Editorial Board

S Gopinathan
Goh Soo Tian
Amy Sobrielo
Helen Choo
Kwek Ah Kow

© Institute of Education, Singapore, 1984
469 Bukit Timah
Singapore 1025

The Singapore Journal of Education
is published for the
Institute of Education, Singapore, by
Federal Publications (S) Pte Ltd
2 Jurong Port Road, Singapore 2261
The Journal is intended
to promote interest in education and
to provide a channel for discussion and
research in education.

The views expressed in the Journal
are the opinions of the respective
authors and do not necessarily
represent those of the Editorial Board
or the Institute of Education

The Editorial Board welcomes
contributions on educational
developments, issues, pedagogy,
research and related aspects.
Articles, book reviews, research
papers, etc., are welcome. All
manuscripts should be typed with
double spacing and submitted in
duplicate to the Executive Editor,
Singapore Journal of Education,
Institute of Education,
469 Bukit Timah,
Singapore 1025.

ISSN No. 01 29-4776

Printed by Hoong Fatt Press
CONTENTS

V
GUEST EDITORIAL
Towards Promoting Research Wisdom

1
B Bloom
The New Direction in Educational Research: Alterable Variables

7
Ng Seok Moi
Providing Readable Readers for Children in the Lower Primary School

14
Boey Kam Weng
Parental Authoritarian Control and Cognitive Complexity

20
Poole and Chang
Career Choice: An Exploration of Personal Possibilities by Young People in Australia and Singapore

30
E Thomas and A Fam
Cross Cultural Methodological Problems in the Study of Singaporean Children's Cognitive Development

37
Soh Kay Cheng
Why Teach: Motives for Teaching Revisited

44
T A Kirkpatrick
Modals in English and Mandarin — Implications for Language Teaching

RESEARCH REPORT
50
J Moynihan
The Analysis of Spoken English: A Developmental Approach

BOOK REVIEWS
54
Eng Soo Peck
A Review of Teacher Effectiveness Research in Africa, India, Latin America, Middle East, Malaysia, Philippines and Thailand: Synthesis of Results

56
M Zachariah
Higher Education in the Third World: Themes and Variation

58
C Sullivan
Cloze Procedure and the Teaching of Reading and Reading Development and Cohesion

60
S Gopinathan
National Language as Medium of Instruction

62
Brian V Hill
The Worth of Religious Truth Claims
Notes on Contributors

B Bloom is Distinguished Service Professor of Education at the University of Chicago and the author of numerous books and learned articles. He is well known for his taxonomy of educational objectives and is the author of Human Characteristics and School Learning (1976).

Ng Seok Moi works on the Reading Skills Project at the Institute of Education, Singapore. She has conducted research on the learning strategies of young children and the measurement of readability of reading texts.

Boey Kam Weng lectures on Basic and Clinical Psychology at the National University of Singapore. He has published in the area of interpersonal perception, and on stress levels.

M Poole is Associate Professor in Education at Macquarie University in Australia. Among her major books are Creativity Across the Curriculum and Youth: Expectations and Transitions. A Chang lectures on Educational Psychology at the Institute of Education, Singapore and is conducting research on preschool children.

E Thomas is on secondment to the Institute of Education, Singapore from the University of London Institute of Education. He lectures on Educational Psychology and has conducted research in Africa and in India. Amy Fam lectures on Educational Psychology and is conducting research in early cognitive development.

Soh K C lectures on educational and psychological measurement. He has published in American and Japanese learned journals and his research interest is in affective measurement.

T A Kirkpatrick lectures in the English Studies Department of the Institute and has a degree in Chinese Studies. He is presently researching the information sequencing strategies of Mandarin and English speakers.

It is customary to present “information aggre-"t’s “Third Will of 1908," brought about by micro-chip tech-}2,n J" is a major "object" of pro-}ing research with obvious if we show not useful is useless.
Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?

T.S. Eliot

It is customary these days to refer to the emergent "information age", corresponding perhaps to Toffler's "Third Wave". Lest we get carried away by the rhetoric of "informatics" and "informatisation", brought about by the impressive advances of micro-chip technology and genetic engineering, it is timely to remind ourselves of the hierarchy suggested by T.S. Eliot. While most researchers would avow that they do consciously attempt to go beyond the discrete information trees to the organised knowledge forest, very few, if any, have contemplated the need to strive for wisdom which transcends organised and useful knowledge and yields knowledge that is organismic and usable.

Although the "promotion of research in education" is a major "object" enshrined in the Institute of Education (IE) Act, 1973, besides the other "object" of providing teacher education at all levels, this task has, until recently, been largely neglected in the sense that the few research studies have tended to be ad hoc, and poorly articulated with possible uses arising from anticipated outcomes and few, if any, deliberate attempts have been made to review the relevance of IE's research efforts as a whole vis-a-vis its major objective and to plan more programmatic, priority projects. There is therefore the danger that researchers who operate individually or independently and avoid an interdisciplinary and systemic stance might merely be promoting research information, or research knowledge at best.

What then are some likely desiderata for promoting research wisdom? It might be over-stating the obvious if we should stress that knowledge which is not useful is useless. But, the implication is that if research is conducted with little or no regard to whether and how the findings are expected to be applied, it is but an exercise in futility. Less obvious perhaps is the commitment to finding out not only what knowledge could be of use in improving educational practice, but more important, what knowledge, presented in what way, would be most likely to be usable. Characteristically, researchers, under the guise of pursuing knowledge for its own sake, have tended to abrogate this responsibility by being unconcerned with what happens after the study has been completed, sometimes without due regard to proper documentation and dissemination. The fallacious assumption is frequently made that policy-makers and practitioners can wait indefinitely for research studies to be concluded, that they would appreciate the jargon and technical details embodied in many a research report and that they are in fact ready to accept certain alternative courses of action which the researcher hopes to suggest but which could be construed as serious indictments of entrenched policies or practices.

Taking cognizance of the probable reactions of policy-makers and practitioners does not imply that the professional integrity of researchers would be sacrificed or compromised. On the contrary, what is being advocated is that the scope of researchers' concerns should extend beyond merely attempting to answer the specialised research questions to making plausible predictions of the extent to which the research findings are likely to be used, misused or unused. If the likelihood of a particular research having an impact on policy-makers and practitioners is estimated to be nil or negligible, it is wiser to abandon or drastically modify the study, unless we are prepared also to invest in more effective modes of promotion. Equally disturbing is the tendency, however, inadvertently, for policy-makers and practitioners to over-generalise the results of a study
which has, at the outset, delineated the limits of generalisability through its sampling design. For instance, a particular instructional approach might have been found to be most suitable for children of particular socio-economic backgrounds in a particular stream of a particular grade level in particular circumstances or conditions being overlooked when the particular findings are being applied are extremely great, even when the research report has incorporated appropriate cautions and caveats. For researchers to remain credible and responsible, it would therefore be advisable to widen the scope of generalisability either by undertaking a more comprehensive study through collaborative effort or by investing in follow-up or longitudinal studies. It would be unwise to be preoccupied only with one-shot studies of very narrow focus, however precise and sophisticated the methodologies that have been employed.

How then is the Institute of Education preparing to meet the challenge of promoting research wisdom? Bearing in mind that it is indeed a gargantuan task, especially in view of the cumulative lack of concerted efforts in coming to grips with priority problems of promoting research, some of the recent activities to be described can only be viewed as the beginnings of an evolutionary process in reorienting the role of research in Singapore. In the first place, it is recognised that success, or failure, is dependent ultimately upon the quality of research personnel. The last few years have therefore witnessed an enhanced programme of staff development, not only through encouragement and sponsorship of postgraduate studies and short-term attachments or study visits overseas as well as locally but also through special in-house workshops and seminars conducted by consultants from overseas or by fellow colleagues who have something to share with others. Staff have also been encouraged to participate in team research studies that are hopefully longitudinal (e.g. van Leer project on Social and Cognitive Development of Preschool Children in Singapore, Second IEA Science Study, and various Summative Evaluation Studies of CDIS Curriculum Projects) or ongoing (e.g. Additional Selection Criteria in Pre-service Teacher Education, Innovative Teaching Methods, Assessment of Performance in Teacher Education, and Follow-up Studies of IE Trainees). The formal and expanded Master of Education programme, introduced in 1983, has attracted some senior and dedicated personnel from the Ministry of Education and the schools. Hopefully, they might act as catalysts in bringing about a research-oriented profession.

In the meantime, teachers are being sensitized to what research can offer in helping to improve professional practice. As lecturers become more involved in carrying out research themselves, they are more likely to use illustrations from their own research or from the research literature. Many of the lecturers are already beginning to involve their students in research-based assignments, in contrast to the usual practice of writing essays on specified topics which could entail library research, at best. For beginning teachers, prior to confirmation at the end of the two years of probation, the successful completion of an assignment under the supervision of IE staff, involving problem finding and problem solving and linking relevant theory to practice, would, as of this year, become mandatory during the period of induction. Likewise, the restructured ‘Further Professional Programmes’ for middle-level leaders in schools, e.g. Heads of Departments, as well as the forthcoming Diploma in Educational Administration for potential or incumbent principals or vice-principals, have incorporated features of action research and school based study which are meant to develop a more supportive environment for educational research and perhaps even to whet the appetites of school personnel towards conducting research themselves.

Attempts to share research information, knowledge and perhaps wisdom have also been made using the printed media. Since 1982, a major effort has been directed at producing readable abstracts of relevant research and evaluation studies which highlight those aspects which are likely to be more useful and interesting to the classroom teacher. Thus, the bi-annual publication, called REACT (Research and Evaluation Abstracts for Classroom Teachers) uses an attractive format including frequent recourse to cartoons and reduces technical jargon to an absolute minimum. Another publication, Teaching and Learning, which is a forum for the exchange of ideas on teaching and learning, has, of late been featuring more articles which make use of ideas derived from research, but, of course, couched in relatively non-technical language. For the more sophisticated, a number of Occasional Papers and Research Monographs have been published from time to time. Likewise, the Singapore Journal of Education caters to a clientele who are more at ease with reading the research literature.

Regular readers of the Journal would probably notice some changes in the present issue, including the presence of a Guest Editorial. Less apparent per-
haps are the kinds of articles selected for publication, for they could be said to represent a genre of research that aims to be rigorous, relevant and realistic. The seminal article by Bloom reflects the research wisdom which researchers should endeavour to attain for his prudent advice that researchers should focus on alterable variables is most timely and ought to be seriously considered. The articles by Soh and by Ng which illustrate the importance of maintaining continuing interest in research areas are of major concern to teacher education as well as to children's education. Soh's article is in fact a partial replication and extension of an earlier study in 1968 entitled Why Teach? It is reassuring that expressed motives for teaching have apparently improved in the one-and-a-half decades since 1968. Ng's article represents one of a series of studies on various aspects of reading, which began with the study of Reading Interests in 1970. With the centralised development of numerous curriculum materials by the Curriculum Development Institute of Singapore, the problems of readability and its measurement should be of considerable current interest in Singapore and the findings pertaining to the PEP and NESPE series deserve serious attention.

In a society where bilingualism is strongly underscored in the school curriculum, contrastive analysis should constitute a most pertinent tool for locating sources of strengths and weaknesses in teaching and learning two languages. Kirkpatrick's study of modals in English and Mandarin is therefore a very valuable contribution. As the trend in Singapore is towards having English as the first language and hence the main medium of instruction, research on the learning of English should be of perennial concern. The analysis of spoken English as well as a developmental approach to such an analysis is a somewhat neglected area. Moynihan not only addresses these problems in the Singapore context but has been able to compare the findings with an earlier study in New Zealand.

Another cross-national study (by Poole and Chang) addresses some crucial problems of career choice among Australian and Singaporean youth. This study could be the prelude to future research and development work on career guidance, which is particularly pertinent to the national productivity movement in Singapore. Another collaborative study (by Thomas and Fam) also provides useful preliminary inputs to some major research and development projects on pre-school education, such as the van Leer project and the impending project on the "Training of Trainees of Child Care Teachers". These projects are most relevant in view of the national goal of encouraging women to join as well as to return to the work-force, while at the same time phasing out foreign workers. In a meritocratic society, an understanding of the complex interplay of numerous variables which affect cognitive performance is of considerable importance. While variables associated with parental authoritarian control are not easily alterable, Boey's study is particularly significant not only in highlighting an often overlooked dimension of parental influence, but also in posing the challenge to find ways and means of making these variables more alterable.

This brings us full circle to Bloom's plea that we ought to pay more attention to studying alterable variables. His and other articles in this issue might be regarded as initial skirmishes into the process of promoting research wisdom. We hope that the wisdom of striving to promote research wisdom would not be questioned, for we intend to revisit this terrain on many more occasions in the future. To quote T.S. Eliot again,

_We shall not cease from exploration,
And the end of all exploring
Will be to arrive where we started,
And know the place for the first time._

SIM WONG KOOI (DR)
Director
Institute of Education

16 May 84
The New Direction in Educational Research: Alterable Variables

Benjamin S. Bloom

A major revolution has taken place during the past decade in educational research and our understanding of some of the factors that directly influence learning in or out of the schools. As a result, student learning can now be improved greatly and it is possible to describe the favourable learning conditions which can enable virtually all students to learn to a high standard. Researchers who were at one time concerned about providing equality of educational opportunity for students now speak of the learning conditions which can bring about virtual equality of educational outcomes for students. And such educational outcomes are at very high levels of attainment.

The direct application of this new understanding to teachers and the schools and colleges has already taken place very quickly in some places, but in others it may take several generations before these ideas become well known and used. This will depend upon the leadership in the schools, the felt need in the country for improvement in learning, and the role played by schools of education and teachers of teachers. In some countries the leadership in applying the new research to the schools has been assumed by national curriculum. This has been effective in those curriculum centres which provide adequate in-service education to teachers for the new curriculum.

There are several methodological features which account for the striking qualities of this new research development. The simplest of these is a movement from the study of the characteristics of students and of teachers outside the class to direct observation of learning taking place in the interactions between teachers and students in the classroom. Perhaps, to put it in the most direct terms, it is a movement from the study of the actors (teachers and the students), to the study of teaching and learning as they take place under specific environmental conditions.

Perhaps, the most important methodological change is the movement from what I have termed stable or static variables to variables which are alterable either before the teaching-learning process or as a part of these teaching-learning processes. It is this shift in the variables used which to me is most central in this new view of education. It enables educational researchers and teachers to move from an emphasis on prediction and classification of students to a concern for causality and the relationships between means and ends in both teaching and learning. It is this concern which is resolute in new ways of understanding, of explaining and even altering human learning.

The search for alterable variables and the cause of processing by which they can be altered is a very recent step in educational research and is increasing in educational practice. But I am confident that it would be these and related ideas that will be centred in the schools during this coming decade.

In the following, I will describe some of these new alterable variables, contrast them with the non-alterable variables they replace, and indicate the gains to education to be secured from this new approach to educational practice.

Available Time Versus Time-on-Task

We have always recognized “time” as a central factor in all learning. Schools allocate so many years for different subjects such as reading, literature, arithmetic, science, social studies. In addition, the schools determine the number of school days in each school year and the number of hours per day or week that will be assigned to each part of the curriculum. Time in the sense of years, days and hours available for school learning becomes a relatively fixed or stable variable. To make significant alterations in this time allocation requires
major, legal, economic, and other policy changes at the state or local level. Only rarely can a particular group of teachers or local school administrators make drastic changes in these time allocations. Since these time allocations are much the same for most of the students, they account for only small differences in the learning of individual students within the classroom or school.

Quite in contrast to the concept of time available for learning is the variable of time-on-task (active learning time, time that the students are actively engaged in learning). If two students are in the same classroom and one is actively engaged in learning for 90% of that classroom hour and the other student is actively engaged for only 30% of that classroom hour, there will be quantitative as well as qualitative differences in the learning during that hour for the two students.

One method of appraising the level of time-on-task is by determining at various intervals whether or not a particular student is overtly engaged in learning — paying attention, doing work assigned, or in some way responding in a relevant way to the instruction and instructional material. A second method is to determine the extent to which the student is covertly engaged in the learning.

There are various methods of determining whether the student is thinking in relevant ways or whether his processing had little to do with the classroom teaching-learning process. We've used what we called simulated recall where we make a recording of the class and then within 24 hours played this back and asked the students what's going to come next if you can get their support in doing so, or by interviews, or by questionnaires. Studies report an index of time-on-task as the proportion of the classroom hours the individual was actively on task overtly, covertly or an average of the two.

For very young children, one can get a very good index of the covert from the overt. If we make use of methods such as indicating the child's aptitude and aptitude scores and further educational evaluation and even of teachers and students.

There is some evidence that are alterable between 3 and 5 years old. The significant alteration in the time-on-task can be altered positively or negatively by the instructional process and this has direct consequences for the learning that will take place.

Cognitive evidence is indicating that the essential prerequisites for each new learning task are largely determined by the quality of the instruction and the attractiveness and the relevance of the curriculum and the instructional material as well as the quality of instruction. Put in another way, students cannot actively engage in the learning if the instruction or instructional material is poor or if they are unable to comprehend what is being taught and what they are to do.

What is most important for the purposes of this paper is the strong evidence that the amount of active engaged time in the classroom can be altered most positively or negatively during a sequence of learning tasks. Thus, consider two groups of students who are comparable at the beginning of a new course in terms of their aptitude or previous achievement. One group learns the subject under conventional conditions while the second group learns the subject under a very high quality of instruction — mastery learning, or other procedure which maximises learning. During the first learning task both groups are likely to be very similar in their average percentage of time-on-task. On the second learning task, the percentage of time-on-task will tend to be much greater for the high quality of instruction group and lower for the poor quality of instruction group. If both groups are followed over a series of learning tasks during a school term, it will be found that the high quality of instruction group increases greatly in the percentage of time they are on task while the low quality of instruction group decreases greatly in the percentage of time-on-task. On the final learning task, the two groups (which were very similar on the first learning task) will be very different. And in turn these differences would be reflected in their achievement differentials, their motivation for further learning of the subject and their self-confidence in their learning abilities.

Time-on-task is then one of the variables that account for learning differences between students, between schools and even between nations. Time-on-task can be altered positively (or negatively) by the instructional process and this has direct consequences for the learning that will take place.
Intelligence Versus Cognitive Entry

During much of the present century, educators have made use of intelligence and aptitude tests to predict later school achievement. In general, the statistical relations between these tests and later achievement have been found to be correlations of somewhere between +.50 and as high as +.70. Most researchers and educators have interpreted these correlations as indicating that these characteristics (intelligence and aptitude) determine the individual potential for learning. They use them as a basis for making long-term decisions about selection, screening and even about the types of school programme to the assigned individuals. All too frequently, intelligence and aptitude scores determine the opportunities for further education, student support and encouragement and even the types of interaction between teachers and students in the same classroom.

