various processes that initially lead an adolescent away from the child's specific mode of looking at things into a thinking based on hypothesising and the testing of hypotheses, it may increase understanding about thinking. If the development from concrete thinking to generalisation can be traced, teachers may feel that there is some light at the end of the tunnel. At any rate, an awareness of when changes take place and the rate of these changes, and how they affect different age groups can make it easier for the teacher to build that foundation of conceptualisation that will lead to active learning as opposed to a more passive mode.

The process of thinking that an adolescent undergoes is probably underscored by the change in pace between the primary and the secondary school. The curriculum changes both in content and demand. Material is increasingly based on the student's ability to see possibilities rather than the restricted reality of actual situations. This can be seen in the introduction of History, Geography and Literature to secondary school students. In History, he is asked to learn, initially in a more descriptive sense, events of the past. But the objectives of the syllabus make it quite clear that there are certain conclusions to be drawn, certain patterns to be observed. Similarly in Geography, the young adolescent learns about land forms and how these influence occupational modes and patterns of living. Literature begins innocuously enough with an interesting story, only for students to derive from it conclusions about characters and about the consequences of certain behaviours. Constantly the emphasis is on relationships, and the successful student is the one who can go from 'describer' thinking to 'explainer' thinking (Peel, 1965). In other words, the student is expected to do more than just describe what he sees; he must attempt to put an explanation to it; he must postulate possible relationships.

This, of course, is very much linked to the ability to generalise. The ability to classify is practised already by the primary school child. As he progresses through the primary school years, the child orders his experience and sees greater meaning as he identifies and separates his experiences into various classes, differentiated by some valid criterion. But the primary school child, in the stage that Piaget calls 'concrete operations' carries out this operation, as the name suggests, based on concrete experience, on what he actually experiences. He sorts out his experiences by interaction with past experiences.

On the other hand, the adolescent in secondary school classifies more than things; he classifies propositions. In addition, he can tolerate the possibility of there being other members in a classification that he may not be directly acquainted with. The ability to generalise in this manner demonstrates the greater flexibility of the adolescent. He has available 'a large number of cognitive operations with which to attack problems' (Ginsberg & Opper, 1969). Among these cognitive operations is the manipulating and transforming of functions. The adolescent also isolates relevant variables and deduces relations between these variables, something he is able to do because he begins in the realm of the hypothetical and imagines all

the possible determinants of the result (Ginsberg & Opper, 1969). These cognitive operations follow the rules of the logical model Piaget calls the INRC group, as well as a pattern he calls a 'combinatorial system'.

What differentiates the child of seven to eight years old and the child of eleven to twelve years is the ability of the latter to understand infinity, to tolerate not knowing the limits. This can be seen in many ways. The child who wants to know what is the biggest number in the world is also the one who wants to know who are the 'good guys' and who are the 'bad guys' in the story. If soldiers were 'bad' in one movie, they cannot be 'good' in another movie. He is a long way from the adolescent who can understand that any number divided by zero gives infinity, that a circle has an infinite number of sides, and that Richard the Lionheart could be both a gallant soldier and a less-than-effective king.

What brings the transition from one to the other is the growing tolerance for open-ended situations, a tolerance that comes as the adolescent subordinates 'reality to possibility' (Inhelder & Piaget, 1958). And even as reality becomes secondary to possibility, the adolescent turns from statements of the particular and the specific to statements couched in general terms, seeing the latter as a more significant mode of perception. Generalisation helps him to understand his world and his experiences more.

The attainment of this greater tolerance for open situations as opposed to closed situations is sometimes called maturity or experience by teachers and onlookers. But whatever it is called by the layman, it is rather obvious that the replacement of a fixed inflexible certainty with the ambiguity of various possibilities is a necessary part of an adolescent's thinking equipment. The teenager who cannot yet make the transition is stunted in his thinking; he cannot go very far if he restricts himself to unequivocal situations. To him, Macbeth remains a savage butcher, Lear a rather unfortunate father of undutiful daughters. But it is not only the complexities of life as presented by the humanities that are lost to him. So is the world of nuclear physics.

This is very well illustrated in Bronowski's (1973) description of Werner Heisenberg and the Principle of Uncertainty:

> *"It (the Principle of Uncertainty) is a robust principle of the everyday. If an object (a familiar face, for example) had to be* **exactly** *the same before we recognised it, we would never recognise it from one day to the next. We recognise the object to be the same because it is much the same; it is never exactly like it was; it is tolerably like. In the act of recognition, a judgment is built in — an area of tolerance or uncertainty. So Heisenberg's principle says that no events, not even atomic events can be described with certainty, that is, with zero tolerance . . . Yet the Principle of Uncertainty is a bad name. In science or outside it, we are not uncertain; our knowledge is merely confined within a certain tolerance. We should call it the Principle of Tolerance."*

Thus much of the adolescent's thinking would seem to be contingent on his ability to see possibilities and to tolerate ambiguity, for with this perspective, he begins to free himself from the concrete and starts to hypothesise with second-order relations (Lunzer, 1973). Alongside this faculty, the adolescent also begins to perceive relationships, often verbally, and to attribute greater significance to conceptual combinations that cover more possibilities.

In fact, a further characteristic of the secondary school is its greater use of and, in fact, dependence on the verbal medium as a means of assessment. This is because language is an expression of perceived relationships, as can be seen both in the Arts and in the Sciences.

The Background

The study of adolescent thinking in secondary school necessarily considered the involvement of the last two Piagetian stages and the transition from one to the other. The move from concrete operations to formal operations should be demonstrated by the emergence of operations hitherto not evident or evident only in a limited sense. An operation is "a means for mentally transforming data about the real world so that they can be organised and use selectively in the solution of problems" (Inhelder & Piaget, 1958).

In contrast to Piaget's INRC group and propositional logic models which he postulated as the structures present in formal operations, this study looked into Acceptance of Lack of Closure (ALC) as formulated by Lunzer (1973). ALC was seen in the light of an alternative structure that appears in the thinking of adolescents. However, ALC was measured as it was expressed in a verbal medium (as in Peel, 1966) and not as demonstrated in mathematical operations (as in Collis, 1972) or in scientific experiments (as in Inhelder & Piaget, 1958).

In this study, the adolescent who took the given content as decisive, who failed to or would not reconcile opposing conclusions and who did not conceive of unstated possibilities was performing a kind of "premature closure". In so doing, he was still controlled by concrete thinking. Halford (1970) points out that in acquiring concrete operations, children will need to combine judgments and reorganise them to give unique results, thus achieving closure. In other words, the child at the stage of concrete reasoning depends on immediate closure for a situation to be meaningful (Collis, 1978).

The adolescent, however, who takes account of all evidence, measures the inadequacy of such evidence and supplements it or acknowledges its lack from his store of general knowledge has shown greater tolerance for unclosed operations. He can withhold closing while he considers the effects of different variables in the problem.

The Study

I took my study of secondary school students from a sample of pupils in six schools. The composition of the sample is found in Table 1.

Students from Secondary 1 to Secondary 4 classes in the express stream of these schools were randomly selected. The sample ultimately consisted of 200 subjects for each age group (Table 2).

Students in the sample were asked to respond to 10 anecdotes, 7 of which Peel had experimented with in the UK and 3 independently constructed, but of logically similar material.

TABLE 1: COMPOSITION OF SECONDARY SCHOOLS IN SAMPLE

Type of Secondary School	Single Sex		Mixed	Total
	Boys	Girls		
Mission schools	1	1	0	2
Government schools	0	0	4	4
Total	1	1	4	6

TABLE 2: COMPOSITION OF SUBJECTS IN SAMPLE

Age Group	Male	Female	Total
13	100	100	200
14	100	100	200
15	100	100	200
16	100	100	200

The format of each anecdote was as follows:

Irrelevant leading statement	Only brave pilots are allowed to fly over the island of Sentosa.
Limitation imposed by other circumstances	One day a fighter pilot, flying over Sentosa, collided with an aerial cableway and cut a main cable, causing some cars to fall to the sea below.
Short happening which is not sufficient to form a judgment as required by question	Several people were killed.
Question respondent has to answer	Was the pilot a careful airman?

Subjects responded by choosing one of three alternative answers to the question which ended each episode. The alternatives allowed the subject to agree with the question, to disagree or to say he was unable to decide. In addition, subjects had to complete the alternative chosen by giving their reasons.

In the scoring, more attention was given to the reason rather than the choice of an alternative. The three alternatives were so worded as to make the subjects aware that any of the three choices was acceptable. However, it was the reasons given that contained the real value of the answer.

The answers categorised were as follows:

Level 1 *where the answer was irrelevant or merely tautological*

Level 2a *where the answer was decided solely by the obvious circumstances in the anecdote*

Level 2b *where the answer was decided by the obvious circumstances but also supported by other circumstances and often the subject's own awareness*

Level 3 *where the answer showed an awareness of other possibilities not mentioned in the anecdote*

As the categories were in an ascending order of judgmental ability, Levels 1, 2a, 2b and 3 were given a weighting of 1, 2, 3 and 4 respectively and the total score was the sum of the item-scores so awarded.

The following are examples of anecdotes used in the test:

When Jill started work, she saved some of her money in order to take her younger sister, Anne, for a holiday to Cameron Highlands. During this holiday, the girls went for a walk in the hills and Anne carried the rucksack containing their lunch and their money. The path was slippery and Anne stumbled, dropping the rucksack down a steep cliff. They looked down at it and Jill said, "I've got a good mind to throw you down after it."

Was Jill kind to her sister?

David comes from a well-to-do family and has gone for a holiday to Japan and the United States. Recently, David sat for a Maths test and did very badly. His teacher was disappointed with him. Some of his classmates did better than he did.

Do you think David was a hardworking boy?

The Results

The total scores as well as the scores of different level answers are presented in Table 3 while the analysis of variance in the age groups for both the total scores and the scores of different level answers is presented in Table 4.

It can be seen that there is an increase in the mean scores with age. An analysis of the variance (ANOVA) in the different age groups revealed that the variance was significant at the 0.05 level, the level of statistical significance adopted for this study. A pairwise comparison showed that there was not only significant difference between the mean scores at age 13 and age 16, but also significant difference between age 13 and age 14, as well as between age 15 and age 16.

In other words, the mean total scores in this test of judgmental ability showed that secondary school students had increasingly higher scores with age, that is, secondary school students were increasingly able to invoke possibilities beyond the given context as they grew older. The change seemed to take place more clearly in the transition from age 13 to age 14, and from age 15 to age 16.

In a breakdown of the mean at different ages for each of the sub-scores, it was noticed that while Levels 1 and 2a showed a decrease in the mean score with age, Levels 2b and 3 showed an increase in the mean score. In other words, younger students showed a greater tendency towards tautological answers and answers limited to one circumstance, while older students showed an ability to look at more than one cir-

TABLE 3: MEAN SCORES AND STANDARD DEVIATIONS OF AGE GROUPS FOR JUDGMENTAL LEVELS

Age Group	N	Judgmental Levels				Total Scores
		Level 1	Level 2a	Level 2b	Level 3	
13	200	0.50(0.86)	3.09(2.07)	3.29(1.98)	3.14(1.93)	29.10(4.18)
14	200	0.25(0.57)	2.21(1.70)	3.61(1.85)	3.93(2.05)	31.34(3.75)
15	200	0.11(0.39)	1.62(1.60)	4.45(1.65)	3.82(1.90)	31.97(3.41)
16	200	0.06(0.26)	0.62(1.08)	5.09(1.68)	4.24(1.78)	33.46(2.58)

TABLE 4: ANOVA IN AGE GROUPS FOR JUDGMENTAL LEVELS AND TOTAL SCORE

Dependent Variable	Source	df	Sum of Squares	Mean Square	F-value	pr>F	Pairwise Comparisons			
							13-14	14-15	15-16	13-16
Level 1	Between	3	23.28	7.76	24.34	0.0001	*			*
	Error	796	253.86	0.32						
	Total	799	277.14							
Level 2a	Between	3	642.57	214.19	78.63	0.0001	*	*	*	*
	Error	796	2168.39	2.72						
	Total	799	2810.96							
Level 2b	Between	3	399.37	133.12	41.37	0.0001		*	*	*
	Error	796	2561.39	3.22						
	Total	799	2960.76							
Level 3	Between	3	127.85	42.62	11.60	0.0001	*			*
	Error	796	2925.43	3.68						
	Total	799	3053.28							
Total	Between	3	1969.28	656.43	52.67	0.0001	*		*	*
	Error	796	9919.81	12.46						
	Total	799	11889.09							

* Significant difference between age groups at 0.05 level

cumstance and to invoke possibilities beyond those given in the situation.

The difference in the mean scores for each group was significant for every level of answers, when an ANOVA was performed. A pairwise comparison showed that the difference in mean scores between age group 13 and age group 16 was always significant as well.

The scores of girls and boys were also analysed separately (Table 5). When total scores were considered, it could be seen that male scores increased with age. An ANOVA (Table 6) further showed that the increase was significant not only between the youngest and oldest age groups, but also between consecutive pairs of age groups. When different levels of

TABLE 5: MEAN SCORES AND STANDARD DEVIATIONS OF MALE AND FEMALE AGE GROUPS FOR JUDGMENTAL LEVELS

Age Group	N	Judgmental Levels				Total Scores
		Level 1	Level 2a	Level 2b	Level 3	
Males						
13	100	0.63(0.97)	3.01(2.18)	3.52(2.12)	2.85(1.92)	28.55(4.40)
14	100	0.28(0.60)	2.27(1.80)	4.00(1.84)	3.43(1.94)	30.70(3.71)
15	100	0.11(0.37)	1.34(1.36)	4.81(1.51)	3.73(1.87)	32.18(3.23)
16	100	0.04(0.24)	0.51(1.10)	4.99(1.73)	4.46(1.79)	33.81(2.50)
Females						
13	100	0.37(0.71)	3.16(1.96)	3.05(1.80)	3.43(1.90)	29.64(3.90)
14	100	0.21(0.54)	2.14(1.59)	3.22(1.78)	4.42(2.04)	31.99(3.71)
15	100	0.11(0.40)	1.90(1.77)	4.09(1.72)	3.91(1.93)	31.76(3.58)
16	100	0.08(0.27)	0.73(1.05)	5.18(1.64)	4.01(1.76)	33.10(2.62)

TABLE 6: ANOVA IN MALE AND FEMALE AGE GROUPS FOR JUDGMENTAL LEVELS AND TOTAL SCORES

Dependent Variable	Source	df	Sum of Squares	Mean Square	F-value	pr > F	Pairwise Comparisons			
							13-14	14-15	15-16	13-16
Males										
	Between	3	20.81	6.94	18.42	0.0001	*			*
Level 1	Error	396	149.10	0.38						
	Total	399	169.91							
	Between	3	355.95	118.65	42.86	0.0001	*	*	*	*
Level 2a	Error	396	1096.13	2.77						
	Total	399	1452.08							
	Between	3	143.10	47.70	14.52	0.0001		*		*
Level 2b	Error	396	1301.34	3.29						
	Total	399	1444.44							
	Between	3	134.67	44.89	12.68	0.0001			*	*
Level 3	Error	396	1401.81	3.54						
	Total	399	1536.48							
Females										
	Between	3	5.13	1.71	6.70	0.0003				*
Level 1	Error	396	101.05	0.26						
	Total	399	106.18							
	Between	3	298.69	99.56	37.47	0.0001	*		*	*
Level 2a	Error	396	1052.19	2.66						
	Total	399	1350.88							
	Between	3	285.85	95.28	31.68	0.0001		*	*	*
Level 2b	Error	396	1190.86	3.01						
	Total	399	1476.71							
	Between	3	49.63	16.54	4.53	0.0041	*			
Level 3	Error	396	1446.05	3.65						
	Total	399	1495.68							
Total	Between	3	626.73	268.91	17.19	0.0001	*		*	*
Score	Error	396	4813.27	12.15						
	Total	399	5440.00							

* Significant difference between age groups at 0.05 level

judgment were considered separately, it appeared that the higher the judgmental level, the later is the age range at which male students change significantly in their mean scores.

The performance of female subjects likewise showed an increase in mean total scores with age. However, the ANOVA (Table 6) showed that the difference was significant only between ages 13 and 14 and not between other consecutive pairs of age groups. When considering the female response to different levels, it could be said that they seemed to follow the overall trend except in Level 3. It would appear that unlike the other judgmental levels, Level 3 responses invoking possibilities outside the given context did not significantly increase in females between ages 13 and 16.

There would therefore appear to be some differences between male and female performance in judgmental ability. These are also depicted in Figures 1 to 4 (see Appendix). It would appear from these graphs as well as the earlier tables that significant differences occur when it came to higher levels of judgment. When offer-

ing explanations to judgments that were limited to the given circumstances (Level 2b), females seemed to show a steady and substantial increase from age group to age group. On the other hand, males increased in their mean scores fairly substantially in the earlier age groups but the increase is less perceptible between ages 15 and 16. As a result, the mean scores of the females which were hitherto lower than those of the males in this judgmental level, ultimately reached a higher score than the males did at age 16.

But while females showed a steady and substantial increase in their ability to reason within a given set of circumstances, the development in their ability to invoke outside circumstances was rather more erratic. Thus after a sharp increase in mean scores between age groups 13 and 14, the scores peter off so that at age 16, the females' mean score is overtaken by that of the males who have maintained a steady and substantial increase in mean scores from ages 13 to 16.