There is some evidence that intelligence test scores are alterable in the early years, i.e. somewhere between 3 and 7, but there is no evidence of significant alteration in levels of intelligence as a result of school experience in the later years. Little is known about the alterability of performance on specific aptitude tests. At least on the basis of present evidence we may regard intelligence and some aptitudes as relatively stable characteristics.

Quite in contrast to intelligence and aptitude indices are cognitive entry characteristics. These are the specific knowledge, abilities, or skills which are the essential prerequisites for the learning of a particular school subject or even a particular learning task. Such prerequisites typically correlate between +.70 - +.80 or even higher with later measure of achievement in a subject. Furthermore when they are identified and measured, they replace intelligence and aptitude tests in the prediction of later school achievement. That is, intelligence or aptitude tests add nothing to cognitive entry measures for the prediction of school achievement. That is, intelligence or aptitude tests add nothing to cognitive entry measures for the prediction of later school achievement. Such tests typically correlate between +.70 and +.80 or even higher with later measures of achievement in a subject. Furthermore when they are identified and measured, they replace intelligence and aptitude tests in the prediction of later school achievement. That is, intelligence or aptitude tests add nothing to cognitive entry measures for the prediction of school achievement. That is, intelligence or aptitude tests add nothing to cognitive entry measures for the prediction of later school achievement.

Cognitive entry characteristics are highly alterable because they represent particular content and skills which may be learned if they are absent, which may be reviewed if they have been forgotten, and which may be learned to a criterion level if they have been learned to a lesser level. In the next section, I will refer to the feedback of correct procedures as one major method for ensuring that cognitive entry characteristics are developed adequately for most of the students.

In much of the mastery learning research in the schools, it is evident that the large gains in final achievement for the mastery versus the controlled groups were because the mastery students were brought to high levels of achievement on the prerequisites for each learning task. This was not done for the controlled students. Much of the variation in school learning is directly determined by the variation in the students’ cognitive entry characteristics for a particular subject. When means are found for ensuring that students reach adequate levels of competence on the essential cognitive entry behaviours, most students can be assured of high levels of school learning with relatively little variation in their achievement. The alterability of the cognitive entry characteristics has the most profound implications for instruction.

Summative Versus Formative Testing

Formative, and, in most classrooms throughout the world, achievement tests are used only for summative purposes. The summative test evidence is used primarily to classify or judge each student on the extent to which he has learned the content and objective set for the course by the teachers. The students’ scores on each quiz, progress test, and major examination are converted into school marks with other indices which compare each student with a set of norms or standards set by the teacher or the test markers. Typically, once the student has taken a test, he is marked and rarely is given opportunities for correcting his errors and being retested. In general, the basic notion is that all the students have had equal opportunity to learn the subject over a defined period of time and they are then to be judged over what they have learned. This is repeated again and again during the school year.

It is frequently assumed that test results and school marks are the primary motivation for learning in the school. Marks based on tests are also assumed to be sound estimates of the quality of the learning as well as a proper index of the quality of the learners. Such marks are eventually the basis for many decisions about the learners and schools including school programmes and further opportunities for learning.
The use of summative testing and grading procedures result in highly predictable measures of school achievement. Typically, the correlation between achievement tests in the same subject at two points in time are usually above +.70 (depending on the reliability of the separate tests). If we mark students in grade 3 with a major achievement test and do the same thing at grade 11, over this 8-year period the achievement in grade 3 will be highly predictive of the achievement at grade 11. If we rank the students from 1 to 100 in grade 3 and then rank them again in grade 11, about 10% of the students will get something out of rank. Student No. 5 may move from the fifth rank to the third rank or from the fifth rank to the seventh rank. But most of them stay almost the same for each year between grade 3 and grade 11. That is, the ranks of the students in the school remain constant over many years of schooling. Many researchers and educators infer from this that differentials in achievement are not alterable and that they remain fixed by intelligence, heredity, home influences or some other conditions outside the school. It is assumed that the student and his background explain this remarkable stability of achievement and that the causes and remedies are not to be found within the schools. It is the student who has failed (or succeeded) and the teacher, the instruction, the curriculum or the school are not to be held responsible.

In contrast to tests used for grading and judging is the use of tests and other evidence as an integral part of the formative assessment. Formative testing is used primarily for feedback purposes in order to inform the student about what he has learned well and what he still needs to learn. When the feedback is provided in relation to corrective procedures to help the student correct the learning, most students do reach the standard of achievement set by the teacher. Typically, a parallel formative test is used in determining when the student has completed the corrective process to the set standard. In various studies it is found that if 20% of the students reach the mastery standard on a particular formative test given at the end of a particular learning task, then with an hour or two of corrective effort most of the students do reach the same mastery standard when they are retested on a parallel formative test.

When formative tests and corrective procedures are used in this way over a series of learning tasks, the proportion of students reaching the mastery standard (before correctives) increases on each subsequent test until as high as 80% or 90% of the students are able to reach the mastery standard on the final learning task in the series of learning tasks. The amount of corrective help needed becomes smaller on successive learning tasks until towards the end only a few students need such corrective procedures. The students appear to be "learning to learn".

The use of formative testing in this way ensures that most of the students have the necessary cognitive prerequisites for each new learning task, that students have increased interest in the learning and greater confidence in their own ability to learn, and that they use more of the classroom time to actively engage in the learning process.

Such formative tests are also useful in helping the teacher to determine which aspects of the learning task were learned well by the majority of the students and which aspects were learned poorly by the majority of students. This gives the teacher feedback in order to determine which ideas and fields need to be reviewed or re-taught in a different way if the majority of the students are to learn to a high standard. The major change is that teachers do less in the way of judging and grading students on what they have learned by a particular date and they do more to see to it that each student learns what he or she needs as preparation for the next learning task.

Formative testing in relation to the corrective process may be considered as an example of a cybernetic feedback-corrective procedure necessary for almost all human activities. In tutoring situations the one to one relation provides so many cues that the feedback corrective process is almost a natural interactive exchange between the tutor and the tutee. However, group learning is central in the schools and it is difficult to provide adequate feedback corrective for the teacher and each of the 30 or 40 learners in each classroom. Periodic formative testing and corrective procedures can be effective as one way of ensuring that excellent learning takes place. In the long run, the basic problem of group learning is to find ways of providing feedback-corrective processes as an integral part of the classroom teaching-learning interactions.

Teachers Versus Teaching

Over the past four decades there has been a great deal of research on teachers' characteristics and their relations with student learning. The research has been concerned with such variables as the ages of the teachers, the amount and the kind of training they have had, teaching experience, membership in teaching organizations, and even tests related to the relation between student learning has correlated of less than +.20. Over the past four decades there has been a great deal of research on teachers' characteristics and their relations with student learning. The research has been concerned with such variables as the ages of the teachers, the amount and the kind of training they have had, teaching experience, membership in teaching organizations, and even tests related to the relation between student learning has correlated of less than +.20.
teaching organisations, their personality and attitudes, and even their performance on achievement tests related to their field of teaching. In general, the relation between teachers’ characteristics and student learning has been represented by correlations of less than +.20. It may well be that researchers in the past have not selected the right teacher characteristics for study. However, based on the research done so far, it may be concluded that the characteristics of teachers have little to do with the learning of their students, and even if they did show higher relations, most of the characteristics of teachers studied so far are relatively static or stable variables which are not directly alterable by in-service or other teacher training programmes.

Different from these many studies of teacher characteristics is the more recent research on the qualities of teaching which have a direct causal relation with student learning in the classroom. The research on the qualities of teaching (rather than on the qualities of teachers) is largely based on observational and experimental studies of teachers interacting with their students. Although there are many ways of doing this research, my students and colleagues have found a theoretical approach of John Dollard and Neale Miller to be very useful. Dollard and Miller have emphasised three major characteristics of all teaching in school — cue, reinforcement, and participation. Cues include the instructions as to what is to be learned as well as the directions as to what the learner is to do during the learning process. Much of the research relates student learning to the quality of the cues, the variety of cues that are used, the meaningfulness of the cues and the strengths of the explanations and directions provided by the teacher and/or the instructional material. Reinforcement includes the extent to which the student has a sense of being rewarded or reinforced in his learning. Much of the research relates student learning to the variety of reinforcements provided, the frequency with which reinforcement is used, and the amount and kind of reinforcement given to different students in the class. Participation includes the extent to which the student actively participates or engages in the learning. The research relates student learning to the extent to which he actively participates in using the cues, makes appropriate responses, and practises the responses until they become part of his repertoire. The research also includes the extent to which the instructor and/or the instructional method engages the different students in the class in overt as well as covert participation and response to the learning.

Observations of teacher interaction with students in the classroom reveal that teachers frequently direct the teaching and explanations to some students and ignore others. They give much positive reinforcement and encouragement to some students but not to others and they encourage active participation in the classroom interactions from some students and almost discourage it from others. The studies find that typically the students in the top third of the class are given the greatest attention by teachers while the students in the bottom third of the class receive least attention and support. These differences in the interaction between teachers and students provide some students with much greater opportunity and encouragement for learning than is provided other students in the same classroom.

These qualities of teaching are alterable as a result of in-service education which provides teachers with feedback on what they are doing (or not doing) and what they can do to alter the situation. Studies have found that when these interactions of teachers with their students are altered, there are significant improvements in learning.

Teachers are frequently unconscious of the fact that they are providing more favourable conditions of learning for some students in their class than for others. Generally, they are under the impression that they give all students equality of opportunity for learning. When teachers are helped to secure a more accurate picture of their own teaching methods and styles of interaction with their students, they are increasingly able to provide favourable learning conditions for most of their students, rather than for just a small group — the top fraction of their class.

Parent Status Versus Home Environment Processes

Teachers and researchers have long known that children coming from some homes learned better in school than children coming from other homes in the same community. In general, it has been found that learning in the schools is related to the education and occupation of the parents, to the social class and socioeconomic status of the parents, and to membership in particular ethnic groups and races. Sociological studies of socioeconomic status (which typically include parent education, parent occupation and income) reveal correlations of +.30 to +.40 between such indices and later measures of school achievement. While such studies do
demonstrate significant effects of the home on school learning, they are not very helpful to the parents because these characteristics are not alterable. There is little the school or the parents can do to alter their level of education, their occupation, income or ethnic characteristics. While such studies may be of some slight value for predicting levels of learning of groups of children, they offer no specific clues as to what the school or the parents can do to improve the learning of the children.

Quite in contrast to these earlier studies of the characteristics of the parents are the more recent studies which emphasise what the parents do in interacting with their children. These studies make use of interviews, observational techniques and more recently, questionnaire techniques to investigate the environmental process variables in the homes — the interactions between children and their parents. Some of the home environmental process variables which appear to be most significant are first of all, the contribution of the home to the development of the mother tongue, the encouragement of the children to learn well, the aspirations of the parents for their children, the provision of help in learning when the child most needs it, and the ways in which time and space are organised in the home. Such process variables when combined, typically yield a correlation of +.70 to a little bit over +.80 with measures of school achievement. This is especially true in the elementary years. In general, the correlations are highest with school achievement involving reading, vocabulary and problem-solving and lowest with spelling or arithmetic computation. These results suggest that the home has the greatest influence on the language during the development of the child, the child's general ability to learn, and the child's motivation to learn in school. The home has least influence on specific skills primarily taught in the school.

It is clear that when the home and the school have similar learning emphases, the child has little difficulty in school learning. But when the school and the home have divergent approaches to life and to learning, the child is likely to be penalised severely by both the home and the school, especially when school attendance is required for ten or more years.

During recent years, there have been a large number of studies which attempt to alter some of these process variables in the home. These studies have made use of home visitors, special courses for parents, parent involvement in the schools for a brief period of time, as well as the provision of audio-visual and written material and games to be used at various points in the child's development. The research makes it clear that nearly all the process variables are alterable and the effects of such alterations on the children's school learning is very great.

Summary

If we are convinced that little or nothing can be done to improve the learning of individual students, then our major effort must be invested in predicting school achievement and classifying children at very early age. Stable variables are ideal for this purpose. Such efforts result in a school system which is very effective for a small proportion of students while at the same time, it dooms most of the students to a deep sense of inadequacy and a dislike for school and school learning. Such a school system must invest much in the way of human and material resources with relatively small returns to the society or to the majority of students in the schools.

On the other hand, if we are convinced that a good education is necessary for all who live in a modern society, then we must search for the alterable variables which can make a difference in the learning of children and adults in or out of the school. Such alterable variables will do much to explain the learning process and they will do even more to directly improve the teaching and learning processes in the school. Our basic research task is to further understand how such alterable variables can be altered and their consequent effect on students, teachers and learning.

The small number of alterable variables I have discussed so briefly are only a few of the variables that have already been studied by researchers and used by teachers. These have already made a great difference in our understanding of school learning. But also they have brought about major changes in our views of learners and their amazing potential for learning. It is my hope that this small list will be rapidly expanded and that they will become equally central for teachers, parents as well as researchers. When they are thoroughly understood and well used, they will bring about the most profound changes in the schools and in the society.
You have a problem with reading?

Even a proficient mature reader occasionally has problems with reading. Try reading this sentence.

“that that is not that is not is that it”

Even when appropriate punctuation is provided to facilitate the apprehension of the linguistic structure of this sentence, its meaning is not easily evident.

“That that is, is not that that is not. Is that it?”

The following sentence is an even harder example.

“Mary where Jane had had had had had had had had had had the teacher’s approval.”

Your problem as a mature reader with the readability of these sentences is only in some ways similar to that of a very young child learning to read. His task is more complex.

Readability of Instructional Materials

The problem of readability in instructional materials is an important one. If the aim is for the child to learn from a book, the task is immensely facilitated if the book is suitable for the target population. Teachers and writers should ensure that a piece of writing makes sense to the children. The fact that it makes sense to an adult, who can read it easily, does not mean that the same words will make sense to a child. There is enough evidence to show that most of us tend to lose heart if what we are reading seems to be too difficult or unfamiliar (Harrison, 1980, p. 2).

Factors Affecting Readability

Those involved in providing books for children should ask this question, “What makes a book difficult for a certain child?” The following sections contain a systematic discussion of the factors affecting readability. Although each aspect is treated separately they are closely related to one another. It should also be noted that the discussion has to rely on findings from overseas studies because these areas have not been researched for Singapore children at this age level. However, some support for these findings comes from our observation of children behaviour during the testing period in the Reading Skills Project (see Ng, 1984).

Conceptual Difficulty and Interest

The consideration of conceptual difficulty or concept load is probably the most important but it is also one that is very difficult to estimate reliably. For beginning readers, writers have attempted to solve the problem of conceptual difficulty by writing about events and persons children are familiar with. Normally, general studies of reading interests or reactions to the type of stories are used as important guides to selecting content for young children. Young children prefer stories about animals, other children, fantasy and fairy tales (Spache, 1978). It is true to some extent that the difficulty of a book is an aspect of interest. Books that are usually two or more grades above the children’s reading levels have been deemed appropriate for children when interest is high. Sometimes when interest in content is low, books have been rated by children as being too difficult. However, interest alone is not the only factor in readability because it cannot compensate for a lack of basic reading skills. Klare (1976) argues that although interest is an
An important variable in readability research, our approach should be to consider most carefully the difficulty of the texts which are read under conditions of low motivation.

**Typography and illustrations**

The other group of factors relate to the text itself. A summary of studies on typography found that readability is promoted by a moderate length of line, use of short paragraphs and moderate type size (Spache, 1978). In Singapore where the child is exposed to both English and a second language, the visual differences in these scripts (e.g. English-Chinese) may pose a problem to children in the early stages of reading acquisition.

Spache also found that children prefer books with at least a quarter of the total space given to illustrations, preferring large, boldly coloured, realistic pictures.

**Language**

Clay (1979a) discusses the many ways that written language can be simplified in reading acquisition texts, amongst them vocabulary and syntax. In many basal readers, the vocabulary is controlled for emphasis on repetition of sight vocabulary and/or gradual introduction of basic vocabulary (i.e. function words). Others attempt to write texts to reflect a child's natural spoken language and the attempt here is to avoid the complex aspects of language that are not yet in the child's control. These are sound attempts because vocabulary and syntax have been considered to be two of the most important factors determining text difficulty.

A child's complaint that a story has too many long words probably reflects his inability not only to enunciate the words but also his lack of familiarity with the word and its meaning. An indicator that is sometimes used to measure vocabulary difficulty is the length of the word. However no one would seriously consider that any sentence comprising short words would be automatically suitable for reading acquisition texts. The factor considered in the Spache Readability Formula (1978) is word frequency. Most of the frequently used words in normal writing are the function words i.e. structural elements of the sentence (e.g. the, and, is). Although it would be ridiculous to base a child's reader solely on these words, it seems sensible to ensure that these words appear frequently in the readers because familiarity with these words facilitates reading of other texts. The other group of words like nouns and adjectives (e.g. cat, big) should also be familiar to children.

Complex syntactic structures may present difficulties in the sense that they put too great a load on short-term memory and information processing capacity. Harrison (1980) discusses this aspect very adequately listing five aspects of syntactic complexity. For example, it has been found that modal verbs (e.g. might, could, may, should) cause comprehension difficulties for poor readers and make recall more difficult for fluent readers. The other four aspects are as follows:

(i) Active verbs are easier to read and recall than passive verbs, and they are less likely to be misunderstood when a negative statement is made.

(ii) Active verbs are easier to comprehend and to recall than an abstract noun formed from the verb.

(iii) Generally speaking, the more clauses there are in a sentence, the more difficult it is to understand.

(iv) Sentence length is not always correlated positively with text difficulty. Compression reduces sentence length but can make comprehension more difficult.

Harrison points out that these five aspects represent areas which are difficult for the reader but these are not necessarily related to flaws in the author's writing ability. Complex thoughts may require complex sentence structures and it is not wrong to use complex sentence structure. However writers have to be aware that children do tend to find sentences containing them difficult to understand and therefore complex sentence structures should be avoided when they are unnecessary.

**Textbook policy in Singapore**

The importance of readability in textbooks is recognised by the Textbooks Division of the Ministry of Education in Singapore. It is established policy for publishers to submit textbooks for review to the Ministry of Education with regard to their suitability for use in Singapore's secondary schools. There is a set procedure of testing the materials with readability formulae, trying them out on children and surveying some teachers' views on the material before a book is approved or adopted for school use. No corresponding procedures apply to the primary school textbooks.