It would appear from this therefore that while there was little difference between males and females in that they showed roughly similar declining scores in the lower judgmental levels, there is a marked difference in their performance in the more sophisticated levels of judgment. While females seemed to steadily develop in their ability to offer explanations within given circumstances, males seemed to develop substantially and positively in their ability to invoke circumstances beyond the context.

The study also investigated the possible relationships between judgmental levels and the following variables:

- academic achievement (as represented by PSLE aggregate scores)
- reading ability (as represented by scores on the SRA placement test)
- father's educational level (as represented by

TABLE 7: CORRELATIONS OF TEST OF JUDGMENTAL ABILITY SCORES AND ACADEMIC ACHIEVEMENT MEASURES

	Test of Judgmental Ability	Primary School Leaving Exam Aggregate	SRA Reading Lab IIIB Placement Score	SRA Reading for Understanding Placement Score
Level 3 Response Score	0.84*	0.18*	0.22*	0.24*
Test of Judgmental Ability		0.21*	0.33*	0.39*
Primary School Leaving Exam Aggregate			0.28*	0.45*
SRA Reading Lab IIIB Placement Score				0.48*

* Statistically significant at 0.05 level

TABLE 8: CORRELATIONS OF TEST OF JUDGMENTAL ABILITY SCORES AND PARENTS' EDUCATIONAL LEVELS

	Test of Judgmental Ability	Parents' Educational Level	Father's Educational Level	Mother's Educational Level
Level 3 Score	0.84*	0.14*	0.13*	0.11*
Test of Judgmental Ability		0.15*	0.14*	0.12*
Parents' Educational Level			0.92*	0.87*
Father's Educational Level				0.60*

* Statistically significant at 0.05 level

TABLE 9: STEPWISE REGRESSION OF INDEPENDENT AND INTERVENING VARIABLES ON THE ABILITY TO IMAGINE POSSIBILITIES

Variable entered	R square	RSQ change	F-value*
Age	0.1580		149.72
Verbal Ability	0.2041	0.0461	102.18
Academic Achievement	0.2235	0.0194	76.39
Father's Education	0.2296	0.0061	59.23
Gender	0.2307	0.0011	47.63
Mother's Education	0.2313	0.0006	39.78

* All F-values are statistically significant at 0.05 level

years in school)

- mother's educational level (as represented by years in school)

While correlations were significant at the 0.05 level (as seen in Tables 7 & 8), they were also low.

A step-wise regression (Table 9) was performed to see how much the above variables contributed to the variance in the judgmental level scores. The variables — age, verbal ability, academic achievement, gender and parent's education — were found to have contributed to 23% of the variance. Of these variables, age accounted for the greatest amount of the variance.

Conclusions

The various analyses have shown that age is the dominant factor accounting for differences in judgmental level as shown by the test scores. In most of the sub-scores, the most dramatic change took place between ages 13 and 14.

Possible variance attributable to sex differences, home environment as contributed to by parent's length of educational experience, was

far less, though academic achievement had a greater relationship with judgmental ability than did the other two factors.

It is therefore possible to conclude that an ability to invoke possibilities beyond what is given increases with age. Circumstantial judgments, the largest number of which came from 13 year olds, latched onto a circumstance in the situation that answered the question to the exclusion of other factors. The circumstance was usually presented in concrete terms:

"Jill was not kind to her sister because she wanted to throw her sister down the cliff."
"The pilot was not careful because he crashed into the cable cars."
"David was not hardworking because he failed his Maths test."

In Lunzer's terms, the children's inclination towards neatness and definite-ness of solution shows premature closure in a very clear way.

More in the older age groups were able to give responses that attempted to balance the various factors contained in the situation. Responses of this nature still ultimately made an absolute judgment but tried to relate the other variables logically at the same time.

"Jill was kind to her sister, even though she got angry with her. This was shown by her saving up money to bring her sister along on the holiday."
"The pilot was not careful because he should have known that there were cable cars in the area."
"David was hardworking but perhaps he failed because he forgot to study in his excitement over the holiday trip."

The definite-ness of judgment is still there but the subject feels the necessity of logically disposing of the other factors. This shows there is still a tendency to premature closure.

The highest level of judgment in this study shows an ability to take each variable separately, weigh it against the rest, and bring in variables from their own experience.

"I don't know whether Jill was unkind. People do say things in anger and not really mean it. Anyone would have got angry if his hard-earned money was lost."
"I don't know if the pilot had been careless. Perhaps he had fallen ill at that moment, or had lost control of his airplane."
"I can't tell if David was hardworking. Some people just can't do Maths even if they work hard."

These responses show an ability to delay judgment. A favourite phrase used was *"It depends"*. Subjects could withhold closure, could tolerate lack of closure.

The fact that age contributes so much more to the difference in scores in the sample than the variables of sex, academic achievement and home environment would tend to confirm that judgmental ability is not a development contingent on individual differences. Rather subjects seem to develop their judgmental ability with maturity, relatively independent of these differences. This lends weight to Collis's assertion that an Acceptance of Lack of Closure (ALC) has an enabling role to play in the development of thinking or formal operations. It also bears out Lunzer's proposition that the same Acceptance of Lack of Closure is a general structure that can be detected in formal thinking.

Interestingly, though older subjects show more of the responses that accepted lack of closure and though the scores for the highest judgmental level increase significantly with age, yet even in the oldest age group, the largest number of responses were circumstantial judgments albeit accompanied with explanations that attempted to balance the various circumstances logically. It would appear therefore that even at age 16, adolescents are not entirely comfortable about delaying judgment, about considering variables outside the given context.

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Appendix

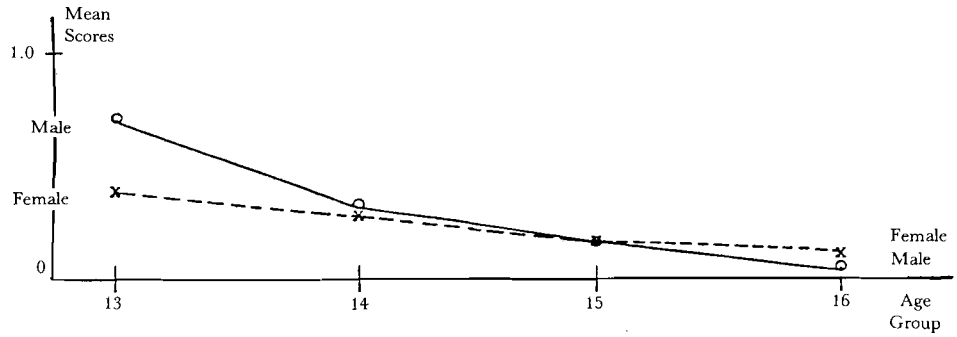

FIGURE 1: COMPARISON OF MALE AND FEMALE MEAN SCORES IN AGE GROUPS 13-16 FOR JUDGMENTAL LEVEL 1

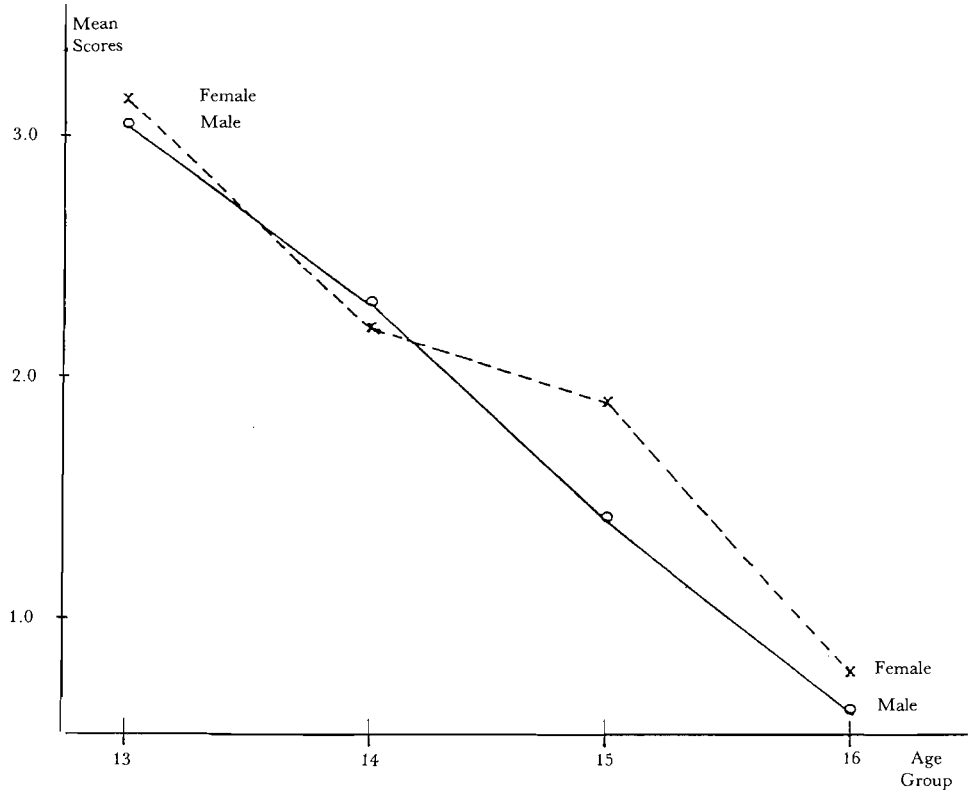

FIGURE 2: COMPARISON OF MALE AND FEMALE MEAN SCORES IN AGE GROUPS 13-16 FOR JUDGMENTAL LEVEL 2A

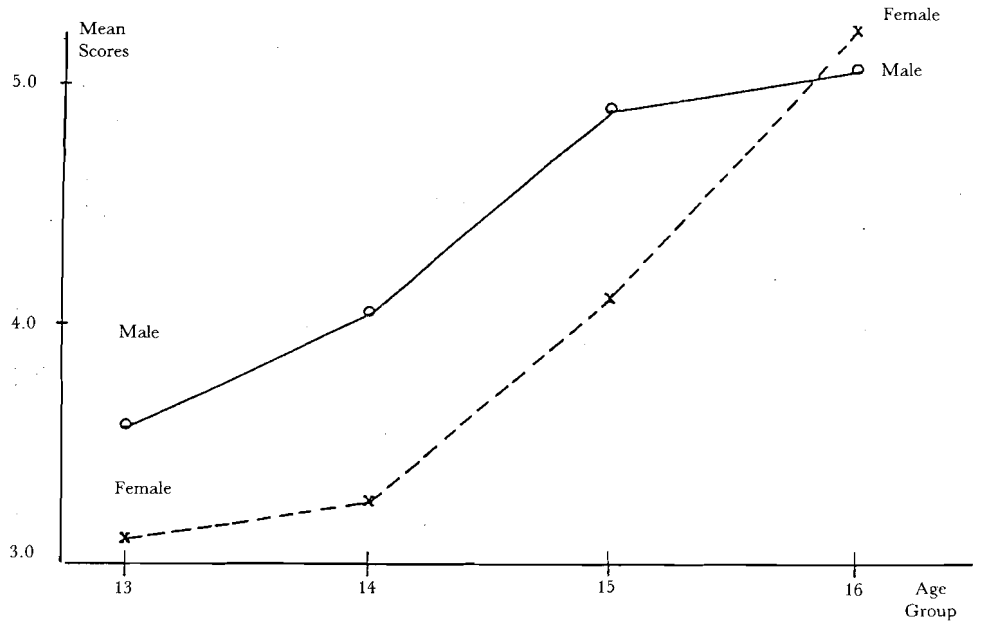

FIGURE 3: COMPARISON OF MALE AND FEMALE MEAN SCORES IN AGE GROUPS 13–16 FOR JUDGMENTAL LEVEL 2B

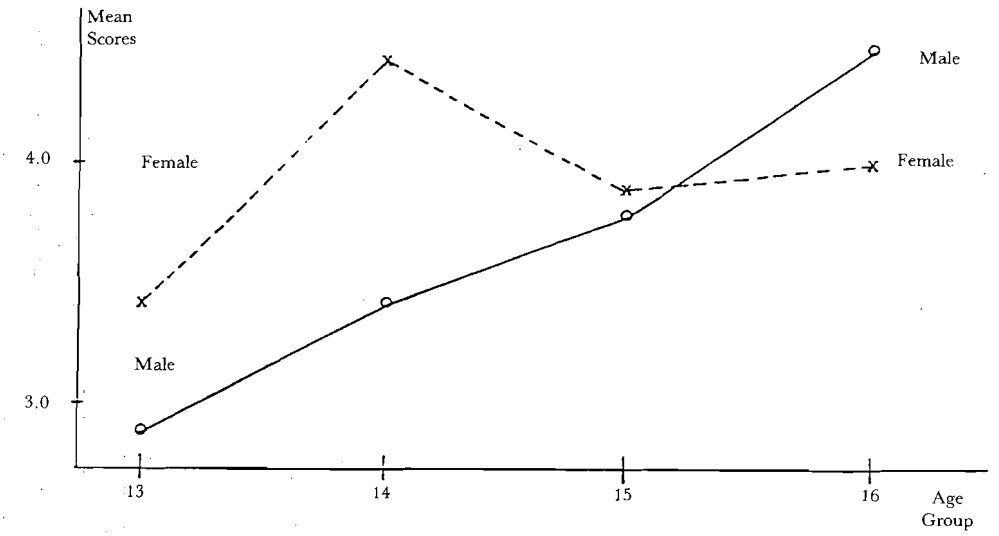

FIGURE 4: COMPARISON OF MALE AND FEMALE MEAN SCORES IN AGE GROUPS 13–16 FOR JUDGMENTAL LEVEL 3

Perceptions of an Effective Mathematics Teacher

Lim Suat Khoh
Wong Khoon Yoong

ABSTRACT

The purpose of the study was to identify the characteristics of an effective teacher in secondary mathematics as perceived by trainee teachers. A questionnaire in which they were asked to rate 40 teacher characteristics according to the extent to which they perceived each to be associated with an effective mathematics teacher was completed by 121 trainee teachers from the 1987 intake and 67 trainee teachers from the 1988 intake of Diploma in Education students at the Institute of Education. For comparison, the questionnaire was also completed by 76 mathematics teachers from various secondary schools in Singapore. The characteristic with the highest mean rating was the ability "to explain concepts, methods, etc. clearly". Other characteristics that are highly rated were "is confident and at ease in teaching" and "conveys an enthusiasm for mathematics to pupils". Lowest ratings were given to the characteristics "maintains a degree of aloofness in relationships with pupils" and "makes frequent use of criticism to motivate pupils".

Introduction

The importance of teachers being effective is obvious to teachers, principals, teacher educators and pupils. Numerous studies have looked at teacher effectiveness in the secondary school (e.g. Porter & Brophy, 1988). It is certainly desirable to determine those characteristics which effective teachers have in common.

Kyriacou (1986) points out two major problems in conducting research in this area. Firstly, there is the variety of criteria of effectiveness: do we measure a teacher's effectiveness by the gain in his pupils' attainment such as examination results or by the pupils' interest in the subject? Secondly, the characteristics of effective teaching may vary across the various subject areas and grade levels.

This study sought to identify perceptions of an effective mathematics teacher as held by a sample of teacher trainees and qualified teachers. Although perceptions are subjective and idiosyncratic, they can provide useful information about the nature of teacher thinking that may affect the planning of lessons and decision making in the classroom. For the teacher educators, any major deviations of trainees' perceptions from established research findings serve to highlight areas for intervention which must be provided for in their training.

Instrumentation

Data were gathered by means of a question-

naire which was adapted from those used in Kyriacou's studies (1986). The questionnaire consists of a list of 40 teacher characteristics which cover (a) organising and planning of lessons and materials, (b) communication skills, (c) inducting and motivating skills, (d) management styles, (e) mathematical knowledge, (f) uses of evaluation and (g) personality traits.
they associated each characteristic with the effectiveness of a mathematics teacher on a 4-point scale.

Sample

The questionnaire was administered to 188 Diploma in Education students (121 from the 1987 intake and 67 from the 1988 intake) at the Institute of Education. They were graduates who had done mathematics up to university level. The study was conducted at the beginning of their training course, so at that time, they had not received any formal training in teaching. However, some of them had done relief teaching in schools or tutoring at the university. The results from the survey were subsequently discussed with the students to provide motivation in the mathematics methodology course.

The questionnaire was also completed by 76 qualified secondary mathematics teachers. They served as cooperating teachers to the Dip Ed students during their 10 weeks of teaching practice.

Findings

The 40 characteristics are ranked in the order of the trainee teachers' means, as shown in Table 1.

It can be seen from Table 1 that 85% of the items have means greater than 3. Hence, most of these characteristics were perceived as relevant to effectiveness in teaching mathematics. The three most important characteristics as rated by both the trainees and the qualified teachers are: "Able to explain concepts, methods, etc. clearly", "Is confident and at ease when teaching" and "Conveys an enthusiasm for mathematics to pupils".

In terms of relationship with pupils, the trainees tended to stress patience (item 31), respect (item 14) and warmth (item 37) more than friendliness (item 9) and a sense of humour (item 25). Ability to deal with discipline, such as being fair (item 19), remaining calm (item 28) and being firm (item 6) were considered as less important than ability to generate interest and enthusiasm in the subject matter (items 4, 40, 30, 33). This perception is particularly encouraging as it suggests that the trainees may have the implicit understanding that discipline problems are likely to arise when the pupils have lost interest in the subject. It is to be hoped that this understanding can be developed to become a firm conviction that guides the trainees in the planning of their lessons.