This fact warrants close attention. If readability is an important consideration, some revision is required some revision is required when new texts are prepared. Learning to read is not an easy task. The child with little motivation will find the dual task of learning a new language and learning to read in that language quite difficult.

These are presented in a graded series in Singapore. The texts should in some cases be presented in a moderate reading pace that fosters their interest in the materials and more varied groupings of the two. Studies show that teachers and children make progress in reading proficiency and readability in the primary schools if these are therefore an important consideration.

**The Measurement of readability**

The problem of measuring readability is not an easy one. Baldwin and Kantor, 1981 suggest that at times about reading acquisition texts, we should consider reading as a process not a product. For example average sentence length in a text has no number of letters in the word (Baldwin, 1981).

Reading ability is a complex process like the child's ability to write. It is usually not controlled by the writer. The writer come closest to understanding the content of text and text is in reality a reflection of that content. Writers and text are usually materials with which the child is not very familiar.

The running text is not a direct way of measuring the difficulty of the text. Attempts have been made to present system of measurement of readability as the samples text. The reading of texts with less difficulty will result in a lower Frustration level.

One of the important factors in determining the suitability of a text is the length of the text. The readability estimation of a text depends on the length of the text.
an important consideration when the child has acquired some reading skills, surely it is even more important when the child has not learnt to read. Learning to read when you know the language is a difficult enough task but the ordinary Singapore child with little or no command of English has a dual task of learning the language as well as learning to read in that language.

These are precisely the children for whom a well-graded series is very important. The basic reading texts should expose children to new challenges at a pace that fosters an increasing control over richer and more varied texts (Clay, 1979a). Although some teachers and children may not need a graded series, most will, even if only to help indicate levels of progress in reading instruction. The measurement of readability in primary school reading texts, is therefore an important issue.

The Measurement of Readability

The problem of measuring readability however is not an easy one. A recent readability study (Davison and Kantor, 1982) shows that much is still unknown about reading difficulty. Most readability formulae consider readability in terms of text variables, for example average sentence length and average number of long words (Readance, Bean and Baldwin, 1981) but other equally important factors like the child's experience, interest and ability are usually not considered (Standal, 1978). Methods that come closest to studying the interaction of the child and text are methods that use actual tryouts of materials with students, to judge how difficult the text is in reality for the student (Readance, Bean and Baldwin, 1981; Singer and Donlan, 1980). The running record developed by Clay (1979b) is one such procedure. Primary school teachers have used this technique extensively in New Zealand for various purposes, the assessment of readability being one of them (Clay, 1979b; Ng, 1984). The same technique has been used to investigate the reading skills of Singapore children (Ng, 1980a, 1980b, 1983a, 1983b). The results of these investigations show that although many children are learning to read in the present system at least one quarter of the children in the samples tested are reading familiar classroom texts with less than 90% accuracy, that is at the Frustration level (Burns & Roe, 1980).

One of the implications of this finding is that the children are using texts that are not suitable for them. To provide a counter-check on this finding, readability estimates were worked out for the Primary 1 to 3 reading texts, using the Spache Readability Formula (Spache, 1978). This formula was chosen because it is generally considered to be the best of the readability measures available at the early primary school level. The formula takes into consideration two variables found to predict reading levels most consistently i.e. a measure of vocabulary difficulty based on word frequency in children's reading materials and sentence length which correlates highly with syntactic complexity.

Readability estimates for basal reading series in Singapore

There are two series of English reading materials currently in use in Singapore's primary schools. Both are based on the New English Syllabus and are called Primary English Programme (PEP) and New English Series for Primary Education (NESPE), produced by the Curriculum Development Institute of Singapore.

Figure 1 is a graphic representation of the readability estimates calculated for the PEP and NESPE series. Also depicted is the ideal situation where the line for readability levels slopes gently upward from Grade 1 to almost Grade 4. It can be seen that although the values for these estimates of both series generally increase as one goes up the grade levels, there is no even spread nor adequate distribution of the values. For example, reading levels in the PEP series range from 1.2 to 3.1, and in the NESPE from 1.2 to 2.7, instead of from 1 to 3.9. An examination of the average readability of NESPE books intended for each grade level shows that they are about the same (1.5, 1.7 and 2) and similarly for the PEP series (1.7, 1.9 and 2). The readability estimates for the supplementary stories in the PEP series show a similar pattern. Such closeness indicates a problem of sequencing. Although a perfectly straight line may not be entirely possible, there should not be much deviation from the ideal gradient. Furthermore, there are some stories (e.g. 2.8 of PEP 2A reader) which seem to be overly difficult.

There is yet another problem. The Spache Readability Formula yields readability levels which reflect the reading levels of children in the United States for whom English is the native language. It is a generally accepted practice in Singapore to add from one to two years to compensate for the difference in language backgrounds. If a minimum of one year is added to these estimates, one can see that the stories of both the PEP and NESPE series in Primary 1 are too difficult for the children (see...
Figures 1 and 2 show the readability levels of the basic texts in the PEP and NESPE series. Figure 1 indicates that the ideal progression is higher than the actual progression, especially in Primary 2 and Primary 3. Figure 2 shows that the projected range is closer to the ideal range compared to the actual range.

Table 1 presents the readability estimates for the basic texts in the PEP and NESPE series. The table includes the year, readability estimates, ideal range, ideal average, projected range, and projected average for both PEP and NESPE series.

Table 1. Table 1 shows the percentage of words introduced and the acceptance rate of introduced words, which is from 2 percent (NESPE) and 3 percent (PEP) from 1979 to 1982. This finding confirms the rationale that reading children will be able to read high-quality texts, that the rate of introduction of new words will be high for both PEP and NESPE. This finding confirms the rationale that reading children will be able to read high-quality texts, that the rate of introduction of new words will be high for both PEP and NESPE.

Table 2. Table 2 shows the standard deviation range and average for the percentage of words introduced and the acceptance rate of introduced words.
To summarise then, there are 3 measures that indicate that there is a problem of readability in the basic reading texts used in the Singapore primary schools. It has been noted in a previous research study that the high progress readers are not affected much by difficult books (Ng, 1984). Creative, varied or flexible approaches to reading texts seem appropriate for high progress readers but slow readers appear to have great difficulties learning regular patterns in such rich reading environments. We must make the regular patterns (e.g. language patterns, concepts about print) very obvious to them and these patterns need to be repeated. However, in the selection (or production) of simple, regular or controlled material for these children, one must be careful to avoid materials that will develop habitual responses for a particular type of language or material (Clay, 1979a). Such habituated learning may hinder transfer to more complex tests. There needs to be a balance between using regular and familiar texts to facilitate practice and introducing new features once a skill has been learnt. This problem of controlling textual material for slower readers to facilitate their learning requires special attention. Even for the average child such attention to the difficulty sequence in the school reading series can only prove beneficial, especially in the early stages of reading acquisition.

**Implications for Singapore Education**

The reader following the discussion so far should realise now the complexity of the problem of readability and the many factors affecting text difficulty. This means that writers need to consider not only one but many factors when preparing texts for reading acquisition. To achieve a sequencing of learning opportunities for the children, some ordering needs to be exercised over vocabulary, sentence structure and concepts. The attempt here is to simplify the task for the young learner and grade texts with a gentle increase in difficulty.

In Singapore this consideration is very important because most children do not speak English when they come to school. Foreign reading programmes need to be modified to take account of the fact that the Singapore child has to learn rapidly the language structures as he is learning to read. A second modification is to simplify the material in the reading texts. Texts suitable for the good or average native speaker will contain structures too complex for the Singapore child. The sentences in the texts should be similar in length and in construction to

---

**Table 1: Ranges and Averages of Readability Estimates (using the Spache Readability Formula)**

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readability Estimates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideal Range</td>
<td>1 - 1.9</td>
<td>2 - 2.9</td>
<td>3 - 3.9</td>
</tr>
<tr>
<td>Ideal Average</td>
<td>1.5</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Projected Range</td>
<td>0 - 0.9</td>
<td>1 - 1.9</td>
<td>2 - 2.9</td>
</tr>
<tr>
<td>Projected Average</td>
<td>0.5</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Pep Range</td>
<td>1.2 - 2.2</td>
<td>1.3 - 2.8</td>
<td>1.5 - 3.1</td>
</tr>
<tr>
<td>Pep Average</td>
<td>1.7</td>
<td>1.9</td>
<td>2</td>
</tr>
<tr>
<td>Nespe Range</td>
<td>1.2 - 1.7</td>
<td>1.3 - 2.1</td>
<td>1.3 - 2.7</td>
</tr>
<tr>
<td>Nespe Average</td>
<td>1.5</td>
<td>1.7</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table 2: Percentage of New Words Appearing in the Stories of NESPE and PEP Series of Primary 1**

<table>
<thead>
<tr>
<th></th>
<th>NESPE</th>
<th>PEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>40.9</td>
<td>37.5</td>
</tr>
<tr>
<td>Standard Deviations</td>
<td>17.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Range</td>
<td>8 - 71</td>
<td>21 - 71</td>
</tr>
</tbody>
</table>

---

1984 VOL 6 NO 1 · 11
the ones that Singapore child can master orally in his first few months of school. The vocabulary too should be as easily accessible.

A possible argument against the above aproach is that the child could improve his oral language by learning to read from more complex structures, that unless he is made to attempt to read more complex structures he will never learn to read texts which contain them. However objectives of learning tasks at each stage need to be discerned and clarified because the main task for the child at the early primary levels is to learn a tool for learning, which is, to learn to read. It follows then that for a novice reader, his own language patterns should be a guide to the type of text he should try to read until his reading process is well established and functioning smoothly.

Recommendations

Except for those teachers who have learnt about readability and formulae for calculations, Singapore teachers naturally assume that the reading texts are appropriate for children in their classes. It has been shown in the preceding sections that this may not be true. A further common assumption is that all children will benefit from concentrated instruction solely from these books written for their age/grade levels. This is the basis underlying the Singapore textbook policy where parents purchase a small number of grade level books for their children. Reading related literature abounds in references to the contrary. To mention a few, Neville and Pugh (1982) recommend that schools should have a wide variety of books available at differing levels of difficulty to cater to the range of reading ability found within a particular age level. Gaies (1979) extends the recommendation to second language learners stating that they are even less homogeneous in ability than school children learning in their native language. The data from the Reading Skills Project (Ng, 1983a; 1983b) show a wide range in reading levels not only between, but within the 3 primary class levels and it seems logical that a corresponding range of curriculum materials is necessary to cope with this heterogeneity.

Books with readability levels sequenced for increasing difficulty and chosen to suit average grade levels would seem to be the first step in matching materials to the pupils' abilities, a step vital to any good reading acquisition programme. It must be stressed that this is an important consideration for the average progress children and even more necessary for the slower children. Specifically, the following recommendations are made:

1. Some careful attention should be paid to the readability levels worked out for the PEP and NESPE reading series so that resequencing, addition of missing levels and a more gradual introduction of new vocabulary can be considered for future revisions of the materials.

2. The textbook policy should be reviewed to shift the control of the children's textbook from the parents (who are not aware of the problem) to the teachers who with training will be able to make the optimal match of materials to ability. This implies that texts should be purchased by the schools and issued on a temporary basis for the children's use by the teacher. Such arrangements are well established in other countries e.g. New Zealand.

Since neither of these recommendations can be easily and quickly implemented, we suggest that in the meantime teachers be taught how to calculate and utilize readability levels* or that they be given the readability information and encouraged to use the stories more flexibly, in the order of increasing difficulty. They should also be encouraged to integrate strategies and other word attack skills with the stories as they are read. Teachers should be made aware of the rapid vocabulary introduction rate, and of how to prepare the children for each story to minimize the frustration of vocabulary overload.

The Reading Skills Project team has also looked at various other reading series written for children overseas, some of them well-tried ones. Those interested in the revision of reading texts for Singapore children can use the report (Sullivan, 1984) to help in the production of materials. Again as an alternative measure, those books found suitable for Singapore children can be used as supplementary texts to the core series in any school.

The testing of reading texts

All reading acquisition texts should be assessed with regards to their suitability for use in the classroom. Readability formulae estimates can be used as preliminary indicators of text difficulty to be substantiated by systematic trial and testing. Such procedures have been worked out in a study which tested the readability of some primary school readers (Ng, 1984).

* This is occurring presently in the in-service reading course at the Institute of Education, Singapore

References

9. Ng, Seok M. in Singapore. Paper No. 5.
These procedures may appear expensive and time-consuming. However readability is an important factor in any school text and it is an even more vital consideration in reading acquisition texts. To confront a child with books that contain too many difficult features is detrimental to his progress in learning to make sense of print. Therefore if important decisions about texts are to be made, it is worthwhile to institute rigorous procedures to ensure that these texts are readable for the novice reader.

References

Parental Authoritarian Control and Cognitive Complexity

Boey Kam Weng

Introduction

Studies on the conceptual system proposed by Harvey et al (1961) suggested that the concrete mode of cognitive functioning is associated with certain developmental factors such as restricted exploration of the environment, overcontrol by parents, avoidance of uncertainty, conformity to external superimposed norms, and discouragement of independence, etc. Using the framework of Harvey, Schroder et al (1967) specified two types of training methods, one of which he called the deductive method. Parents adopting this method provide the child with ready-made and fixed rules. The child is taught to avoid uncertainty by looking externally for rules. The variety of perceptions and responses available to the child is highly restricted. The environment is so structured that it is unrealistically oversimplified. Schroder et al believe that this type of training method would bring out a cognitive structure which is characterized by compartmentalization and inability to think in terms of degrees or relativities.

Studies on field-independence (Witkin et al, 1962; Dawson, 1963) present a similar picture. It is found that mothers of children with less differentiated cognitive structures tend to use severe punishment and irrational threat to control children’s behaviour. These parents stress conformity, dominant control, harsh training, and strict discipline. Reports linking child-rearing practice to creativity (Dreyer and Wells, 1966) also indicate that mothers of less creative children are characterized by authoritarianism and denial of individuality and expression of feeling.

The above pattern of socialization bears great similarity with that found in traditional Chinese families, where authoritarian control over children is almost absolute. Physical punishment is often applied by Chinese parents without question. Children are often not allowed to express their own impulses, in particular, aggressive impulses. Strict and harsh discipline are recognized as effective means of training a child. The disciplinarian shows little concern over the child’s sense of self-respect. Obedience is emphasized to the extent of completely subjugating one’s own wishes to those of the parents. The idea that it might be advantageous to look at things from, or at least pay attention to, the child’s point of view seems to be alien to most Chinese parents. The child is not entitled to a point of view, and is often treated as if he does not have any. In the process of socialization, major emphasis is given to moral development and proper interpersonal relationship (Ho, 1975). The child is taught to conform to the demands of “rules of propriety” in his personal conduct. It is the “young in years but old in style” rather than the spontaneity of childhood that brings him praise from the adults. In sociological terminology, the control system of a traditional Chinese family is status oriented. Children’s behaviour is often regulated in terms of role expectation. The unique characteristics or the personal states of the children are not influential as a basis for the family decision processes. Parents tend to use a more rigid model of learning and teaching in which compliance, rather than rationale, is emphasized. The style of communication between parents and children is “restricted” rather than “elaborated”. It is not unreasonable to expect that such a family control system would restrict the number and kinds of alternatives for action and thought that are open to the child. More recent studies (Johnson, 1983; Bee et al 1982; Ramey et al 1979) also suggest that parental-child interaction plays an important role in cognitive development.

In this study, the relationship between Chinese traditional parental attitude and cognitive structure is empirically explored. The attitude of traditional Chinese parents is related to the creativity of their children. This study is intended to examine the relationship between parental authoritarian control and creativity, namely, the interpretative complex of traditional Chinese parents and their children.

Method

Subject

The sample consisted of 22 Chinese children taking an introductory course at the GCE ‘O’ level. Their parents were Chinese by birth or by adoption, completing a parent questionnaire.

Measurements

The measurement involved the following three domains which are empirically evaluated. They refer to the differentiating and measuring parental attitude of traditional Chinese parents. They are as follows:

(1) The Role Communication Test (RCRT)

In RCRT, a role-playing situation with a partner is employed to elicit a response. The subjects are three of the persons appearing in the comparison and interaction of the role representatives. The measure indicates if the theme is elicited, either through a short role-playing procedure. Six 6-point scales are used, limited to 100% level. Each score is scored by summation of numbers and numbers. The test is also supplemented by the split half reliability.

(2) The Figure Categorization Test (FCT)

FCT, a measure of cognitive complexity, is elicited by response to the symmetry figure. It involves height, color,
is empirically examined. It is expected that parental attitude of traditional Chinese would be negatively related to the level of cognitive structure of their children. This expectation is tested in terms of cognitive complexity in three different domains, namely, interpersonal, physical, and numerical domains.

Method

Subject

The sample consists of 36 first year college students taking an introductory course in psychology. All of them were Chinese aged 19 to 21. Thirty-nine per cent of these subjects were Chinese educated up to GCE 'O' level, the rest were English educated. Their parents were also invited to participate by completing a parental attitude scale.

Measurements

The measurements of cognitive complexity in the three domains conform to the definition which refers to the differentiated dimensions a person employs in perceiving objects in a given domain.

1. The Role Construct Repertory Test (RCRT).

   In RCRT, a test of cognitive complexity in the interpersonal domain, subjects are presented with a role title list which consists of 15 important roles (e.g. parents, a good friend, teacher, etc). They are asked to consider and compare three of them at a time. No two roles or persons appeared together in more than one comparison and each person appeared three times. Constructs are formed by having subjects indicate in what important way the two of them are alike and at the same time different from the third. After one construct dimension is elicited, they are asked to rate all other persons in terms of the same dimension on a 6-point scale. The number of comparison is limited to 15, making a 15 X 15 matrix. The test is scored by using Bieri's (1966) matching procedure. Scores derived from figures of odd numbers are correlated with that of even numbers. The correlation computed is augmented by Spearman-Brown formula. The split half reliability thus estimated is .83.

2. The Figure Comparison Test (FCT).

   The FCT, a measure of cognitive complexity in the physical domain, consists of a group of geometry figures of various shapes, areas, textures, heights, colours, etc. Each subject is presented with three figures at a time and is asked to point out in what important aspect (or aspects) the two of the figures are alike and the same time different from the third. Verbal responses of the subject are analysed in terms of the different aspects mentioned. The split half reliability of FCT is .88.