Using a mean difference of more than 0.20 as indicating substantive difference in perceptions, the teachers stressed the following characteristics more than the trainees: "Teaches at right level for most of the pupils", "Is firm with regard to discipline" and "Plans with exams always in mind". However, the teachers believed less in "frequently revising earlier work" than the trainees.

On the other hand, both groups also agreed on the three characteristics with the lowest ratings: "Maintains a degree of aloofness in relationship with pupils", "Makes frequent use of criticism to motivate pupils" and "Provides lots of notes and materials". However, the trainees tended to believe more in giving notes and materials than the teachers.

The relatively low ratings for "Conveys high expectations of pupils' work" (item 35) may be a matter of concern especially when the teachers and trainees handle the Normal stream pupils. It is important especially for the trainees to understand what the Pygmalion effect can have on pupils' achievement and conduct.

Conclusion

The perceptions as reported here and based on the teachers' point of view, agree fairly well with those of Kyriacou (1986) which were based on pupils' responses. Hence, from both the teaching and learning perspectives, there is

TABLE 1: TEACHER CHARACTERISTICS: MEANS AND STANDARD DEVIATIONS

Item No.	*Characteristics*	*Trainee*		*Qualified*	
		Mean	*S.D.*	*Mean*	*S.D.*
5	Able to explain concepts, methods etc. clearly	3.89	0.36	3.91	0.29
23	Is confident & at ease in teaching	3.82	0.47	3.88	0.33
4	Conveys an enthusiasm for maths to pupils	3.80	0.46	3.87	0.34
31	Has patience when dealing with pupils	3.79	0.49	3.75	0.47
40	Leads students to enjoy doing maths	3.77	0.53	3.73	0.44
30	Tries to develop pupils' interest in maths	3.76	0.52	3.68	0.52
33	Tries to make lessons interesting	3.75	0.53	3.70	0.46
17	Has genuine interest in maths	3.72	0.56	3.70	0.57
11	Stimulates pupils to think for themselves	3.71	0.60	3.86	0.35
2	Teaches for understanding	3.63	0.67	3.72	0.67
8	Has a strong knowledge of maths	3.61	0.60	3.61	0.57
14	Shows respect for pupils as individuals	3.58	0.62	3.66	0.53
12	Teaches at right level for most of pupils	3.58	0.62	3.80	0.43
13	Works towards specific objectives	3.54	0.63	3.60	0.54
37	Conveys warmth in relationship with pupils	3.54	0.64	3.42	0.62
26	Imaginative & effective in use of activities	3.52	0.68	3.47	0.66
34	Frequent use of questions to develop understanding	3.51	0.64	3.55	0.53
22	Encourages pupils to show initiative	3.50	0.65	3.58	0.52
39	Encourages pupils to find alternative solutions	3.48	0.64	3.53	0.64
15	Relates new learning to pupils' own experience	3.48	0.70	3.51	0.66
19	Is consistently fair when enforcing rules	3.46	0.67	3.62	0.59
27	Gives detailed feedback to pupils in various ways	3.44	0.69	3.46	0.60
16	Knows how to deal with serious discipline problems	3.43	0.70	3.60	0.55

Table 1 (contd)

Item No.	*Characteristics*	*Trainee*		*Qualified*	
		Mean	*S.D.*	*Mean*	*S.D.*
10	Constructive & helpful in criticism of pupils	3.42	0.72	3.58	0.59
24	Pays attention to revision and exam technique	3.42	0.64	3.53	0.53
38	Makes frequent use of praise to encourage	3.40	0.67	3.42	0.64
18	Applies psychology of learning to teaching	3.39	0.68	3.24	0.61
3	Uses various methods of evaluating pupils	3.37	0.67	3.39	0.59
29	Frequently revises earlier work	3.36	0.72	3.13	0.72
9	Maintains friendly relationship with pupils	3.34	0.66	3.29	0.67
28	Is emotionally calm when enforcing rules	3.28	0.76	3.41	0.64
25	Displays a sense of humour to pupils	3.18	0.70	3.04	0.74
6	Firm with regard to discipline	3.18	0.72	3.43	0.57
32	Uses tests to diagnose rather than to assess	3.12	0.79	3.21	0.68
35	Conveys high expectations of pupils' work	2.98	0.62	3.15	0.71
36	Teaches with great concern for syllabus	2.91	0.72	2.75	0.80
1	Plans with exams always in mind	2.78	0.75	3.12	0.69
7	Provides lots of notes & materials	2.60	0.66	2.38	0.78
20	Frequent use of criticism to motivate pupils	2.45	0.84	2.30	0.92
21	Maintains a degree of aloofness with pupils	1.95	0.85	1.97	0.94

consensus on the desirable characteristics of an effective mathematics teacher. For the trainees, these valid perceptions need to be translated into actual teaching skills that can make their lessons really effective. How the training can be effected is the main challenge of the teacher educators and at the same time the responsibility of the trainees.

The reported means provide only a global description of an effective mathematics teacher, whereas actual teaching is a very personal activity. There could be a judicious combination of various characteristics that define different *types* of effective teacher. However, the search for these different types cannot be achieved through the use of questionnaires. Intensive study of practising teachers (e.g. Hoyles et al, 1985) can provide rich data to build up a model of good teaching (e.g. Porter & Brophy, 1988). This is the direction for future research that requires the cooperation of both the researchers and the practising teachers.

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Pastoral Care in British Schools: Applications for Singapore

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Lawrence Chia

ABSTRACT

This paper describes how pastoral care is delivered in the United Kingdom. The paper proposes a framework for a three-fold approach to pastoral care in Singapore schools and outlines how one Singapore secondary school is incorporating pastoral care into its school system. In addition, this paper touches upon the possible effects this innovation has on teachers in terms of their roles, skills and training. Implications for research in the area of pastoral care are outlined.

Introduction

In late 1986, Singapore's Minister for Education, Dr Tony Tan, and 12 school principals visited acknowledged good schools in the United Kingdom and United States and commended their efforts in ensuring not only their students' academic development but a total development of the individual in the personal, social and vocational aspects of their maturation. In a report which followed, called *Towards Excellence in Schools* (1987), strong recommendations were made to introduce Pastoral Care into Singapore schools.

In response to the call for Pastoral Care in schools, the Ministry of Education invited 17 schools, three of which were independent, to take part in a pilot project to implement Pastoral Care beginning in 1988. The aim of the pilot phase was to encourage the evolution of individual pastoral programmes to meet the specific needs of each school. These systems would serve as models for more widescale implementation of Pastoral Care in the future.

To gain first-hand knowledge of the organisation and implementation of pastoral systems in British schools, a study team of 18 educationists from Singapore, comprising Ministry of Education officials, principals of secondary schools and pre-university centres, vice-principals and lecturers of the Institute of Education visited 16 British schools in June 1988.

The authors of this paper were amongst the educationists who visited the United Kingdom and will share some observations made and lessons learnt from their British experience.[1]

Pastoral Care in British Schools: Some Lessons Learnt

Pastoral Care: What is it?

At its best, Pastoral Care may be regarded as an institutionalised system of personalised education acknowledging the pupils' perspectives and their personal and social development.

In the first major work on pastoral care in 1974, Marland described Pastoral Care as

[1] The authors wish to acknowledge the contributions of the other 16 study team members of the Ministry of Education Study Tour to 16 British schools in June 1988, especially to Mr William Thomas, Sr Anne Wong, Mrs Ng Gek Tiang, Mrs Pang-Cheng Li Yeng, Ms Ko Chai Peng, Ms Lily Thang and Dr Ong Teck Chin whose invaluable contribution to *The Report on Pastoral Care and Career Guidance in Sixteen Schools* (MOE Report, August 1988) has also been reflected in this paper by the authors.

covering ". . . all aspects of work with pupils in a school other than pure teaching . . . looking after the total welfare of the pupil." Best, Jarvis and Ribbins (1980) agreed that Pastoral Care referred to the non-instructional aspects of the roles of teachers and others in schools, using it as an umbrella term to include guidance and counselling as specific aspects of Pastoral Care. They continue to present a model of Pastoral Care as

> ". . . something which happens should happen between teacher and student, interacting in the context of an institution called a school or college which has four inter-related dimensions (disciplinary/order, welfare/pastoral, academic/curricular, and administrative/organizational) and which itself is located in a wider social, historical and cultural milieu."