3. The Digit Grouping Test (DGT).

   The DGT, a measure of cognitive complexity in the numerical domain, consists of 32 digit numbers which could be classified in several ways. For example, they could be grouped on the basis of odd or even number, prime number, arithmetic progression, etc. Each number is written on a circle chip. The digit number chips are presented to each subject in the same fixed random order. Each subject is instructed to put together the numbers which seem to him to belong to a group, and the number of digits in a group should not be less than three. Each subject is allowed to regroup the digits if he thinks some of the digit numbers could be regrouped again in other ways. The number of different principles used in grouping the digit numbers serves as an indicator of cognitive complexity. A test-test reliability of .78 has been obtained from an independent study on 20 first year students in the same college.

4. Parental Attitude Scale (PAS).

   The PAS was developed for obtaining a measure on the most salient aspect of Chinese parental attitude, i.e. authoritarian control. It consists of 14 subscales, each measuring a specific aspect of authoritarian control (e.g. intrusiveness, denial of child's wishes, suppression, etc). There are five statements for each subscale. Parents are asked to indicate on a 7-point scale how much they agree or disagree with each statement. Reliability of internal consistency of each subscale ranges from .54 to .81. In this study, principal component analysis was used to determine the minimal factors needed to account for most variances in the PAS. Two principal component factors were extracted from data on the mother sample and three were extracted from data on the father sample. A brief description of the factors are presented below.

   FACTOR I OF PARENTAL ATTITUDE SCALE (MOTHER): Harshness and Discouragement of Contradicting Opinions. The highest loadings are from such subscales as strictness, denial of child's wishes, discouragement of contradicting opinions.
FACTOR II OF PARENTAL ATTITUDE SCALE (MOTHER): Overprotection and Over-control. This factor deals primarily with parents' protection of children from hardship, intrusiveness, closeness to experience; and secondarily, suppression of aggression and sex.

FACTOR I OF PARENTAL ATTITUDE SCALE (FATHER): Overcontrol and Harshness. This factor is typified by subscales such as: suppression of aggression and sex, denial of child's wishes, intrusiveness, encouragement of diligence and strictness.

FACTOR II OF PARENTAL ATTITUDE SCALE (FATHER): Rigid Orientation and Discouragement of Contradicting Opinions. The two subscales loaded on this factor are rigid orientation and discouragement of contradicting opinion.

FACTOR III OF PARENTAL ATTITUDE SCALE (FATHER): Emphasis on Hardship and Repayment of Parents' Kindness. This factor is defined by both positive and negative loadings. The two subscales related to this factor are emphasis on hardship, and appreciation and repayment of parents' kindness.

Procedure
Each subject participated in two testing sessions. The first session is a group testing, in which RCRT was given. The second one was an individual testing session, in which FCT and DGT were administered. After the two testing sessions were over, each subject was asked to take two copies of the PAS, to be filled out by both their parents. They were asked to return the PAS within 14 days. If their parents were unwilling to answer the PAS, it was to be returned blank.

Results
Data on the PAS were collected two weeks after the testing sessions. Only 31 PAS (14 mothers and 17 fathers) were completed. This sample was too small to allow significant analysis. After a follow up inquiry, another 14 parents (10 mothers and 4 fathers) completed and returned their Parental Attitude Scale. Therefore, the number of scales used for statistical analysis was increased to 45 (24 mothers and 21 fathers).

By means of factor-score coefficient matrix, each of the 24 mothers was assigned two factor scores, and each of the 21 fathers, three factor scores. Linear and quadratic trend analyses between parents' factor scores and subjects' scores on cognitive complexity were computed. Factor scores of each parent were ranked and divided into high, middle and low thirds. These groupings were used to trichotomize subjects' scores on cognitive complexity. In other words, PAS factor scores were treated as independent variables, and cognitive complexity scores as dependent variables.

The linear and quadratic Fs indicating the magnitude of the relationships of parental attitudes and cognitive complexity as well as the means and standard deviations of subjects' scores on cognitive complexity for the three groups are shown in Tables 1 and 2.

The only significant finding on the mother sample is a linear relationship between Factor II (overprotective and overcontrol) and RCRT. This indicates that the subject whose mother is overprotective and overcontrolling tends to be cognitively simple in the interpersonal domain. No significant relationship is found between mother's parental attitude and cognitive complexity in either the physical or numerical domains.

Results of the father sample present a different picture. As Table 2 shows, Factor I and III are significantly related to RCRT. Factor II, on the other hand, not only linearly, but is also quadratically related to FCT. These findings indicate that: (a) Fathers who are overcontrolling and harsh, emphasize hardship and repayment of parents' kindness, tend to have children who are cognitively simple in their interpersonal perception. (b) Fathers expressing strong attitude reflecting a rigid orientation and discouragement of contradictory opinions tend to have children who are less differentiated in perceiving physical objects. Interestingly, fathers who maintain moderate, rather than extreme, attitudes pertaining to changing orientation and encouragement of contradictory opinions are more likely to have children who are cognitively complex in the physical domain.

Discussion
As pointed out earlier, parental attitudes of traditional Chinese lay emphasis mainly on proper interpersonal relationship. This may lead one to expect that its relationship to cognitive complexity could be limited to only the interpersonal domain. This expectation seem plausible especially when we take into consideration the domain-specificity of cognitive complexity (Vannoy, 1968). Data on mother sample seem to support this line of reasoning. However, it receives no support from data on the father sample. Findings in this study show that
### TABLE 1
RELATIONSHIP OF PARENTAL ATTITUDE FACTOR SCORES (MOTHER) TO MEASURES OF COGNITIVE COMPLEXITY

<table>
<thead>
<tr>
<th>Factor</th>
<th>Measure #</th>
<th>High</th>
<th>Middle</th>
<th>Low</th>
<th>Linear</th>
<th>Quadratic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>D</td>
<td>S</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>RCRT (I)</td>
<td>346.57</td>
<td>348.00</td>
<td>305.50</td>
<td>1.36</td>
<td>.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38.67</td>
<td>76.32</td>
<td>79.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>FCT (P)</td>
<td>18.13</td>
<td>17.13</td>
<td>15.13</td>
<td>1.20</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.96</td>
<td>3.98</td>
<td>6.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>DGT (N)</td>
<td>9.63</td>
<td>8.88</td>
<td>8.36</td>
<td>.38</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.34</td>
<td>3.31</td>
<td>3.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>RCRT (I)</td>
<td>371.15</td>
<td>340.50</td>
<td>285.88</td>
<td>8.23**</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>88.54</td>
<td>45.49</td>
<td>27.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>FCT (P)</td>
<td>17.14</td>
<td>17.25</td>
<td>16.25</td>
<td>.05</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.46</td>
<td>4.95</td>
<td>6.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>DGT (N)</td>
<td>8.63</td>
<td>9.25</td>
<td>9.00</td>
<td>.04</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.65</td>
<td>3.11</td>
<td>3.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* I, P, and N in parenthesis indicate, respectively, the interpersonal, physical, and numerical domains.
** Significant at .01 level (df = 1/18)

### TABLE 2
RELATIONSHIP OF PARENTAL ATTITUDE FACTOR SCORES (FATHER) TO MEASURES OF COGNITIVE COMPLEXITY

<table>
<thead>
<tr>
<th>Factor</th>
<th>Measure #</th>
<th>High</th>
<th>Middle</th>
<th>Low</th>
<th>Linear</th>
<th>Quadratic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>D</td>
<td>S</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>RCRT (I)</td>
<td>392.71</td>
<td>329.57</td>
<td>280.29</td>
<td>13.72**</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td></td>
<td>87.69</td>
<td>38.23</td>
<td>18.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>FCT (P)</td>
<td>15.00</td>
<td>18.86</td>
<td>16.86</td>
<td>.35</td>
<td>1.18</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.16</td>
<td>4.20</td>
<td>7.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>DGT (N)</td>
<td>7.00</td>
<td>10.71</td>
<td>9.71</td>
<td>1.91</td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.56</td>
<td>4.07</td>
<td>3.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>RCRT (I)</td>
<td>369.71</td>
<td>304.71</td>
<td>328.14</td>
<td>1.24</td>
<td>1.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>96.09</td>
<td>46.19</td>
<td>55.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>FCT (P)</td>
<td>11.43</td>
<td>20.43</td>
<td>18.86</td>
<td>10.13**</td>
<td>6.91*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.82</td>
<td>3.46</td>
<td>3.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>DGT (N)</td>
<td>8.43</td>
<td>9.00</td>
<td>10.00</td>
<td>.54</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.11</td>
<td>3.27</td>
<td>4.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>RCRT (I)</td>
<td>351.14</td>
<td>370.00</td>
<td>380.28</td>
<td>4.52**</td>
<td>3.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>82.06</td>
<td>67.26</td>
<td>18.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>FCT (P)</td>
<td>18.43</td>
<td>15.43</td>
<td>16.85</td>
<td>.25</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.22</td>
<td>4.58</td>
<td>7.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>DGT (N)</td>
<td>8.93</td>
<td>9.43</td>
<td>9.71</td>
<td>.44</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.99</td>
<td>4.54</td>
<td>3.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* I, P, and N in parenthesis indicate, respectively, the interpersonal, physical, and numerical domains.
* Significant at .05 level (df = 1/18)
** Significant at .01 level (df = 1/18)
father's attitude of authoritarian control exerts its effects upon cognitive complexity not only in interpersonal perception, but also in the perception of physical objects. It may be that fathers who are authoritative and controlling also place restriction on their children's exploratory behaviour in the physical environment. Their children's experience would then be limited, and hence, the development of a higher level of cognitive structure in the physical domain is hindered.

Nonetheless, cognitive complexity in the numerical domain does not have any significant relationship with parental attitude of both the father and mother samples. Perhaps numerical concepts are acquired at a later stage of development where formal school learning plays a more important role. At this point, the distinction between the "content" and "structural" approaches to education seems particularly relevant. The teacher who emphasizes the "content" of work tends to encourage rote learning. More time would be spent on imparting correct knowledge than on teaching students to think independently. In this case, students may have acquired the knowledge but are unable to use it in a creative manner. The "structural" approach, on the other hand, encourages students to approach problems in a flexible manner and to use information for generating new ideas. It is therefore not unreasonable to believe that the student's level of cognitive complexity also depends on the extent to which the two approaches are emphasized.

Unfortunately, the structural approach has not been emphasized in our school learning. Instead, great emphasis has been given to the acquisition of knowledge. School performance is measured by examinations assessing how much a student has learned within a given period of time. Little attention seems to be focussed on teaching students to view issues and problems from a variety of standpoints. This kind of education can be expected to lead to a low level of cognitive complexity. Although students with a low level of cognitive complexity may perform well in examinations requiring only fixed or standard answers, they would have difficulty in adapting to the complexity of the ever-changing social world. In a previous study (Boey, 1979), it was argued that in situations where old and inappropriate ways of responding need to be abandoned and a new response set has to be adopted, the advantage is with the cognitively complex persons rather than the cognitively simple ones. This is expected as a person with a high level of cognitive complexity has available a greater number of dimensions in perceiving issues and therefore would be more able to consider alternatives and change his response set accordingly.

In this study, it has been shown that the level of cognitive complexity is negatively related to parental authoritarian control. This finding has an important implication for teachers who also play a significant role in bringing up our future citizens. If adaptability and flexibility form part of our objectives in education, then students should be encouraged to search for diversity, to derive values and to evolve solutions from their own experiences without fear of punishment for deviating from established 'truth'. Instead of authoritarian controlling and providing ready-made rules for students to follow, teachers can arrange an environment that provides information as feedback of their exploratory behaviour. Perhaps teachers themselves should be more flexible and exploratory in planning educational programmes.

The results of this study also point to another important issue. Four of the five significant findings on the relationships between parental attitude and cognitive complexity concern the father and only one concerns the mother. These findings are consistent with recent studies which indicate that the father's role in child-rearing is an important one (for example, Pedersen et al 1979; Levy-shiff 1982). Although due to economic realities fathers are often "driven out" from the family and spend less time with the children, their importance in the socialization of the children must not be ignored (see Lamb, 1975; 1981). However, a survey of the literature on parent-child relationships suggests that there is a lack of studies on father's role in child development. Such a neglect may leave many possible relationships unexplored and may therefore distort our understanding of the dynamics of development. And it may not be an exaggeration to suggest that this neglect of fathers may have adversely affected the rearing of males.

References

References


Career Choice: An Exploration of Personal Possibilities by Young People in Australia and Singapore

M.E. Poole and A. Chang Shook Cheong

Introduction

In most cultures, young people begin to think about plans for the future during adolescence. In particular, the question of career choice becomes especially salient. Among the various crises associated with adolescence in Western cultures, that of thinking about education and work increases. In developing countries, it has been suggested that the level of development enhances life-style become associated with educational and occupational criteria (Saha, 1981; Chang, 1983).

The question addressed in this study concerns how young people, in two contrasting cultures, at this phase of their development (viz. adolescence) perceive career choices for themselves. What jobs do they know about as they start to plan for their future? How broad are their horizons? What possibilities do they consider for themselves? The questions raised in this study were guided by two sets of perspectives — 'possibility theory' and 'modernity'. The first concerns those sets of elements associated with 'modernity' (Berger, 1977). First, there is the notion of futurity, a shift in concern from the past and present to the future exemplified in the individual's life as actively planning for a career and for upward social mobility. Second, there is the process of individualization: a progressive separation of the individual from collective entities, leaving the individual with more complicated decision-making and fewer social supports. Third, there is the element of liberation: areas in one's life once thought to be dominated by fate now come to be seen as occasions for choice — modernity entails "a multiplication of options", a burden of choice. Other features of modernity include striving and restlessness, increased concern with time and with the consumer life-style. Similar concepts regarding modernity and the role that schooling plays in the process of transmitting such values can be found in Delacroix & Ragain (1978), Armer & Youtz (1971), Horowitz (1970).

Very little is known, however, about the possible futures adolescents alternatively consider for themselves. Do they, in fact, see 'multiple possibilities' for themselves in relation to career choice or do they narrow their options well in advance of the decision-making phase? Are adolescents aiming high, e.g. at achieving professional and technical jobs as part of their absorption of the values and ethos of 'modernity'?

In an analysis of the role and status of youth in Singapore, Tham Seong Chee (1976) outlined a set of underlying values and help define the ethos of 'modernity'. Among these are dimensions of achievement; and the culture of individualization. Within in fact, wrestling with the individual choice and for testing oneself against several possibilities, before narrowing and focusing choice and action. Fourth, among the opportunities presented, an individual perceives only a limited range of alternatives — perceived possibilities. The second perspective concerns those sets of elements associated with 'modernity' (Berger, 1977). First, there is the notion of futurity, a shift in concern from the past and present to the future exemplified in the individual's life as actively planning for a career and for upward social mobility. Second, there is the process of individualization: a progressive separation of the individual from collective entities, leaving the individual with more complicated decision-making and fewer social supports. Third, there is the element of liberation: areas in one's life once thought to be dominated by fate now come to be seen as occasions for choice — modernity entails "a multiplication of options", a burden of choice. Other features of modernity include striving and restlessness, increased concern with time and with the consumer life-style. Similar concepts regarding modernity and the role that schooling plays in the process of transmitting such values can be found in Delacroix & Ragain (1978), Armer & Youtz (1971), Horowitz (1970).

Very little is known, however, about the possible futures adolescents alternatively consider for themselves. Do they, in fact, see 'multiple possibilities' for themselves in relation to career choice or do they narrow their options well in advance of the decision-making phase? Are adolescents aiming high, e.g. at achieving professional and technical jobs as part of their absorption of the values and ethos of 'modernity'?

In an analysis of the role and status of youth in Singapore, Tham Seong Chee (1976) outlined a set of underlying values and help define the ethos of 'modernity'. Among these are dimensions of achievement; and the culture of individualization. Within in fact, wrestling with the individual choice and for testing oneself against several possibilities, before narrowing and focusing choice and action. Fourth, among the opportunities presented, an individual perceives only a limited range of alternatives — perceived possibilities. The second perspective concerns those sets of elements associated with 'modernity' (Berger, 1977). First, there is the notion of futurity, a shift in concern from the past and present to the future exemplified in the individual's life as actively planning for a career and for upward social mobility. Second, there is the process of individualization: a progressive separation of the individual from collective entities, leaving the individual with more complicated decision-making and fewer social supports. Third, there is the element of liberation: areas in one's life once thought to be dominated by fate now come to be seen as occasions for choice — modernity entails "a multiplication of options", a burden of choice. Other features of modernity include striving and restlessness, increased concern with time and with the consumer life-style. Similar concepts regarding modernity and the role that schooling plays in the process of transmitting such values can be found in Delacroix & Ragain (1978), Armer & Youtz (1971), Horowitz (1970).

Very little is known, however, about the possible futures adolescents alternatively consider for themselves. Do they, in fact, see 'multiple possibilities' for themselves in relation to career choice or do they narrow their options well in advance of the decision-making phase? Are adolescents aiming high, e.g. at achieving professional and technical jobs as part of their absorption of the values and ethos of 'modernity'?
of underlying values which permeate adult society and help define the consciousness of youth. Among these are dimensions of futurity; the ethos of work and achievement; urbanization; industrialization and the culture of technology; and pro-individualization. Within such a society youth are, in fact, wrestling with 'modernity'. The question of individual choice and perceived possibilities therefore becomes as salient to a young Singaporean as it does to a young Australian. Indeed, the value dimension surrounding the opportunity structure is much the same. Adolescents in Australia have been shown to be concerned with questions of autonomy, individuality, choice, future planning especially in relation to careers, and comfortable lifestyle (e.g. Connell et al, 1975; Poole, 1983).

Within these two contrasting cultures, Australia and Singapore, each sharing values of 'modernity', the present study proposed to investigate dimensions of 'possibilities' concerning career choice: knowledge of possibilities, values concerning possible options and preferences among possibilities. The first strategy was to elicit the choice context in which career selections are made, i.e. knowledge of a range of occupational possibilities by young people in these two different but modern cultures. The second aspect involved gauging 'possibilities for self', as an index of an individual's value system and achievement striving, reflecting the vocational possibilities preferred for self among existing occupational hierarchies (e.g. professional, white collar, unskilled, etc.).

A key question within this 'awareness of possibilities' was whether personal preferences (choices) reflected the individual's total occupational awareness (breadth of horizons, consideration of 'multiple possibilities') or alternatively were situated within a narrower set of career options (fewer perceived 'possibilities for self').