It has been described by Hamblin (1978) as part of a teaching process which focusses not only on the intellectual, but social and emotional development of each child as well, and may involve altering the learning environment to suit the needs of each pupil so that he can develop to his maximum potential. Pastoral Care, from a wider perspective, is considered an attempt by schools to be involved in the total, continuous development of a child, especially one who is most in need of extra care and effort (David and Cowley, 1980). Reiterating the importance of a whole-school commitment to caring, Clemett and Pearce (1986) described Pastoral Care as being effective when

> ". . . everyone in the school community knows, and feels secure in the knowledge that as valued members of that community they can participate in giving and receiving encouragement, guidance and support. Such a climate will be created by the attitudes of staff and pupils and may be enhanced by a specifically designed pastoral care system. Each school would recognise its responsibility for extending care into all aspects of its work."

Pastoral Care: What are its aims?

Watkins (1985) states that Pastoral Care develops goals of:

- providing a point of personal continuing contact between a teacher and student;
- creating an overview of students' progress, achievement and responses;
- offering guidance on personal, educational and vocational issues;
- developing a management system to facilitate these goals; and
- communicating with all others involved in the enterprise, both those inside and outside the school.

Evidence from the 16 British schools visited showed that the aims of their pastoral systems placed emphasis on developing each pupil to his full potential. As such, tailoring the school's pastoral system towards the specific needs of its consumer, the pupil, was of prime importance. The aims focussed on encouraging a self-awareness of a pupil's present potential whilst relating these to their future contribution to the community.

An analysis of the aims and objectives of Pastoral Care (career guidance being an integral part of pastoral care) of the 16 British schools visited by a team of 18 educationists from Singapore shows that Pastoral Care sought to:

- instil in each pupil confidence, direction and self-discipline;
- encourage in each pupil self-awareness of present potential, in terms of interests, abilities, values, personal qualities, while relating these to future contributions to society;
- support the academic progress of each pupil through careful monitoring to ensure that each is able to take full advantage of the range of educational opportunities offered by the school;
- provide each pupil with practical life skills to deal more effectively with daily living;
- develop an awareness of the options available to each pupil on leaving school, to facilitate the transition from school to the world of work, by the provision of experience and necessary skills;
- engender in each pupil a sense of social responsibility, mutual respect and an awareness of the needs of others, whilst developing social skills to enable each to relate easily to the community and serve it well; and
- serve as a point of personal contact between

the school and the community, through parent-school activities.

Pastoral Care: How was it organised?

Each school's pastoral system was organised according to clearly defined structures representing the responsibilities and relationships of each person in the pastoral system (See Appendixes I and II). Two structural systems were evident: the Vertical House system and the Horizontal Year system.

Under the Vertical House system, pupils were allocated to houses, each under the care of a Head of House, assisted sometimes by a Deputy Head of House, and always by a team of form tutors. Within each house, the pupils were allocated to a tutor on a year basis who took charge of about 30 pupils. There could be a total of 300 pupils in one house, depending on school enrolment.

The Horizontal Year System grouped pupils according to their years or levels. Each year was sub-divided into smaller groups of 25 to 30 pupils who would form a class under the care of a form tutor. The Head of Year had the responsibility of coordinating the pastoral programme, supporting and acting as consultant for the tutors.

In turn both Head of House and Head of Year came under the supervision of a Deputy Headteacher in charge of Pastoral Care or two Deputy Headteachers — one from the Lower and the other from the Upper School.

All schools recognised the important role played by the tutor, who served as the first point of contact of any sort for the pupil. Marland (1985) in North Westminster Community School's "Tutor's Guide to the Tutorial Programme" described the tutor as "the heart of the school" and "tutoring, the key role, in that the tutor's responsibility for personal, educational and vocational guidance and the associated family collaboration, welfare, support and discipline underpins everything else the school endeavours to do".

A tutor's responsibility was that of knowing each pupil well so as to facilitate close monitoring of pupil progress and a regular assessment of pupil needs. This in turn creates the opportunity for each pupil to identify well with at least one teacher, building a sense of self-confidence and self-worth. Form tutors in some schools took care of the same tutor group through the five years of their secondary education, thus making it possible to know their pupils well.

The Head of House or Year assumed overall responsibility for the welfare of the house or year pupils in their charge by overseeing the pastoral curriculum, monitoring the academic progress of each pupil through their tutors as well as through individual interviews, supervising a firm and fair system of reward and sanction and liaising with parents and the community including social services, if necessary.

Although the approach to Pastoral Care in most of the schools visited was top-down, there was a fair amount of consultation, involvement and autonomy in some schools, especially those which had well-planned and successful programmes.

Pastoral Care: How was it delivered?

Pastoral Care was delivered, among other modes, through:

- An effort on the part of tutors to establish personal contact with pupils during registration and tutorial time.
- A Pastoral Curriculum of planned tutorials, for example, Personal and Social Education or Personal Development courses. These courses were tailored to meet the specific needs of pupils and delivered through structured experiences like role play, discussion and values clarification exercises which usually followed a group format. Examples of themes forming Personal and Social Education courses were:
  - The pupil's place in the school.
  - The pastoral group as a small caring community.
  - Relationships, the self and social skills.
  - Communication skills.
  - Decision-making skills.
  - School work and study skills.
  - Academic guidance and careers

education.
  - Health and hygiene.
  - Personal interests.
- The academic curriculum, for example, encouraging self-confidence and building problem solving skills during mathematics lessons.
- The hidden curriculum — teacher attitude was an essential factor in the success of pastoral systems, thus the hidden curriculum had a lot to do with whether or not pastoral care was experienced by pupils. For pastoral care to be successful, a whole-school approach needs to be taken.
- Special programmes like Induction programmes for pupils making the transition from primary to secondary schools and residential experiences to develop rapport between tutors and pupils and to teach social skills and engender camaraderie among peers.
- Special Needs programmes which catered to the needs of pupils requiring a special curriculum to maximise their potential. Alternative curricula may be developed and implemented for low achievers (eg. a modular approach, remedial lessons, etc), physically handicapped and gifted.
- "Special Interests" programmes where pupils were encouraged to take enrichment courses which interested them and sometimes led to life-long hobbies.
- A varied range of curricula, focusing on life-skills training and equality of educational opportunity.
- A comprehensive system of Careers Guidance, where it was mandatory in some schools for all pupils to take careers education courses, and participate in Work Shadowing, Work Experience and Industrial Tutor Schemes.
- A system of pupil profiling which provided a pupil with a personal record of his academic as well as non-academic abilities. A special feature of profiling was the fact that pupil profiles were drawn up through negotiations between the pupil and teacher. The pupil receives at the end of his education a Record of Achievement which would give prospective employers a detailed summary of his abilities and achievements.
- Continuing and warm relations with parents and the larger community.

Pastoral Care: What systems supported it?

To support the pastoral duties of tutors, most schools employed support teachers where these were needed, especially for Special Needs programmes. Two schools found the services of school counsellors helpful and employed them to care for pupils with emotional and behavioural problems.

An educational support team comprising an Educational Welfare Officer who checked the attendance of pupils and made home visits, if necessary; an Educational Psychologist, to whom pupils with emotional and psychological problems were referred; and a Careers Officer, employed by the Local Education Authority, serviced all schools.

Support of school programmes and activities by parents and the larger community, for example, employers, was high.

Applications for Singapore

Where Pastoral Care was seen to be effective in the 16 British schools visited, it was evident that emphasis was placed on a whole-school approach to Pastoral Care. Staff members were consulted on the planning and practice of Pastoral Care, and where this was more evident, there was a sense of ownership and thus dedication to and confidence in, the pastoral programme. In all schools, Pastoral Care was planned for, either in terms of a pastoral curriculum, being integrated within the academic curriculum or being consciously recognised within non-academic programmes, like "Special Interests". It has been recognised and emphasised in the *Ministry of Education Report on Pastoral Care and Career Guidance* that teacher attitude was a crucial factor influencing the success of a pastoral system.

Bearing all this in mind, it is thus proposed that Pastoral Care in Singapore be delivered

via a whole-school approach, involving all staff with pastoral responsibilities.

This approach to Pastoral Care[2] would necessarily involve its delivery via:

1. A Pastoral Curriculum

This would consist of a planned curriculum of activities aimed at developing and enriching a pupil in lifeskills — personal, social, educational and vocational. In introducing a pastoral curriculum, schools may want to consider the following:

- Developing a programme of structured tutorial sessions, either daily or weekly, specifically focussing on pupil needs in the personal, social and vocational realms.
- Recognising and highlighting the pastoral elements in non-academic programmes which have great potential for providing Pastoral Care, for example, Moral Education, Religious Knowledge, Physical Education, Health Education and Extra-Curricular Activities. These programmes can serve to promote Pastoral Care for pupils, for example, opportunities for personal growth abound through extra-curricular activities which can be used to build self-esteem and self-acceptance, to utilise pupil talent and interests in meaningful ways, and to involve students in service towards the school and the larger community.