Although the literature on adolescent aspirations and career choice is voluminous, there is little that deals specifically with the exploration of multiple options and possibilities prior to decision-making. The exception is the career awareness approach which focuses on knowledge, values and preferences and situates the processes of career decision-making within the context of choice (e.g. Wise, Charner & Randour, 1976; Hilton, 1962; Gross, 1967; Slocum, 1974). Yet, although attention has been given to knowledge of tasks involved in occupations (Wise, Charner & Randour, 1976), few researchers have considered the even more fundamental question of whether adolescents are aware of existing occupations in the workforce, and whether they see many possibilities for themselves. Limited knowledge of possible careers means that occupational choices are often made haphazardly — the reason for selection being the availability of the job, parent involvement in the work area, or simply a strong desire to leave school (Wright, et al, 1978; Poole, 1981, 1983). Given the substantial amount of occupational change associated with rapid increases due to technological development, the importance of having an extensive knowledge of the workforce before making a personal decision for self seems mandatory (Slocum, 1974).

A further question of increasing interest is the extent to which there are sex differences relating to awareness of occupational options and personal possibilities. In recent years attention has been given to factors in the labour market which restrict women to certain occupational ranges (Sinclair, et al, 1977; Poole, 1981, 1983; Forward, 1982; Connell, et al, 1982). Sinclair, et al (1977) reported, for example, that high school girls have been found to cluster their job choices around "traditional female occupations" (e.g. teacher, nurse, clerical worker, shop assistant); Connell, et al (1982) that adolescents perceive a special division of labour. Constraints on choice ('personal possibilities for self') due to sex role socialisation could therefore be anticipated in the present study for Australia. Is this also the case in Singapore? In Singapore, Thung Syn Neo (1979) describes the country's increasing need for women to participate in the labour force, showing pronounced rises of female employment in the manufacturing and commerce sectors. Today, some 37.7% of females in Singapore participate in the workforce. Are career choices ('possibilities for self') for young girls in Singapore constrained by gender?

In summary, then, the present study aimed to examine personal possibilities within the wider context of occupational knowledge and awareness. The basic consideration was whether the personal possibilities of adolescents in Australia and Singapore were enhanced or restricted by their occupational knowledge and awareness of career possibilities. In addition, the extent to which multiple possibilities for careers for self were considered was examined. The extent to which both awareness of options and a consideration of multiple options for self were associated with sex and country of origin was investigated with a view: (1) to delimit further some of the parameters of personal possibility theory suggested by Tyler (1978, 1983); (2) to exploring a basic initial dimension of the career
decision-making phase (awareness of options); and (3) to exploring whether some of the values associated with modernity are reflected in the career choices of youth in both countries, e.g. a valuing of professional or technical jobs.

Method

In any cross-cultural study comparability of samples is both crucial and problematic. The present sampling frame aimed at some comparability along the dimensions of school systems, age of students, gender composition and urban settings. Descriptive data on each sample is given in some detail, highlighting similarities and differences. Young People in Australia and Singapore are both alike and dissimilar. Most importantly and in terms of the present study, young people living in both countries face the pervasive pressures of ‘modernity’ and the developmental need to make career choices.

Australian Sample

Australian students involved in the study (n = 520) attended seven State government schools in the Sydney metropolitan area. Six of the schools were single sex, the other coeducational. The schools were selected on three broad criteria: (1) the socio-economic composition of their students; (2) their nomination by the New South Wales Department of Education; (3) the willingness of the schools to participate in the study.

The first two high socio-economic schools, located in the same area of the lower North Shore, were brother-sister schools with a long history of high academic standards. Consequently students came from different areas of Sydney to these ‘selective’ schools. The number of students from non-English speaking (NESO) in these schools totalled 23.8%. Furthermore, all NESO students attending these schools spoke English well. A similar socio-economic status and NESO composition was found in the high socio-economic status coeducational high school located in the northern suburbs. The number of students from NESO backgrounds was 14% (mainly Asian).

Four schools were located in areas classified as low socio-economic status. The first two were single sex schools located in the inner city area. The majority of students came from non-English speaking backgrounds, predominantly Greek, Lebanese and Asian (75.1%). The Asian group was mainly comprised of recent arrivals from Korea and Vietnam. Consequently, their English language ability was poor.

Only students with some degree of functional literacy in English were included in the present study.

The other two single-sex schools operated in conjunction with each other in the western suburbs of Sydney. A high proportion of students came from non-English speaking backgrounds (43.1%), predominantly Italian, Greek and Lebanese.

In the total sample there was a distinct clustering effect into high socio-economic status non-migrant schools and low socio-economic status high migrant density schools.

The sample comprises 292 females and 227 males. Students whose parents were Australian born formed 47.7% of the sample. An additional 10% of parents came from English speaking backgrounds such as English and American. The remaining 42.3% came from a number of ethnic backgrounds: Greeks (9.8%); Italian (4.2%); European (14.2%).

Students involved in the study were in Years 9 and 10. The mean age of those in the sample was 14.63 years and the range was 13.9 to 15.36 years. This age group was selected because they were at a period of their lives when career decision-making was becoming particularly relevant to them. The small number of students in the various NESO classifications did not make it feasible to explore sub-cultural influences in the present study.

Singaporean Sample

The Singaporean sample consisted of 90 boys and 90 girls at Grade 9 level, drawn from 4 schools (2 State and 2 Church schools). The schools were assigned to the Singapore research co-ordinator by the Singapore Ministry of Education. These schools were chosen on the criteria: (1) the multi-racial composition of their students; (2) the average academic ability of their students. The socio-economic background of the subjects was not a considered criterion.

The Church schools were Catholic schools and single sex. Most students in these schools were drawn from Catholic primary feeder schools and had a fairly good command of English. The schools were selective and students came from different parts of the state.

The State schools were co-educational and nearly all students attending these schools lived in the neighbourhood or nearby districts. Students in these schools usually came from less affluent homes than those in the Church schools.

The number of subjects selected from each school varied according to the school student body size.
The students were randomly chosen from all the Grade 9 classes of each school by the principal, according to the number of students specified by the co-ordinator. Since Singapore is a multi-racial society, the racial composition of the sample was based on the racial composition of the Singapore population — 76.5% of Chinese, 15% of Malays and 7.5% of Indians. All subjects were either Singapore citizens or permanent residents. The mean age of those in the sample was 15 years and the range was 14.25 to 15.75 years.

An overview of both the Australian and Singapore sample is presented in summary form in Table 1.

Instrument

A ‘Life Possibility’ Questionnaire, derived from Sundberg and Tyler (cited in Tyler, 1975) was administered to the two samples as part of a larger study relating to adolescent orientation towards work, leisure and the future. The ‘Life Possibility’ Questionnaire was designed to elicit adolescents' knowledge of a range of occupations and their personal preferences within this range.

Students were given 8 minutes to write down all the occupations they were familiar with. They were then, as a second task, asked to check (tick) those occupations they considered to be possibilities as careers for themselves. The specific instructions were: "Now we would like to know something about the occupations and careers you are familiar with. List below all the occupations you can think of. After you have listed all the occupations you can think of in the time allowed, place a X or cross in front of each occupation that you think you might be suited for or might follow later on." This ‘Extensiveness of Possibilities’ instrument enabled two scores to be calculated: (a) the number of occupations listed that the respondent was personally aware of; (b) the number of occupations checked as perceived possibilities for self. In addition, further information was obtained by coding both the range of occupations listed, and the specific personal possibility preferences, according to a socio-economic status scale, developed by Congalton (1968) and Lancaster-Jones (1968). This scale, like many of its more recent counterparts enables occupations to be ranked and categorised. ‘New careers’, both technological and professional, were located within this hierarchy which has been shown to persist in its broad structure.

The socio-economic scale used consisted of eight categories, broadly classifying sectors of the workforce under the following headings:
1. Upper Professional — doctor, lawyer, owner of a large business, Prime Minister.
2. Professional — dentist, veterinary surgeon, pharmacist, psychologist, company manager of a large business, bank manager (large branch), mathematician, radiologist.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>SAMPLE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>School Type</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>7</td>
</tr>
<tr>
<td>Church</td>
<td>0</td>
</tr>
<tr>
<td>Sex Composition</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>292</td>
</tr>
<tr>
<td>Males</td>
<td>227</td>
</tr>
<tr>
<td>SES Composition</td>
<td></td>
</tr>
<tr>
<td>Working class</td>
<td>296</td>
</tr>
<tr>
<td>Middle class</td>
<td>223</td>
</tr>
<tr>
<td>Cultural Composition</td>
<td></td>
</tr>
<tr>
<td>English speaking origin</td>
<td>57%</td>
</tr>
<tr>
<td>Non-English speaking origin</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Clerical — service — computer programmer/operator, film-maker, social worker, librarian (trained), primary teacher, army, navy, airforce.
5. Skilled worker — secretary, government officer, clerk, childcare, teacher’s aide, salesman, firefighter, electrician, dental mechanic, hairdresser.
7. Unskilled worker — barman, barmaid, wharf labourer, milkman, waitress, factory worker, unskilled labourer.
8. Unemployed — drug pusher, criminal, volunteer worker, out of work.

In Australia, the questionnaire was administered in small groups (N = 20 to 30) by a small team of trained personnel who subsequently coded and check scored the data (r = .97). The Singaporean subjects did the questionnaire under the supervision of the research coordinator in their respective schools. The data were coded and scored by the coordinator herself, a sub-sample recoding producing an inter-coder correlation of r = .98.

Results
Separate analyses were undertaken to explore adolescent awareness of options and personal multiple possibilities in career choice. Three issues were canvassed:
(a) Whether adolescents in Australia or Singapore are aware of career possibilities available in complex modern societies (i.e. range of possible options from which to choose).
(b) The extent to which multiple possibilities for careers for self are considered by adolescents in both cultures (i.e. perceived possibilities for self and values attached to career choices in terms of occupational hierarchies).
(c) The extent to which both awareness of options and a consideration of multiple options for self were associated with sex and country of origin.

TABLE 2 — OCCUPATIONS: KNOWLEDGE AND SELF PREFERENCES MEANS AND STANDARD DEVIATIONS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Australian Males</th>
<th></th>
<th>Australian Females</th>
<th></th>
<th>Singaporean Males</th>
<th></th>
<th>Singaporean Females</th>
<th></th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupations Listed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>Mean: 1.46</td>
<td>S.D.: .65</td>
<td>Mean: 1.66</td>
<td>S.D.: .74</td>
<td>Mean: 1.56</td>
<td>S.D.: .71</td>
<td>Mean: 1.52</td>
<td>S.D.: .71</td>
<td>3.75**</td>
</tr>
<tr>
<td>Service Clerical</td>
<td>Mean: 2.35</td>
<td>S.D.: .74</td>
<td>Mean: 2.53</td>
<td>S.D.: .70</td>
<td>Mean: 1.90</td>
<td>S.D.: .68</td>
<td>Mean: 1.95</td>
<td>S.D.: .66</td>
<td>19.33**</td>
</tr>
<tr>
<td>Skilled</td>
<td>Mean: 2.26</td>
<td>S.D.: .75</td>
<td>Mean: 2.54</td>
<td>S.D.: .70</td>
<td>Mean: 2.28</td>
<td>S.D.: .81</td>
<td>Mean: 2.22</td>
<td>S.D.: .94</td>
<td>7.00**</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>Mean: 2.37</td>
<td>S.D.: .74</td>
<td>Mean: 2.05</td>
<td>S.D.: .79</td>
<td>Mean: 1.98</td>
<td>S.D.: .82</td>
<td>Mean: 1.74</td>
<td>S.D.: .67</td>
<td>12.47**</td>
</tr>
<tr>
<td>Unskilled</td>
<td>Mean: 1.65</td>
<td>S.D.: .71</td>
<td>Mean: 1.55</td>
<td>S.D.: .67</td>
<td>Mean: 1.63</td>
<td>S.D.: .73</td>
<td>Mean: 1.60</td>
<td>S.D.: .66</td>
<td>.68</td>
</tr>
<tr>
<td>Unemployed</td>
<td>Mean: 1.08</td>
<td>S.D.: .32</td>
<td>Mean: 1.01</td>
<td>S.D.: .12</td>
<td>Mean: 1.23</td>
<td>S.D.: .43</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>4.91**</td>
</tr>
<tr>
<td>Self Preferences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>Mean: 1.41</td>
<td>S.D.: .73</td>
<td>Mean: 1.21</td>
<td>S.D.: .57</td>
<td>Mean: 1.98</td>
<td>S.D.: .97</td>
<td>Mean: 1.77</td>
<td>S.D.: .92</td>
<td>17.03**</td>
</tr>
<tr>
<td>Technical-Service</td>
<td>Mean: 1.03</td>
<td>S.D.: .33</td>
<td>Mean: 1.07</td>
<td>S.D.: .27</td>
<td>Mean: 1.19</td>
<td>S.D.: .44</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>3.10*</td>
</tr>
<tr>
<td>Service Clerical</td>
<td>Mean: 1.53</td>
<td>S.D.: .74</td>
<td>Mean: 1.54</td>
<td>S.D.: .73</td>
<td>Mean: 2.07</td>
<td>S.D.: .98</td>
<td>Mean: 1.62</td>
<td>S.D.: .94</td>
<td>6.54**</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>Mean: 1.36</td>
<td>S.D.: .61</td>
<td>Mean: 1.08</td>
<td>S.D.: .31</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>12.89**</td>
</tr>
<tr>
<td>Unskilled</td>
<td>Mean: 1.14</td>
<td>S.D.: .43</td>
<td>Mean: 1.02</td>
<td>S.D.: .15</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>Mean: 1.00</td>
<td>S.D.: .00</td>
<td>1.43</td>
</tr>
<tr>
<td>Unemployed</td>
<td>Mean: 1.20</td>
<td>S.D.: .41</td>
<td>Mean: 1.28</td>
<td>S.D.: .57</td>
<td>Mean: 1.30</td>
<td>S.D.: .47</td>
<td>Mean: 1.36</td>
<td>S.D.: .49</td>
<td>5.87</td>
</tr>
</tbody>
</table>

** .01 ** Mark in significant ones

A. Occupations: Career Possibilities
The mean scores in both cultures for self and preferences were able to list more than did those from Singapore. Female subjects listed more semi-skilled occupations than did male groups. The exception of unemployment differences was not at the significance level. Singaporean female respondents listed more clerical occupational parts. There were more adolescents from Singapore who listed more of a range of occupational choices.

B. Possibilities for career choice.
The occupations listed significantly with the total score (Moment Correlation r = .000). The adolescents listed more semi-skilled occupations than did those from Singapore. Though you are professional and semi-skilled occupations, the difference was not significant at the significance level. Though you are professional and semi-skilled occupations, the difference was not significant at the significance level. Though you are professional and semi-skilled occupations, the difference was not significant at the significance level.
A. Occupational Knowledge and Awareness of Career Possibilities

The mean scores in Table 2 indicate that adolescents in both cultures are aware of multiple possibilities for career choice. Singaporean adolescents, however, were able to list more occupations than did Australians. Female students listed more possible career choices than did males. The difference between groups was significant at the .002 level. With the exception of unskilled occupations, significant differences were noted between groups in all job classification levels. Service-clerical occupations, skilled occupations and semi-skilled occupations were most frequently listed by adolescents from both countries. It was noticeable that the Australians were able to list more upper professional, service-clerical and semi-skilled occupations. Singaporean adolescents listed more technical-service occupations. The female groups of both countries listed more service-clerical occupations than did their male counterparts. There were, however, no differences between adolescents from an Australian background and those from Singapore on the dimension awareness of a range of occupations from which to make personal choice.

B. Possibilities for Self

The occupations selected for self correlated significantly with the total list as indicated by the Product Moment Correlations in Table 3 (r = .4841; p > .000). The adolescents from Singapore indicated a higher number of occupations as possibilities for self than did those from Australia (Table 2). The difference between groups was significant at the .002 level. Though young Australians listed more upper-professional and professional occupations (p < .0000; p < .0000), significant differences were also noted between groups on the following occupations related to self: technical-service occupations, service-clerical occupations, skilled occupations and semi-skilled occupations. The female groups in both countries selected more skilled occupations and unemployment options than the male groups. It was interesting to note that service-clerical occupations were favoured by the young Singaporeans as self-selected occupations, especially the males. The most popular occupations selected by the adolescents in both countries were upper-professional occupations, professional occupations, service-clerical occupations and skilled occupations. This indicated that occupations selected for self were clustered in the upper and middle socio-economic status ranges and reflected the striving and life-style attainment values associated with modernity.

C. Sex and Country of Origin: Discriminant Function Analysis

To consider the extent to which sex and country of origin are associated with the perception of multiple options in career choice, a discriminant analysis was undertaken on the total occupational variables and self preferences. The eigenvalues and canonical correlations of the two significant discriminant functions are shown in Table 4. The pooled within groups correlations between canonical discriminant functions and discriminating variables are listed in Table 5.

It was found that five variables correlated above the .30 cut off level required for interpreting Discriminant Function 1. Two of these variables were from the total number of occupations listed in the categories of service-clerical (−.43) and semi-skilled (−.46). The other three significant variables were categories of occupations selected as self preferences:

<table>
<thead>
<tr>
<th>TABLE 3 — TOTAL OCCUPATIONS LISTED BY SELF-SELECTED OCCUPATION POSSIBILITIES — PEARSON CORRELATION COEFFICIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Categories</td>
</tr>
<tr>
<td>Upper Professional</td>
</tr>
<tr>
<td>Professional</td>
</tr>
<tr>
<td>Technical Service</td>
</tr>
<tr>
<td>Service Clerical</td>
</tr>
<tr>
<td>Skilled</td>
</tr>
<tr>
<td>Semi-skilled</td>
</tr>
<tr>
<td>Unskilled</td>
</tr>
<tr>
<td>Unemployed</td>
</tr>
</tbody>
</table>

** p < .001
upper professional (.36), professional (.42) and unemployed (.47).

Six variables correlated above the .30 cut off level required for interpreting Discriminant Function 2. They were total listed occupations in the categories: technical service (- .37), service-clerical (- .36), skilled (- .41) and unemployed (.34). The self selected preference in the following categories were also significant: semi-skilled (.55) and unemployed (.34).

The coordinates of the group centroids on Discriminant Function 1 ordered groups on the basis of country of origin (Fig. 1). The mean scores (Table 1) indicated that Australians listed more service-clerical and semi-skilled occupations as a range of options. More Singaporeans chose upper-professional and professional occupations as self-preferences (personal possibilities) and rated unemployment more frequently.

The coordinates of the group centroids on Discriminant Function 2 ordered the groups on the basis of sex (Fig. 1). The female groups listed more service-clerical occupations. Australian females and Singaporean males saw more technical service options. Though males listed unemployment more frequently, it was the females who chose unemployment more frequently as self-preferences. The Australian males favoured semi-skilled occupations as self possibilities.

### TABLE 4 — COUNTRY BY SEX BY OCCUPATION VARIABLES. EIGENVALUES AND CANONICAL CORRELATIONS FOR SIGNIFICANT FUNCTIONS

<table>
<thead>
<tr>
<th>Function</th>
<th>Eigenvalues</th>
<th>Relative Percentage</th>
<th>Canonical Correlation</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.37</td>
<td>53.77</td>
<td>.52</td>
<td>.0000</td>
</tr>
<tr>
<td>2</td>
<td>.27</td>
<td>39.29</td>
<td>.46</td>
<td>.0000</td>
</tr>
</tbody>
</table>

### TABLE 5 — DISCRIMINANT FUNCTION ANALYSIS – COUNTRY BY SEX BY OCCUPATION VARIABLES. POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Function 1</th>
<th>Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Occupations Listed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Professional</td>
<td>-.16</td>
<td>-.23</td>
</tr>
<tr>
<td>Professional</td>
<td>.11</td>
<td>-.24</td>
</tr>
<tr>
<td>Technical — Service</td>
<td>.24</td>
<td>-.37**</td>
</tr>
<tr>
<td>Service — Clerical</td>
<td>-.43**</td>
<td>-.36**</td>
</tr>
<tr>
<td>Skilled</td>
<td>-.24</td>
<td>-.41**</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>-.46**</td>
<td>.15</td>
</tr>
<tr>
<td>Unskilled</td>
<td>.10</td>
<td>.19</td>
</tr>
<tr>
<td>Unemployed</td>
<td>.26</td>
<td>.34**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self Preferences Listed</th>
<th>Function 1</th>
<th>Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Professional</td>
<td>.36**</td>
<td>.25</td>
</tr>
<tr>
<td>Professional</td>
<td>.42**</td>
<td>.29</td>
</tr>
<tr>
<td>Technical — Service</td>
<td>.27</td>
<td>-.04</td>
</tr>
<tr>
<td>Service — Clerical</td>
<td>.11</td>
<td>-.16</td>
</tr>
<tr>
<td>Skilled</td>
<td>-.00</td>
<td>-.26</td>
</tr>
<tr>
<td>Semi-Skilled</td>
<td>-.12</td>
<td>.55**</td>
</tr>
<tr>
<td>Unskilled</td>
<td>-.18</td>
<td>.28</td>
</tr>
<tr>
<td>Unemployed</td>
<td>.47**</td>
<td>.34**</td>
</tr>
</tbody>
</table>

Discussion
Adolescents in both range of career personal choices. Singapore personal possibilities, perhaps ethos of national culture of Singaporean, however, were not students listed more perhaps indicating the in Singapore’s urban- (Tham Seong Chee, greater awareness of
FIGURE 1: COUNTRY BY SEX BY OCCUPATION-VARIABLES PLOTTING OF GROUP CENTROIDS

![Diagram of group centroids]

Key:
- Group 1 - Australian Boys
- Group 2 - Australian Girls
- Group 3 - Singaporean Boys
- Group 4 - Singaporean Girls

Discussion

Adolescents in both countries were aware of a wide range of career options from which to make personal choices. Singaporean adolescents listed more possibilities, perhaps reflecting the more pervasive ethos of national economic striving which is a feature of Singaporean modernity. The differences, however, were not significant. Singaporean adolescents listed more technical-service occupations, perhaps indicating the pervasiveness of technology in Singapore's urban-industrial modernising culture (Tham Seong Chee, 1976). Australians showed a greater awareness of upper-professional, service-clerical and semi-skilled occupations, reflecting a range of career possibilities on a socio-economic job hierarchy (Connell, et al, 1975; Poole, 1983).

Interestingly, females in both cultures displayed a wider occupational awareness, perhaps reflecting their increasing interest in the range of options available as their rate of participation in the labor force increases. However, female adolescents in both countries were aware of more service-clerical occupations than their male counterparts, suggesting that even with increasing modernisation and technological complexity, there remains a sex-differentiation in labour market awareness with females continuing
to be associated with the service-clerical sector. Females also saw unemployment as more likely to be their lot, a reality which is evident in unemployment statistics showing these to be significantly higher for both sexes.

In terms of perceived possibilities for self, adolescents in Singapore considered more options. Whether this is the result of a greater need to keep one's options open in a rapidly changing and expanding economy, or of a combination of factors associated with a pro-achievement and pro-individualistic modernity ethos (Tham Seong Chee, 1976) cannot be assessed in the current study. However, there is an indication of aspiration to a pro-achievement, good lifestyle by Singaporean male youth who see upper professional and professional occupational possibilities for themselves. Adolescents in both countries had high aspirations with an emphasis on professional and skilled occupations. Interestingly, many Singaporean males saw themselves in service-clerical occupations suggesting a different level of status and prestige is likely to be associated with that occupational sector in Singapore (as in the case in India, Burns, 1980). Country of origin and sex differences in career choice awareness and personal possibilities for self were clearly revealed in the combined profile analysis (discriminant analysis). The first discriminant function ordered the groups by country of origin. The sharpest difference was the greater tendency by Singaporean adolescents to perceive upper-professional and professional occupations for themselves compared with Australians listing service-clerical and semi-skilled occupations. It could be argued that Singaporean youth are under strong achievement striving pressures at both the national and individual level and see occupational status as a means of contributing to national development and personal life-style, an explanation not inconsistent with view presented by Tham Seong Chee (1976) concerning the meritocratic-capitalistic, pro-achievement, pro-individualist orientation of Singaporean society and its influence on youth consciousness and value propensities.

The second discriminant function highlighted aspects of career awareness and perceived personal options in relation to sex. Sex-differentiated labour market expectations were evident with females anticipating careers in the service-clerical sector and in unemployment. While the service-clerical possibilities are consistent with the literature (e.g. Forward, 1982; Poole, 1983; Thung Syn Neo, 1976), the unemployment self-preference is more problematic. Does it reflect a realistic appraisal of unemployment figures (i.e., higher for females)? Does it reflect a preference for the traditional female role of non-working wife and mother? Does it reveal an aversion to many of the employment possibilities available to women, e.g., poorly paid, unskilled factory jobs? Certainly in the present study, females were less likely to see themselves in skilled and professional jobs.

Overall, then, in terms of the general interests of this study it can be suggested that adolescents living in two very different countries are aware of a wide range of personal possibilities for career choice. In Tyler's (1978, 1983) terms, there is choice presented through awareness of a range of opportunities. The question of environmental opportunity for testing out several possibilities appears problematic in both countries. Clearly girls do not perceive the same sets of environmental opportunities, or so one would infer from their more traditional sex-stereotyped sets of perceived career possibilities for themselves. Whether this is a question of personal factors (cognitive structures in Tyler's terms) or of the opportunity structure (in sociological terms) or of both interacting (in interactionist terms) is not evident. What is obvious, however, is that females in both cultures are aware of a wide range of careers but consider only a limited sector of these for themselves, a sector which is not likely to gain them access to upper status lifestyle, or to absorb them in technological and professional careers.

As to concern with modernity, the data suggest that adolescents in both countries are concerned with planning their careers for the future, with upward social mobility a value more associated with the males in the study and with Singaporeans. There is evidence of 'individuation' to some degree, inferred from the decision-making processes attached to perceived possibilities for self. There is 'liberation' to the extent that adolescents in both countries perceive a 'multiplication of options' but here is less liberation attached to female perceived possibilities of self.

Concerning the career awareness focus, there is evidence from the present study that adolescents have an awareness of a wide range of possible careers and attach differential values to these careers. Their own preferences seem to reflect their level of striving towards upward social mobility and their perceptions of the opportunity structure available to them. That these factors operate within such different contexts as Australia and Singapore suggests the pervasiveness of values attached to career choice concerning lifestyle and perceived future possibilities for self.

References

References


1984 VOL 6 NO 1 - 29
Cross cultural studies of cognitive development that use the Piagetian paradigm are not new. In the past ten to fifteen years, both in Africa and Asia there have been extensive studies carried out on children from a variety of cultures. From the purely developmental viewpoint, research that is undertaken on different cultural groups has been a vital factor in substantiating some of Piaget’s theoretical claims. The most important of these being that the development of children’s intellectual capacities undergo a universal sequence of development and that cultural factors are determinants in the univer-salistic process.

The main bulk of studies have concentrated on the concrete level of operations. These studies provide support for the invariance of sequences in Piaget’s stages, with cultural differences occurring in the speed of transition from one stage to another. On the other hand, Cole and Scribner (1974), Kamara and Easley (1977) question the extent to which Piagetian notions such as conserva­tion are really free of cultural bias. In relation to this, future investigators have been alerted to several issues surrounding the methodology that is used in applying Piaget-type tasks cross-culturally. Among these issues are the represen­tativeness of the samples, the comparability of the research instruments, validity of the experimental tasks, and ambiguity in the communication between experimenter and subject and finally test bias.

In embarking on a study of cognitive development in the context of Singapore several points need to be borne in mind. Firstly, very little research has been carried out using Piagetian tasks and so “first studies” are bound to be seen as having an element of “the pioneer” about them. Secondly, the pragmatic nature of Singaporean society and especially its educational system, demands that any educational research must be seen to have relevance to the development of human potential. Research into cognition and its development is no exception. Thirdly, Singapore represents a microcosm of various cultures living together. Three rich immigrant traditions are represented in the country, i.e. Chinese, Indian and Malay, together with strong Western influence originating mainly from the period of British rule before independence in 1963. This provides challenges that are both exciting and daunting for the researcher of cross-cultural cognitive development. Intimately related to each cultural tradition, are rich languages and dialects in company with four world religions namely Buddhism, Islam, Hindu­ism and Christianity.

To understand the nature of the present study into cognitive development in Singapore, it is essential to be aware of the above. Further, the study is carried out by educational researchers for the main purpose of providing base-line data on Singaporean school children’s cognitive development. The findings will hopefully enable teachers and curriculum developers to examine the appropriate­ness of the existing curriculum procedures and materials in terms of children’s intellectual readi­ness.

The main concern of the paper is to discuss some of the methodological problems encountered in the course of the study, and the methods that were adopted to deal with them. The methodological problems will be discussed under the following clusters: communication problems (both linguistic and non-linguistic), the experimental materials and acculturation.

The authors would like to acknowledge the valuable comments made on linguistic communication by Mrs. Florence Lee, Head, Early Childhood Department, Institute of Education, Singapore.
The Nature and Scope of the Study

As has been mentioned earlier, a major aim of the research is to establish base-line data on the intellectual development of Singaporean primary school children. The Piagetian paradigm was taken as the main framework as it was most suited for the purposes of the study. It also provides well-tried measures of intellectual performance not only outside the Asian region but within it, Oppen (1977, 1979), Thomas (1981). The study is cross-sectional with a sample age spectrum from 72 to 168 months. The ethnic composition of the sample reflects approximately the national proportions i.e. 76% Chinese, 14% Malay, 7% Indian and the remainder Eurasian. The numbers of males and females are about equal. In all, over 1,100 children have been tested. The number of children in the preliminary studies are 200 and 120 respectively, while that for the actual phase is 780. Biodata collection included information on variables such as age, parental SES, numbers of siblings, ethnicity, languages and/or dialects spoken at home and school, children's interest and hobbies, and details of preschool education. The child's school performance was also recorded.

Nine developmental tasks measuring children's appreciation of causality, conservational notions (i.e. substance, weight, area, volume) seriation, classification and horizontality were used. The choice of these tasks was based on the fact that they underpin many of the concepts that are taught in the Singaporean Primary school. Therefore, the final outcome of the research will hopefully provide information about the children's intellectual readiness for the curriculum that is already in existence and any future changes that may be made to it. Children were interviewed on a one-to-one basis with second observers for many of the interviews, to check reliability. All the interviewing was carried out in English, but where the demand of effective communication required the use of Mandarin (and/or dialects), Malay, Tamil; selected researchers were called upon to meet this demand.

The researchers were staff members of the Institute of Education of Singapore and a group of students in their final training year. All received training in interviewing and data collection. Each researcher was required where possible to administer the tasks in English, and to make notes on the questions that were asked, and the responses that were obtained by the children. The researchers were also requested to comment on the suitability of the task materials and the general procedures adopted during the interview.

After the testing period which lasted about 6 weeks "a committee approach", Brislin (1980), was adopted to discuss results. Several "research committees" were appointed on the basis of the language facility of each committee i.e. whether the researchers could speak Malay, Mandarin, etc. Each committee pooled their findings and experiences, and from this information, changes were made to the nature of tasks, the materials and the language in which the tasks would be administered.

In the second preliminary study and the actual phase of testing, a set of instruments were developed in Mandarin, Malay and Tamil together with a standard English form. These instruments incorporated changes recommended by the committees in terms of the sequence of questions, test materials and non-linguistic aids to communication e.g. hand gestures, eye contact.

Methodological Problems Arising in the Study

The multicultural nature of Singaporean society poses challenging methodological problems for the cross-cultural psychologist. Triandis (1980) has commented that cross-cultural psychology is defined by its methodology rather than any special theories it might have. Furthermore, its methodology has a set of unique methods. These have been developed in response to past practices where one method developed outside a culture (the etic situation) was applied with little if any regard to its validity inside a totally different culture (the emic situation). Therefore, for any cognitive developmental research to be carried out in Singapore, it is essential to ensure a methodology that provides for a balance between etic and emic dimensions. This is to avoid the occurrence of so-called pseudo-etic measures, Triandis, Malpass and Davidson (1972a).

The present research reported in this paper must be seen in this context, where etic dimensions (the Piagetian tasks) have been used within emic contexts (the cultural background of Singaporean Primary school children) to give validity to the research. From the preliminary studies it was found that although a measure of interrelatedness exists, three clusters of methodological problems arose, which indicated to the authors the need to balance the etic/emic relationship. These are as follows:

1. Communication Problems
2. Experimental Materials
3. Acculturation Problems

1984 VOL 6 NO 1 - 31
In research which involves the use of interviews as the sole method of assessing a subject's response as in this case, every effort should be made to eliminate, where possible, any ambiguity in the communication process. Bowerman (1981) has written at length on this subject and distinguishes between linguistic and sociolinguistic bias. However, to meet the problems of reducing ambiguity and bias the "research committees" mentioned earlier in this paper, were given the task of examining the language of the tasks.

A variety of translation procedures were tried out which included back translation, pretest procedure and the committee approach. A decentering approach also accompanied each of the translation procedures so that the names of materials in one language i.e. English had comparability in the target languages Mandarin, etc. It was found that the committee approach was the favoured method of preparing the tasks for their administration in the preferred languages.

The pooling process during committee sessions threw valuable light on the problem of ambiguity, and provided a rich exchange of views between researchers having detailed knowledge of the colloquial patterns of the target groups.

The outcome of the committee approach provided the following research strategy:

1. Use of Standard English Version by all Researchers at first and to continue in this language medium throughout the interview.
   or
2. Use of Standard English and Singlish.
   or
3. Use of Mandarin or Dialects and Standard English or Malay or Tamil
   or
4. Use of Mandarin or Dialects or Malay or Tamil and Singlish
   or
5. Use of Mandarin or Dialects or Malay or Tamil without English

THE MICRO LEVEL PROBLEMS. It became clear that the interviews with children from different linguistic backgrounds presented problems of four types.
problems related to listening and saying, or 
audio-phonic problems;
(b) problems related to the use of language structure, or syntactic problems;
(c) problems relating to meaning, or semantic problems;
(d) problems relating to culture specific vocabulary

(a) Audio-phonic problems These problems arose from two main sources, the listening skills of both interviewer and interviewee, and the pronunciation of both. All Chinese-speaking researchers were aware of the problems of children who spoke Chinese dialects different from their own.

Where the interview was conducted in English by a local researcher, listening and pronunciation problems arise from dialectal interferences in the speech pattern of researcher and subject alike. Where interviewers spoke only English and were not native Singaporeans, particular care had to be paid to both the listening of the child’s responses as well as their pronunciation of l’s, r’s and v’s, etc.

(b) Syntactic problems In the preliminary studies, it was observed that children and difficulty in understanding the tasks when communicated to them through a spoken standard English version. Standard English is adulterated by speakers of the Chinese dialects e.g. Hokkien, Cantonese, etc as well as Malay and Tamil hybrids. The Singapore usage of English often known as “Singlish” deviates appreciably from the standard form and is spoken widely throughout the country. All this adds up to the fact that questions addressed to children may have to be modified in the interview situation, to meet these intra-cultural language patterns.

Moreover, the experimenter has to be ready to comprehend the answers that come his way, when children respond to his questions.

Some examples of the syntactic peculiarities are as follows:

Speakers of the Chinese dialects often delete verbs in the construction of sentences “He going is often used instead of “He is going”.

In the tasks on substance and weight conservation, the child is asked in the standard English version “Is there as much here as in there?” The Singlish or dialectical alternatives which children use to make themselves understood is “Same big” or “Same heavy” instead of “as much as”.

In the class inclusion task, the plural for fruit in English is fruit. However, in Singapore most children do not understand the collective fruit but all comprehend “fruits”. To press on with etic standard English and disregard the emic nature of Singapore English usage, would lead to invalid or no results for the tasks. Hence, some of these syntactic idiosyncracies of English usage in the Singapore context was an important consideration in the construction of instruments for the final phase of the study.

(c) Semantic Problems Problems of meaning are always likely to be encountered in cross-cultural studies where the instrumentation needs translation into several languages, or where local usage of a language like English or French is involved.

Several instances of semantic problems arose during the preliminary period of the research. Words like amount, shape, size which occur in conservation tasks, need to be given the appropriate linguistic equivalents. This was not an easy task, for all three local languages presented difficulties for precise meaning to these words. An interesting case arose in the class inclusion task when the subcategory of rose or chrysanthemum is only understood when it is combined with the large category flower. In asking children, Is this a rose or a chrysanthemum? it is translated as “is this a rose flower”?

Therefore, the materials for the task had to be changed, as a reason for giving the task is to probe the child’s appreciation of macro categories as opposed to sub-categories. This example is further discussed in the section on problems arising from the selection of experimental materials.