2. The Academic Curriculum

It must be emphasised that there is an urgent need to consciously be aware of and recognise the pastoral potential of each academic subject area. It is imperative that attempts be made to integrate pastoral care programmes with the academic curriculum. To do this, the primary pastoral needs of our pupils have to be ascertained and ways of integration into daily lessons identified and put into practice.

3. Individual or Pastoral Casework (Student Counselling)

Individual casework/pastoral casework refers to the one-to-one contact with pupils with the aim of getting to know and understand them better and consequently helping them to maximise their potential. These encounters may be developmental, where tutor and pupil may be engaged in negotiation of the pupil's progress, present potential and aspirations. One-to-one encounters may also serve a remedial function, in remedial work in an academic area, or in counselling a pupil with a personal problem.

The Anglo-Chinese School Experience: One School's Experience in Implementing Pastoral Care

In Anglo-Chinese School (ACS), Pastoral Care includes career guidance. The aims and objectives of the ACS Pastoral Care system were formulated by the school staff during the school's Pastoral Care seminar and workshop in January 1988, and upon consultation with the Heads of Levels (Heads of Year), and Sports Secretary. The pastoral structure is a horizontal one as seen in Appendix III.

The school views the tripartite relationship amongst the academic, disciplinary and pastoral care systems as inseparable. The degree of mutual support, complementary relationship and harmony of these systems are of paramount importance to ensuring success in achieving their aims and objectives. Being a Christian school, the foundation upon which each of these systems rests, must be the principles and values as taught in the Holy Scriptures, the Bible.

The Pastoral Care system is seen to help pupils attain excellence in education and develop a truly wholesome life. The overall school philosophy fosters a caring, sharing, educated, united and God-fearing community.

[2] The authors wish to acknowledge the contribution of Sr Elizabeth Tham in the conceptualisation of this framework, which has been adapted from a joint paper by Sr Elizabeth Tham and Ms Vilma D'Rozario entitled, "Pastoral Care: Its Concept and Practice", presented at the Seventh Biennial Conference-Workshop of the Association of Psychological and Educational Counsellors in Asia, July 1988, in Bangkok.

Teachers are at the frontline of pastoral care in both showing care and concern as well as teaching a syllabus of personal and social education to meet the needs of the school's stated objectives. Thus, the teacher is meant to be something of a mentor, moral educator, disciplinarian, parent figure, guardian, motivator, counselor and friend. Although a new programme, teachers have been helped through several in-house seminars and workshops. These have also been reinforced through staff meetings, inputs from Heads of Levels, circulars and informal dialogue. The pastoral objectives and programmes would be constantly reviewed in order to better match the needs of the pupils. The principal and staff are resolved that pupils should be, to the best of their conscience and knowledge, imbued with an undying passion, motivation and belief that "THE BEST IS YET TO BE", which is the ACS school motto.

Implications for Research

Until the 1980s, little research had been carried out on Pastoral Care in the United Kingdom. Lang and Marland (1985) have commented that as a consequence to the lack of research into the thinking and practice of Pastoral Care, "it suffers from a lack of knowledge about itself and its role in the educational process; about its relationship to other caring agencies; and about the connections that could exist between schools and these agencies".

Research into Pastoral Care in Singapore has started with the pilot schools which have just completed a review of pastoral systems set up in their schools. The review focused on each school's pastoral aims and objectives, how the pastoral system was organised and the approach taken to plan the pastoral structure, the pastoral programmes developed and run — their strengths as well as the difficulties encountered. This review would be taken one step further when Singapore's consultant on Pastoral Care, Peter Lang, does his own review of Pastoral Care in these schools in September, 1988. Other schools contemplating the introduction of Pastoral Care may then draw upon the experiences of each pilot school model of Pastoral Care which caters specifically to the needs of its own unique school population.

In terms of research into pupil perception of Pastoral Care and whether they perceive their needs being met, Lang and Marland (1985) stress that "The pastoral dimension of learning requires research into how personal and social development can be promoted throughout pupils' school and classroom experience, particularly through the curriculum and through aspects of introduction to the classroom and the school."

For Singapore, too, research into Pastoral Care must not forget the pupil — the consumer of Pastoral Care. Schools should be helped to analyse their pupils' needs through systematic needs assessments.

Another area where research could pave the way for more effective programme development in Pastoral Care is in the area of encouraging and maintaining more effective home-school links. Lang and Marland (1985) suggest that research in this area could investigate what parents see as the responsibilities, obligations, capacities, caring styles and wishes of teachers and what teachers see as those of parents; the tensions arising from differing perceptions of responsibility and the circumstances in which families have to cope with the deficiencies of the school, and vice versa.

An analysis of a survey of pilot school teachers' perception of their needs in terms of training to assume the pastoral aspect of their role revealed that they hoped to acquire skills in group work approaches, student-centred teaching methods, basic counselling skills, team leadership skills, needs assessment skills and individual student profiling skills. Further research into the training needs of teachers who are to exercise pastoral responsibilities could be systematically undertaken and consequently lead to better provision of training for them.

Conclusion

It is our belief that a whole-school approach to Pastoral Care is the answer to assisting learn-

ing, thus serving the goal of achieving excellence of an all-rounded kind and respect for the development of young people.