(d) Linguo-cultural Problems Perhaps the most recurring instance of this type of micro level problem was the use of the word “sausage”. This is used in the weight conservation tasks and is a term not used by Malay children and by most Tamil-Indians. In order to preserve the conceptual equivalence of the task, which is to portray a change of shape from a round spherical state to an elongated one; pisang was used for the Malay children and, sausage, for the English-speaking Tamil. The Chinese children had no trouble with this particular term, for all know and enjoy the Chinese sausage or “lapcheong”.

(ii) Problems related to Non-Linguistic Communication

Non-linguistic communication is referred to in this paper as modes other than language which convey or assist in conveying meaning e.g. gesture, pause, facial expression, psychomotor activity i.e. drawing. Only pause and gesture will be discussed
here as they seem to have been the most commonly occurring non-linguistic modes of communication in this research.

Use of Pause Pauses are non-verbal interpolations in the production of language. In the case of children whose preferred language is not English, and where the mode of instruction is English, it was important to develop the use of pause to promote effective communication between Experimenters and Respondent.

In tasks which required activity on the part of the respondent, as in substance, weight and volume conservation, the frequency and length of pauses was often shorter, than when questions probing causality were applied. The task for causality is entirely verbal, and the frequency and duration of pauses was greater in administering this task. For the final phase of testing, researchers were alerted to the need of not only pausal frequency and duration but to appropriate pause intervention.

Gesture It was found that the use of hand and finger gesture had a clarifying effect on conveying meaning in “action-oriented” tasks. For instance, in substance conservation pointing to the large container of coloured water, followed by further pointing to the two glasses into which the respondent was required to pour in equal amounts of liquid, became an accepted part of the procedure.

Again, in requesting the respondent to check equivalence of liquid in the two glasses, pointing was again used. The pouring of water by a subject from one of the smaller glasses into the taller glass gave rise to a term known as “twiddle” (a circular movement of the finger) which indicated that it was the water from one glass that had to be poured into the taller one.

The use of gesture was also found useful in the weight conservation, where the S was asked to “roll out” the plasticine into a sausage or pisang, etc. In several instances the word “roll” when spoken alone produced a rolling of the ball cross the table in the fashion of a marble. A gesture with the palm of the hand held above the plasticine ball in a back and forth movement, coupled with the use of the word roll, clarified this procedure. This gesture also became an accepted procedure for researchers to follow, if and when the need arose, so that ambiguity could be eliminated.

Therefore, combining gesture with language, whether the latter be in English or a preferred local language, appears to provide an improved interaction between subject and experimenter. This seems not only to clarify the semantics of the task but add to the “warmth” of the interview situation. Limitation on time and space allows only some of the more important gestures to be discussed here. However, it is clear that gesture coupled with language can clarify instructions in administering developmental tasks. A more detailed study within the Singaporean cultural context is suggested here. Nevertheless, even these few examples show that etic measures as typified in these Piagetian tasks were made more emically valid, where such gestural adjuncts became an established part of the interview procedure.

(2) EXPERIMENTAL MATERIALS
The criterion adopted in the process of selection of experimental materials is the subject’s familiarity with the stimulus materials. If children are unfamiliar with the materials their optimal performance on these tasks is reduced, Rogoff (1980). Only some of the more important changes that had to be made to meet the needs of the Singaporean primary school child will be discussed.

(i) Class Inclusion Task
Piaget used flowers and beads in the class inclusion task. However, Singapore children showed they were not well acquainted with the names of flowers as the majority of them live in flats. Fruits such as oranges and bananas were used instead, as they were more familiar to Singapore children.

(ii) Causal Thinking
Likewise the topic of death is selected to investigate the children’s concept of causality. This is not to suggest that the mortality rate in Singapore is so high that “death” becomes a familiar issue to children. Rather, this is more sociological than cultural. Funeral wakes in Singapore are often held in the void decks of government-subsidized flats. Since over 80% of Singapore’s population live in these flats, deaths then become a familiar event in the daily lives of our children. Suicide was also quoted as an experiential source by children.

(3) ACCULTURATION PROBLEMS
The process of acculturation as presented in this paper, is viewed as a process of continuous transmission of traits or elements between diverse cultural groups with the possible result that a blend of patterns is likely to emerge. The rich cultural microcosm of

Singapore is one of the most interesting blends of actual and potential cultural patterns. Carried out by the researchers to this process are:
(a) children’s playgrounds are different, and what the children have played, and what has influenced their thinking;
(b) the influence of the second language on the child’s ability to communicate; and
(c) the influence of the home and school where the child is educated to receive attention to bilingual education and the role of language variables to the child’s cognitive development.

The linguistic culture of Singapore
Singapore, like many other countries, has tried to protect and encourage children to participate in their cultures. Emphasis on gesture and language development more effectively leaves an important object for the children in the past has not been well understood. This process of a rapidly developing patterns and cultural changes at home and school. This is a particular example for the following:
(a) from observing the children’s daily activities, there was some pattern of which this type of technology was used in schools, and hence;
(b) secondly, the interviewer had to throw some light on the area of research too.

- A recurring feature of the protocols on most tasks, was the children’s question about language or dialects, that is, these are often related.
Singapore is one that provides an extremely interesting blend of acculturative processes both actual and potential. In the course of the research carried out by the authors, several aspects related to this process became obvious. These included (a) children's play patterns i.e. what games they played, and what materials they used and how this influenced their performance on cognitive tasks; (b) the influence of pre-school activities and the child's ability to respond to the cognitive tasks presented to them; (c) linguistic cultural ethos of home and school. In this paper only the latter will receive attention in view of the importance of the language variable in researching children's cognitive development in Singapore.

The linguistic cultural ethos of home and school

Singapore, like many other countries of the world, have tried to promote opportunities in school for children to participate more in learning activities. Emphasis on getting children to ask questions and develop more enquiring attitudes are becoming an important objective in teacher training programmes. It is in effect an acculturative process which in the past has not been a feature of the Asian context. This process of acculturation, relates language patterns and cultural practices at two loci; the home and the school. The reason for selecting this particular examplar for discussion is two-fold:

(a) from observations made during the early studies, there were indications of the extent to which this type of acculturation is taking place in schools, and the effect the home may be having;

(b) secondly, that the preliminary observations threw some light on the use of the interview as a research tool in cross-cultural research.

A recurring feature in many of the children's protocols on most tasks, showed that even where the children were questioned in their preferred language or dialects, their responses tended to be short. These are often reduced to one-word or two-word utterances when in fact fuller answers were expected. All of the children who were tested received instruction in English, which is not the preferred language of many children or their teachers. The habit of short, abrupt statements and the so-called "quiz encounter" that many teachers and pupils are used to in primary schools may be a factor in explaining sparse responses. The habit of encouraging fuller explanation, questioning pupils and waiting for the answers has yet to be firmly established as part of the primary school ethos. If classroom language patterns as described above are a factor in this process (and clearly more research is required here) then this particular acculturative process is in its early phases.

The effects which these observations have on the assessment of the interview as a research tool, must also be accounted for in the way the interview is conducted; for instance, the number of probes that a research employs, developing warmth, etc... In the casual thinking task, researchers were encouraged to use several probes to find out the subject's knowledge and understanding of the particular cause. The probes were also applied to ensure that a child knows what is expected of him in the interview and to get him to communicate more easily.

From observations made by the research team on what influence the home environment has on this acculturation process, it is clear that the language patterns used and the cultural ethos of many children's homes is even less supportive than that encountered in the school. However, social class is possibly a factor, for professional and para-professional home backgrounds are likely to be more conducive in enhancing this type of acculturation.

In conclusion, it must be reiterated that while cognitive research in Singapore poses challenging methodological problems to the researcher, he should not be daunted by the ubiquity of the situation. Successfully tackling these problems is crucial not only to improve cross-cultural methods in general, but also to seek the universality of established findings.
References


Wly Teach

Sok Kay Cheng

The 1960s saw an attempt to education in Singapore. This article discusses the beginning with Education and the Research Report. Since its establishment, the School of Education have performed by the Research Report. The above fact is dedicated to the education in Singapore.

At a more basic level, they say: “Teachers are those who come to teach. They come to teach, they come to educate, they come to share any activity that they might want to work on. They come to undertake the work and to be involved in it. They come to give attention, to pay attention, to be interested and staying in the situation.”

Interest in the background and the date back to the 1934. (Rogoff, E., 1980).
The 1960s saw a rapid expansion of teacher education in Singapore. This was followed by an attempt to ensure quality teacher education, beginning with the establishment of the Institute of Education in 1973. The Institute was established to take over the responsibilities of teacher preparation and educational research, functions which were performed by the Teachers' Training College, the School of Education of the University of Singapore and the Research Unit of the Ministry of Education. Since its establishment, the Institute has provided pre-service training for some 6000 teachers, both non-graduates and graduates. In addition to these, some fifteen thousand teachers have gone through in-service courses of one kind or another at the Institute over the past decade (Lun and Chan, 1983). The above facts show the concern with and effort dedicated to the improvement of teacher quality in Singapore.

At a more basic level, one question can be asked: Who have come to teach and for what?

"Teachers are not cut from the same cloth. They come to the profession from varied backgrounds and have myriad motives. If they share any single characteristic, it is that they want to work with the young and through that work make a contribution to society .... A number of secondary motives are also at work in teaching. Although these receive less attention, they have a significant effect on who becomes a teacher and whether or not he or she stays in the classroom."

(Webb, 1981: 194, emphasis added)

Interest in the motives with which teachers have come to teach has a very long history. Early studies date back to the 1930's (e.g., Austin, 1931; Valentine, 1934). In the post-War years, there was a revived interest in the study of motives for teaching (e.g., Tudhope, 1944; Grant, 1950). And, more recently, this interest has been renewed, largely in the United States (Lortie, 1975; National Educational Association, 1976; Lewin & Ass., Inc., 1978; Wood, 1978; and Jantzen, 1981). Findings of these studies confirm by and large Webb's conclusion cited above.

In Singapore, the one and only large scale study of this nature was carried out in the mid-60's (Lau et al, 1968). One and a half decades have passed since that study and many changes have taken place at both the national level and within the education system. The major educational changes are the introduction of the New Education System beginning in 1980 and the replacement of part-time teacher education programmes with full-time ones in 1981.

The results of the survey reported below may provide a bench mark for an assessment of the teacher education scene in Singapore against the background of the nation's social and economic changes. The information may also provide an insight into the quality of the teaching force that may be expected in the future should the trends indicated below continue.

Data Collection

THE QUESTIONNAIRE. As this study was planned as a partial replication of the study by Lau et al (1968), the questionnaire of the earlier study was used with minor changes. The first part of the questionnaire asks for information pertaining to the students' personal and family backgrounds, their satisfaction with teaching practice experience, the likelihood of their staying in the education service and the probable sources of satisfaction in future teaching. Not all the findings will be reported here, as the focus of this article is the students' motives for
teaching. Interested readers may wish to refer to Soh (1982a and 1982b).

The second part of the questionnaire is a list of thirty motives or reasons which the students might have had when choosing teaching as a career. In the earlier study (Lau et al., 1968) items pertaining to motives were not grouped explicitly. In this survey the items were grouped according to their content under six broad categories, each with five items, thus:

**ALTRUISTIC MOTIVES**
Service to society, Like children, A noble profession, Help develop the younger generation, and Help solve teacher shortage.

**INTERPERSONAL INFLUENCES**
Influenced by relatives, Influenced by teachers, Influenced by friends, Parental wish, and Admiration for teacher.

**SELF-ACTUALIZATION MOTIVES**
To realize potential, Like to teach, Suits temperament, To further education, and Fulfilling ambition.

**INTRINSIC NATURE OF TEACHING**
An interesting job, A challenging job, Prefer to work with children, Learn more about children, and Variety of activities.

**FINANCIAL AND CIRCUMSTANTIAL REASONS**
Had no alternatives, Drifted into teaching, Stop-gap, Good salary, and Financial difficulty.

**FRINGE BENEFITS**
Security, Convenience after marriage, Spare time, Long vacation, and Short working hours.

The students involved in this survey were requested to indicate their motives for teaching. A limit was set at five items and space was provided for any other motives or reasons the students might have had which were not found among the items. However, very few additional items were suggested by the respondents and these tended to deal with the motives or reasons already listed though differently worded. These were therefore not included in the analysis.

**THE RESPONDENTS.** The respondents whose usable returns were included in the analysis were 491 first-year full-time Diploma in Education and Certificate in Education students undergoing various training programmes. Thus, the response rate was 87% for the population \( N = 562 \) of first-year students at the Institute in 1981. At the time of data collection, these students had undertaken ten weeks of teaching practice in the schools and the Diploma in Education students were completing their one-year programme.*

In the analysis, male and female Diploma students in the stream using English as the medium of instruction were treated separately, as gender was considered a significant factor. Of Diploma students in the Chinese language stream, six male students were excluded from the analysis as they formed too small a group. Table 1 shows the distribution of the students in the various programmes and their respective response rates.

**TABLE 1 — SAMPLES AND RESPONSE RATES**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Sex</th>
<th>Population</th>
<th>Sample</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma (English)</td>
<td>Female</td>
<td>192</td>
<td>173</td>
<td>90</td>
</tr>
<tr>
<td>Diploma (Chinese)</td>
<td>Female</td>
<td>54</td>
<td>45</td>
<td>83</td>
</tr>
<tr>
<td>Certificate (PPLP)*</td>
<td>Female</td>
<td>190</td>
<td>167</td>
<td>88</td>
</tr>
<tr>
<td>Certificate (Tamil)</td>
<td>Female</td>
<td>37</td>
<td>23</td>
<td>62</td>
</tr>
<tr>
<td>Diploma (English)</td>
<td>Male</td>
<td>43</td>
<td>37</td>
<td>86</td>
</tr>
<tr>
<td>Certificate (General)</td>
<td>Male</td>
<td>46</td>
<td>46</td>
<td>100</td>
</tr>
<tr>
<td>Overall</td>
<td>—</td>
<td>562</td>
<td>491</td>
<td>87</td>
</tr>
</tbody>
</table>

* PPLP = Pre-primary and Lower Primary

With some variations among the various groups of students, the respondents as a whole had 40 per cent of their fathers in the professional and para-professional occupation groups** and 18 per cent in the semi-skilled group, indicating that more than half had come from the middle and upper-middle strata of Singapore society. Among the respondents, 22 per cent had siblings (largely sisters) in the teaching profession. Respondents whose parents or grandparents were or had been teachers were few.

Before admission to the Institute, the respondents had to pay tuition for an average of 8 months.

**Popular and Unpopular Motives.** Table 2 gives for each type of motives as a whole, or for each motive identified in the analysis, orders of the items as shown therein. The table shows the six groups of responses for the most popular and unpopular motives.

For all respondents the most popular motives are: A challenging job, To realize potential, To develop the younger generation, and Financial difficulty. The most egocentric tendency is found in the altruistic motives; the least altruistic and the most self-actualizing are the motives least often given. For all respondents the motives least often indicated are: Financial difficulty, Teacher shortage, and Influenced by friends, Financial difficulty, and Teacher shortage, and Influenced by friends. For all respondents the self-actualizing motives are: A challenging job, To realize potential, Like children, and Fulfilling ambition. The most popular motives are: A challenging job, To realize potential, and Suits temperament. The least popular motives are: Financial difficulty, Teacher shortage, and Influenced by friends, Financial difficulty, and Teacher shortage, and Influenced by friends. For all respondents the self-actualizing motives are: A challenging job, To realize potential, Like children, and Fulfilling ambition.

**TABLE 2**

Examples of occupational groups:

- **Professionals**
  - doctor, engineer, manager, administrator
- **Para-professionals**
  - administrative assistant, teacher, shop proprietor, editor, etc.
- **Skilled workers**
  - electrician, foreman, tailor, etc.
- **Semi-skilled workers**
  - typist, mechanic, baker, salesman, etc.
- **Unskilled workers**
  - shop assistant, security officer, etc.

Before admission to the Institute, the respondents had to pay tuition for an average of 8 months.

**Popular and Unpopular Motives.** Table 2 gives for each type of motives as a whole, or for each motive identified in the analysis, orders of the items as shown therein. The table shows the six groups of responses for the most popular and unpopular motives.

For all respondents the most popular motives are: A challenging job, To realize potential, To develop the younger generation, and Financial difficulty. The most egocentric tendency is found in the altruistic motives; the least altruistic and the most self-actualizing are the motives least often given. For all respondents the self-actualizing motives are: A challenging job, To realize potential, Like children, and Fulfilling ambition. The most popular motives are: A challenging job, To realize potential, and Suits temperament. The least popular motives are: Financial difficulty, Teacher shortage, and Influenced by friends, Financial difficulty, and Teacher shortage, and Influenced by friends. For all respondents the self-actualizing motives are: A challenging job, To realize potential, Like children, and Fulfilling ambition.

**TABLE 2**

Examples of occupational groups:

- **Professionals**
  - doctor, engineer, manager, administrator
- **Para-professionals**
  - administrative assistant, teacher, shop proprietor, editor, etc.
- **Skilled workers**
  - electrician, foreman, tailor, etc.
- **Semi-skilled workers**
  - typist, mechanic, baker, salesman, etc.
- **Unskilled workers**
  - shop assistant, security officer, etc.

Before admission to the Institute, the respondents had to pay tuition for an average of 8 months.
Before admission to the Institute, 54 per cent of the respondents had the experience of giving private tuition for an average of 20 months and 55 per cent had been relief or temporary teachers for an average of 8 months.

### Popular and Unpopular Motives

Table 2 gives for each item the percentage of respondents as a whole who indicated it to be the motive or reason for choosing teaching as a career. Rank orders of the items among the list of thirty are also shown therein. The table also highlights for each of the six groups of respondents the most popular and the most unpopular motives or reasons.

For all respondents as a whole, the most popular motives are: *A challenging job*, *To further education*, *To realize potential*, *Like to teach*, and *Help develop the younger generation*. Clearly, a strong self-interest or egoistic tendency is discernible, though there is a minor altruistic element as well. On the other hand, the motives least often selected are: *Influenced by friends*, *Financial difficulty*, *Stop-gap*, *Help solve teacher shortage*, and *Influence by teachers*. These suggest a self-choice which was not much affected by inter-personal and circumstantial influences and, if only indirectly, reflect the egoistic element noted above. It is necessary, however, to point out that these findings are more representative of the English stream female students than the others as they constituted nearly 70 per cent of the respondents. It is important as well to note the English stream female students from the main part of the student population at the Institute.