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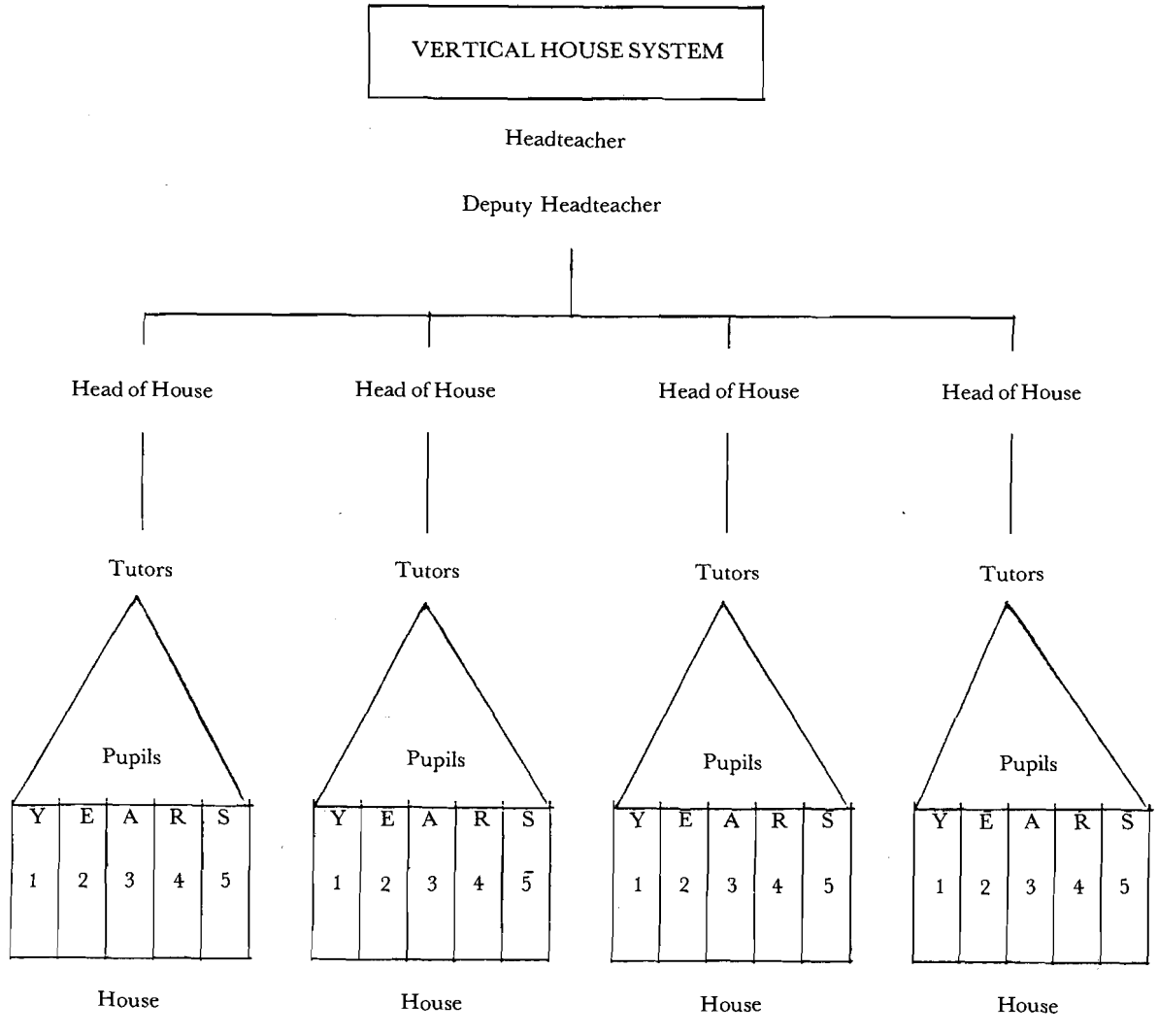
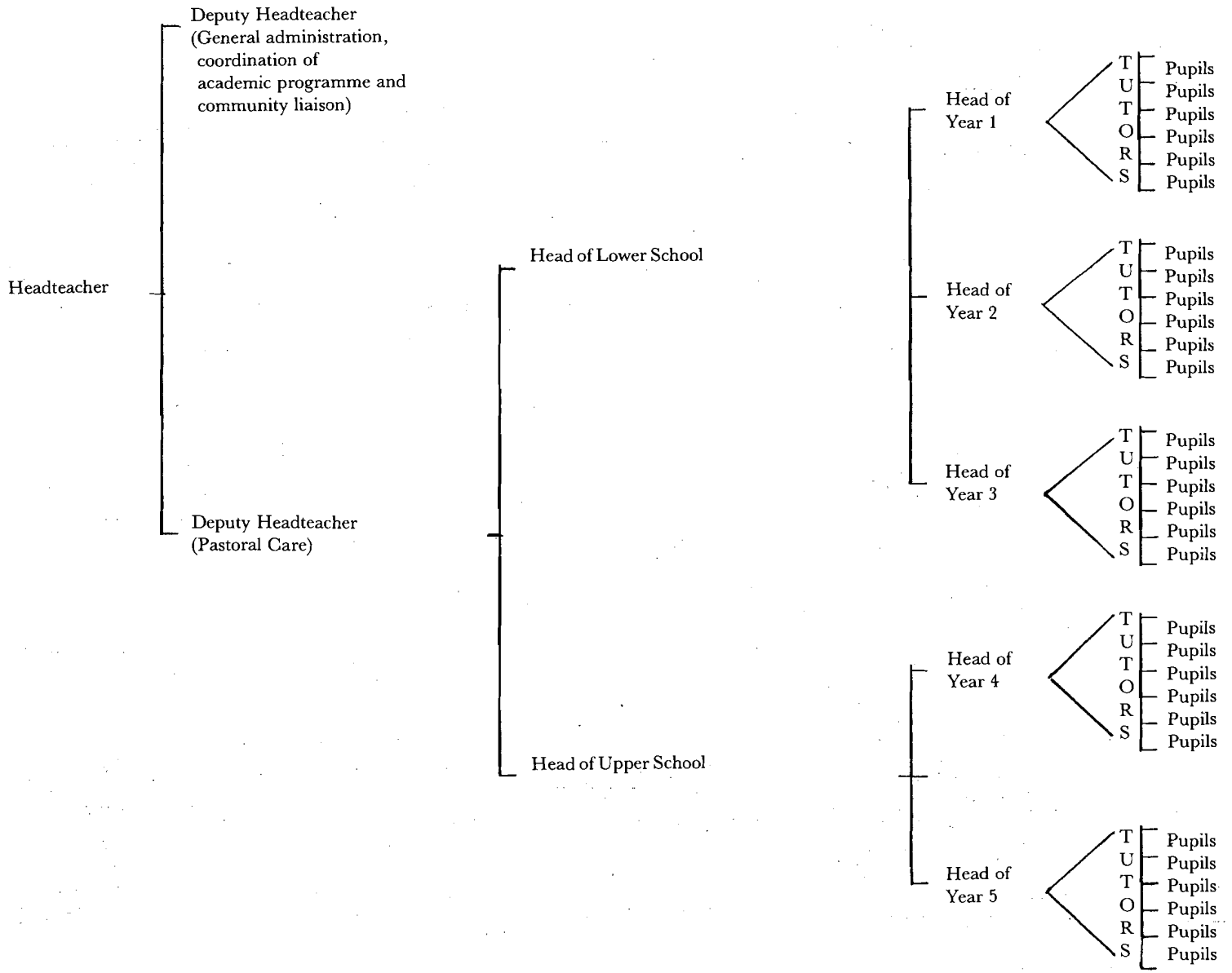
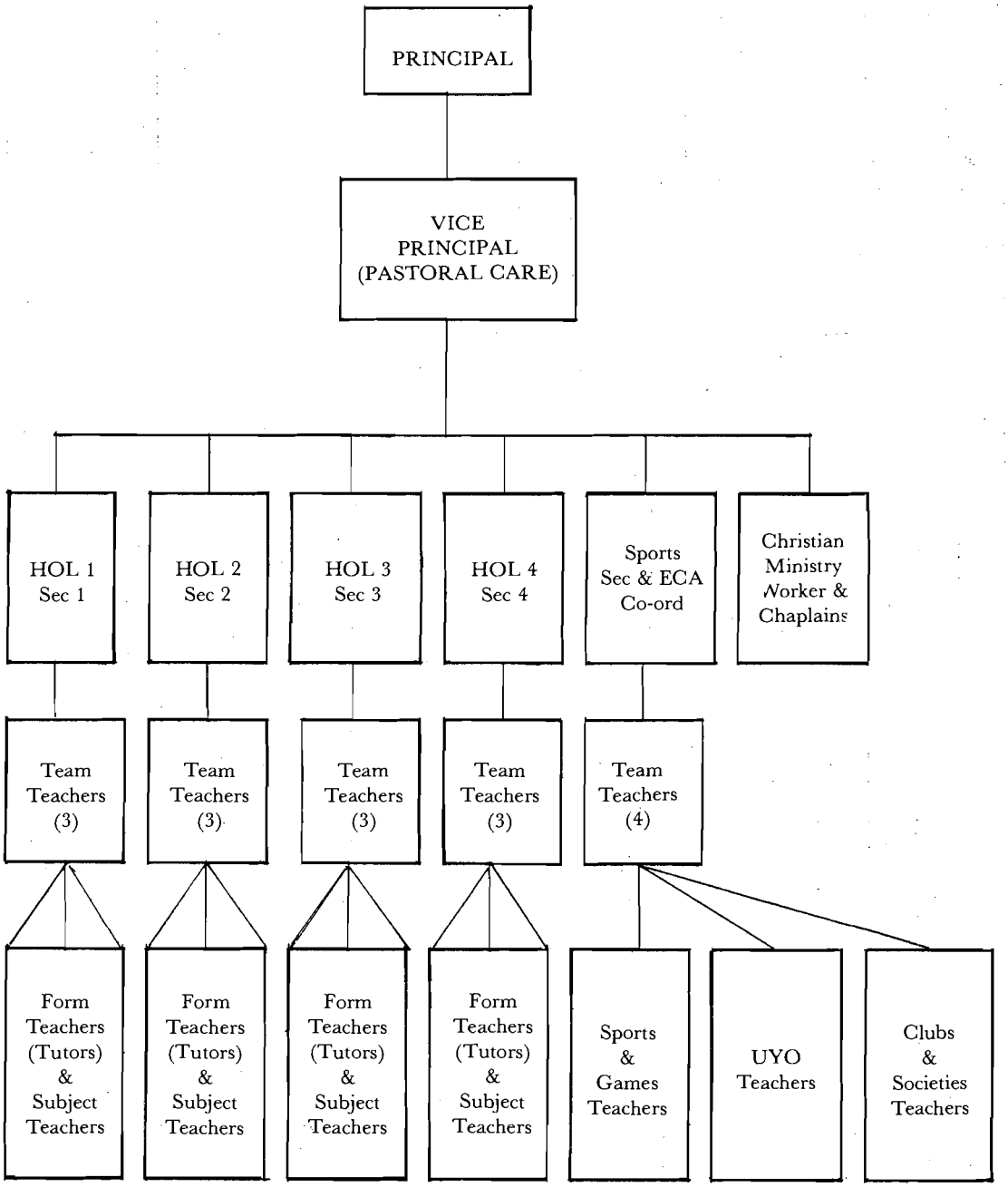
APPENDIX I


VERTICAL HOUSE SYSTEM
Headteacher
Deputy Headteacher
Head of House
Head of House
Head of House
Head of House
Tutors
Tutors
Tutors
Tutors
Pupils
Pupils
Pupils
Pupils
Y E A R S
1 2 3 4 5
Y E A R S
1 2 3 4 5
Y E A R S
1 2 3 4 5
Y E A R S
1 2 3 4 5
House
House
House
House

APPENDIX II

Horizontal Year System





STAFF STRENGTH & CLASS SIZE

Total number of teaching staff . . .	99
Total number of students . . .	2,033
Average class size in Secondary One . . .	30
Average class size in Secondary Two . .	37
Average class size in Secondary Three . . .	40
Average class size in Secondary Four . . .	40