Some differences between male and female responses were observed. For the female respondents as a whole, fondness for children and preference for working with children are among the more popular motives, found together with motives of a self-actualization kind. For the male respondents as a whole, the motives are more varied. The opportunity for further education and the availability of time for other activities headed the list of popular motives, though there is no lack of altruistic motives being chosen.

Among students in the English stream, helping to develop the younger generation seems to have more strongly motivated the Diploma students than the Certificate students; this is true of both male and female respondents. While the long vacation that teachers enjoy is among the most popular motives for the female Diploma students, this is not the case with the female Certificate students. Also, the percentage of male Diploma students who indicated spare time for other activities as an important motive is greater than that of male Certificate students.

### 1968–1981 Comparisons

Because of the manner in which information is presented in the study by Lau et al (1968), comparisons were possible only for certain motives and for certain groups of respondents. Although such comparisons that are made here appear to be piecemeal, the findings are nevertheless interesting in that they reflect changes in motives for teaching between the two populations separated by one and a half decades. Comparisons on other aspects can be found in Soh (1983).

**ENGLISH STREAM CERTIFICATE STUDENTS: MALES.** For male Certificate students in the English stream, information was available from the earlier study for six items, namely, *Service to society*, *An interesting job*, *To realize potential*, *A challenging job*, *To further education*, and *Financial difficulty*. Significant differences were found for two of these six items. While 39.1 per cent of the 1981 group indicated *An interesting job* as a motive, only 17.3 per cent of the 1968 group did so. While only 6.5 per cent of the 1981 group chose teaching because of *Financial difficulty*, 18.7 per cent of the 1968 group did so. It would appear that, all things being equal, the 1981 group came into teaching with a more positive outlook.

**ENGLISH STREAM CERTIFICATE STUDENTS: FEMALES.** For female Certificate students in the English stream, information was available from the earlier study for the same six items as mentioned above for comparisons. For three of these, a significant difference has been found. *To realize potential* was indicated as the motive by 31.7 per cent of the 1981 group but only 8.8 per cent of the 1968 group indicated this motive. Also, *A challenging job* was indicated as the motive by 46.1 per cent of the 1981 group but by only 34.3 per cent of the 1968 group. Moreover, while only 0.6 per cent of the 1981 group did so. Thus, as is true of the male Certificate students, the 1981 female Certificate students also chose teaching for more positive reasons when compared with their 1968 counterparts. The disappearance of the 'economic motive' could be linked to social changes i.e. greater financial prosperity.

**ENGLISH STREAM DIPLOMA STUDENTS.** From the earlier study, information was available for five items for English stream Diploma students, male and female combined. To make comparisons, a...
### TABLE 2 – MOST AND LEAST POPULAR MOTIVES FOR TEACHING

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
<th>All respondents N = 491</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ed</td>
<td>Cert Ed</td>
<td>Dip Ed</td>
<td>Cert Ed</td>
<td>Ed</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>PPLP</td>
<td>Chinese</td>
<td>Tamil</td>
<td>General</td>
</tr>
<tr>
<td></td>
<td>N = 173</td>
<td>N = 167</td>
<td>N = 45</td>
<td>N = 23</td>
<td>N = 408</td>
</tr>
<tr>
<td></td>
<td>% Rank</td>
<td>% Rank</td>
<td>% Rank</td>
<td>% Rank</td>
<td>% Rank</td>
</tr>
<tr>
<td>ALTRUISTIC MOTIVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service to society</td>
<td>42.2</td>
<td>62.9</td>
<td>34.8</td>
<td>72.9</td>
<td>26.1</td>
</tr>
<tr>
<td>Like children</td>
<td>44.3</td>
<td>4.3</td>
<td>3.8</td>
<td>5.5</td>
<td>6.5</td>
</tr>
<tr>
<td>A noble profession</td>
<td>30.4</td>
<td>27.9</td>
<td>5.5</td>
<td>37.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Help develop younger generation</td>
<td>1.2</td>
<td>1.2</td>
<td>29.5</td>
<td>1.2</td>
<td>29.5</td>
</tr>
<tr>
<td>Help solve teacher shortage</td>
<td>0.6</td>
<td>0.6</td>
<td>28.5</td>
<td>0.6</td>
<td>28.5</td>
</tr>
<tr>
<td>INTERPERSONAL INFLUENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenced by relatives</td>
<td>1.7</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Influenced by teachers</td>
<td>1.7</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Influenced by friends</td>
<td>2.9</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
</tr>
<tr>
<td>Parental wish</td>
<td>34.1</td>
<td>37.8</td>
<td>50.0</td>
<td>44.5</td>
<td>14.2</td>
</tr>
<tr>
<td>Admiration for teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF-ACTUALIZATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To realize potentials</td>
<td>28.3</td>
<td>31.7</td>
<td>30.4</td>
<td>30.1</td>
<td>27.0</td>
</tr>
<tr>
<td>Like to teach</td>
<td>32.9</td>
<td>51.1</td>
<td>51.1</td>
<td>51.1</td>
<td>51.1</td>
</tr>
<tr>
<td>Suits temperament</td>
<td>28.9</td>
<td>46.1</td>
<td>50.4</td>
<td>50.4</td>
<td>50.4</td>
</tr>
<tr>
<td>To further education</td>
<td>2.9</td>
<td>28.1</td>
<td>50.0</td>
<td>44.5</td>
<td>14.2</td>
</tr>
<tr>
<td>Fulfilling ambition</td>
<td>9.9</td>
<td>37.4</td>
<td>50.0</td>
<td>44.5</td>
<td>14.2</td>
</tr>
<tr>
<td>INTRINSIC NATURE OF TEACHING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An interesting job</td>
<td>51.1</td>
<td>37.4</td>
<td>37.4</td>
<td>37.4</td>
<td>37.4</td>
</tr>
<tr>
<td>A challenging job</td>
<td>33.3</td>
<td>46.1</td>
<td>46.1</td>
<td>46.1</td>
<td>46.1</td>
</tr>
<tr>
<td>Prefer to work with children</td>
<td>29.3</td>
<td>29.3</td>
<td>29.3</td>
<td>29.3</td>
<td>29.3</td>
</tr>
<tr>
<td>Learn more about children</td>
<td>2.9</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
<td>26.5</td>
</tr>
<tr>
<td>Variety of activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FINANCIAL, CIRCUMSTANTIAL REASONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had no alternatives</td>
<td>0.6</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Drifted into teaching</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Stop-gap</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Good salary</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Financial difficulty</td>
<td>6.8</td>
<td>30.4</td>
<td>30.4</td>
<td>30.4</td>
<td>30.4</td>
</tr>
<tr>
<td>FRINGE BENEFITS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Convenience after marriage</td>
<td>6.8</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Spare time for other activities</td>
<td>24.9</td>
<td>24.9</td>
<td>24.9</td>
<td>24.9</td>
<td>24.9</td>
</tr>
<tr>
<td>Long vacation</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Short working hours</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
<td>28.5</td>
</tr>
</tbody>
</table>

Note: The five-item Likert scale was used for each motive, ranging from 1 to 5. The sample was representative of the female student population in the same academic program, with a mean difference of 0.6 on the Likert scale. The five-item Likert scale was used for each motive, ranging from 1 to 5. The sample was representative of the female student population in the same academic program, with a mean difference of 0.6 on the Likert scale.
sample was re-constituted from the 1981 male and female students in the English stream Diploma programme, by random selection to maintain the same sex-ratio as that of the 1968 group.

The five items compared are Service to society, Had no alternatives, An interesting job, To further education, and Long vacation. For two of these, a significant difference has been found between the two groups. While only 10.6 per cent of the 1981 group chose teaching because of having Had no alternatives, 46.4 per cent of the 1968 group did so. Meanwhile, 19.7 per cent of the 1981 group indicated Long vacation as a motive for choosing teaching whereas 38.1 per cent of the 1968 group did so. These suggest that the 1981 Diploma students have come to teach with a more positive outlook, as has been found for the Certificate students. These differences suggest that teaching as a profession has now been perceived somewhat differently than as it used to be a decade or so ago.

### TABLE 3 - COMPARISON ON MOTIVES (FEMALE RESPONDENTS)

<table>
<thead>
<tr>
<th>Motives</th>
<th>1981 Study (N = 179)</th>
<th>1968 Study (N = 1024)</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%  Rank</td>
<td>%  Rank</td>
<td></td>
</tr>
<tr>
<td><strong>Alturistic Motives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service to society</td>
<td>28.5 4.5</td>
<td>34.1 2</td>
<td>NS</td>
</tr>
<tr>
<td>Like children</td>
<td>41.9 1</td>
<td>28.6 3</td>
<td>12.677***</td>
</tr>
<tr>
<td>A noble profession</td>
<td>12.3 15</td>
<td>19.8 8</td>
<td>5.687*</td>
</tr>
<tr>
<td>Help develop younger generation</td>
<td>20.7 8.5</td>
<td>24.3 5</td>
<td>NS</td>
</tr>
<tr>
<td>Help solve teacher shortage</td>
<td>0.6 26</td>
<td>2.7 27</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Interpersonal Influence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenced by relatives</td>
<td>2.2 22.5</td>
<td>9.4 22</td>
<td>10.193**</td>
</tr>
<tr>
<td>Influenced by teachers</td>
<td>1.7 24</td>
<td>12.1 20</td>
<td>17.565***</td>
</tr>
<tr>
<td>Parental wish</td>
<td>12.3 15</td>
<td>13.4 17</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Self-Actualization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To realize potentials</td>
<td>31.8 2.5</td>
<td>13.5 16</td>
<td>37.844***</td>
</tr>
<tr>
<td>Like to teach</td>
<td>27.4 6</td>
<td>18.3 11</td>
<td>8.023**</td>
</tr>
<tr>
<td>Suits temperament</td>
<td>14.5 12.5</td>
<td>21.6 7</td>
<td>4.650*</td>
</tr>
<tr>
<td>To further education</td>
<td>31.8 2.5</td>
<td>44.1 4</td>
<td>9.439**</td>
</tr>
<tr>
<td>Fulfilling ambition</td>
<td>16.8 11</td>
<td>19.7 9</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Intrinsic Nature Of Teaching</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An interesting job</td>
<td>23.5 7</td>
<td>24.7 4</td>
<td>NS</td>
</tr>
<tr>
<td>Variety of activities</td>
<td>14.5 12.5</td>
<td>21.9 6</td>
<td>5.000*</td>
</tr>
<tr>
<td>Prefer to work with children</td>
<td>28.5 4.5</td>
<td>17.1 13</td>
<td>12.983***</td>
</tr>
<tr>
<td>Learn more about children</td>
<td>18.4 10</td>
<td>13.7 15</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Financial, Circumstantial Reasons</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had no alternatives</td>
<td>6.7 19</td>
<td>16.9 14</td>
<td>12.159***</td>
</tr>
<tr>
<td>Drifted into teaching</td>
<td>2.2 22.5</td>
<td>4.8 24</td>
<td>NS</td>
</tr>
<tr>
<td>Stop-gap</td>
<td>0.6 26</td>
<td>2.9 26</td>
<td>NS</td>
</tr>
<tr>
<td>Good salary</td>
<td>4.5 21</td>
<td>3.1 25</td>
<td>NS</td>
</tr>
<tr>
<td>Financial difficulty</td>
<td>0.6 26</td>
<td>12.5 19</td>
<td>22.695***</td>
</tr>
<tr>
<td><strong>Fringe Benefits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>20.7 8.5</td>
<td>18.8 10</td>
<td>NS</td>
</tr>
<tr>
<td>Convenience after marriage</td>
<td>11.7 17.5</td>
<td>13.2 18</td>
<td>NS</td>
</tr>
<tr>
<td>Spare time for other activities</td>
<td>12.3 15</td>
<td>10.7 21</td>
<td>NS</td>
</tr>
<tr>
<td>Long vacation</td>
<td>11.7 17.5</td>
<td>17.3 12</td>
<td>NS</td>
</tr>
<tr>
<td>Short working hours</td>
<td>5.6 20</td>
<td>5.1 23</td>
<td>NS</td>
</tr>
</tbody>
</table>

*** p < .001   ** p < .01   * p < .05   NS — Not significant
FEMALE STUDENTS. A more comprehensive comparison between the 1968 and 1981 groups of female students was afforded by the information in the earlier study for all motive items. The 1968 group of female students included those in the Diploma programmes in both the English and the Chinese streams and those in the Certificate programmes with various specializations. For comparison, students in the 1981 Diploma programmes, both English and Chinese, and Certificate (PPLP) were randomly selected to form a sample which maintained the same ratio between graduates and non-graduates. It is necessary, however, to point out that since 93.3 per cent of the 1968 group of female students and the 1981 reconstituted sample are non-graduates, the findings are more applicable to the Certificate students.

Table 3 shows for the two groups the percentages and rankings of the 27 items of motives for teaching common to the two studies. For 12 of these motives, a significant difference was found between the two groups. Like children, To realize potential, Like to teach, and Prefer to work with children are items for which a greater proportion of the 1981 group indicated as motives for teaching. It is obvious that these motives are child-oriented or self-oriented and may be taken as being more relevant to teaching as a profession.

On the other hand, a greater proportion of the 1968 group indicated as their motives for teaching these items: A noble profession, Influenced by relatives, Influenced by teachers, Suits temperament, To further education, Variety of activities, Had no alternative, and Financial benefits. It may be deduced that the 1968 group was more concerned with reasons less relevant to teaching as a profession (except that they saw teaching in a better light) and experienced more social influence from the relatives and teachers. In short, when female students in the two studies were compared, those in the 1981 group seem to have come to teaching with more positive motives.

Conclusion

By way of summary, the 1981 groups of students, when choosing teaching as a career, were more interested in self-actualization, the intrinsic nature of teaching and the children they were going to teach and not so much in easing financial or circumstantial pressure or reasons not directly relevant to education. Such a picture may look too rosy to be true and skeptics may wonder whether the students were truthful in their answers. However, as the questionnaire was administered towards the end of or half-way through their training programmes and not before admission to the Institute (and, moreover, before the salary revision which took place in 1983), we may regard the answers as reasonably truthful.

It may then be concluded that this new generation of teachers has come to teaching with motives which are more congruent with the nature of education and more psychologically healthy, despite an element of self-centredness. This means that the teaching force is being strengthened by a team of willing teachers who will like their work and the pupils they will work with. If they can find satisfaction in the reality of the school after completing their training programmes and if they can have their needs for self-actualization and to be with children adequately gratified, they will make happy teachers. This, it is to be hoped, will increase the probability of their becoming effective teachers, as people will generally strive to be competent in what they enjoy doing.

References

Austin, F. M. 'An analysis of the teacher profession.' Journal of Educational Psychology, 1968.


Jantzen, J. Marc. 'A longitudinal study.' 1981.


NEA Research Division.
References

Austin, F.M. 'An analysis of the motives of adolescents for the choice of the teaching profession.' *British Journal of Educational Psychology*, 1, 87-103, 1931.

Grant, P.J.T. 'The social and educational background of emergency trained teachers and reasons for their choice of the profession.' *British Journal of Educational Psychology*, 20, 164-173, 1950.


Tudhope, W.B. 'Motives for the choice of the teaching profession by training college students.' *British Journal of Educational Psychology*, 14, 129-141, 1944.

Valentine, C.W. 'An enquiry as to the choice of the teaching profession by university students.' *British Journal of Educational Psychology*, 4, 237-259, 1934.


Introduction

Both English and Mandarin can express concepts such as certainty, probability, possibility, improbability, impossibility and ability by using modals. For example, in sentence 1a the modal 'can' is being used to express ability.

He can speak English 1a

This sentence translates into Mandarin as

Ta huijiang ying wen 1b

Here the Mandarin modal 'hui' is functioning in the same way as the English modal 'can'.

The functional similarity of English and Mandarin modals has led many language teachers to believe that both Chinese learners of English and English learners of Mandarin will experience little difficulty in learning English and Chinese modals respectively.

In this article, however, I shall try to argue that despite the similarities, or, perhaps because of them, Chinese learners of English and English learners of Mandarin will experience little difficulty in learning English and Chinese modals respectively.

Studies in contrastive analysis — the comparison of two or more languages — (of Lado 1957) (Stockwell and Bowen 1965) were considered as being of fundamental importance to second or foreign language teaching and learning. Their importance lay in what seemed the common sense notion that if a contrastive analysis showed that Language A had a feature (f) that Language B did not, then speakers of Language B would find it difficult to learn Language A’s feature (f) as it did not occur in their own language.

This notion was extended to incorporate a hierarchy of difficulty. For example, Stockwell and Bowen (1965) in a CA of English and Spanish sounds established a set of eight possible contrasts:

<table>
<thead>
<tr>
<th>Native Language</th>
<th>Target Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice</td>
<td>Choice</td>
</tr>
<tr>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Obligatory</td>
<td>Obligatory</td>
</tr>
<tr>
<td>Null</td>
<td>Null</td>
</tr>
<tr>
<td>Optional</td>
<td>Obligatory</td>
</tr>
<tr>
<td>Obligatory</td>
<td>Obligatory</td>
</tr>
<tr>
<td>Null</td>
<td>Null</td>
</tr>
<tr>
<td>Obligatory</td>
<td>Null</td>
</tr>
</tbody>
</table>

Once examples of these eight types have been identified, they can be ranked in order of difficulty. The most difficult is where the target language has an obligatory “choice” and where there is null in the native language. Thus, the least difficult is where there is obligatory “choice” in both languages.

Examples of the most and least difficult sounds for Mandarin speakers learning English would therefore be:

Most difficult: native language null, target language obligatory — a phoneme of English with no counterpart in Mandarin

Least difficult: native language obligatory, target language obligatory — a phoneme occurring word initially in both languages

Although these contrasts were established to compare sound systems of languages, they can be applied to other language systems. When we apply these contrasts to the syntax of Mandarin and English we can predict areas of most difficulty.

Conversely, the huijiang ying wen 1b

I eat, but he

(English: plural ‘s’ inflection)

He does not swim (3rd person singular inflection)

Conversely, the huijiang ying wen 1b

I eat, but he

(English: plural ‘s’ inflection)

He does not swim (3rd person singular inflection)

The advice and assistance in checking the Mandarin translation rendered by Mr Yip Hon Yuen of the Chinese Studies Department, Institute of Education is gratefully acknowledged.
'average' difficulty and least difficulty. For example, an area of most difficulty for Mandarin learners of English would be the system of grammatical inflection which is obligatory in English but does not exist in Mandarin.

Conversely, as a contrastive analysis of English and Mandarin shows that modals exist in both languages and perform similar functions, the prediction is that learning the respective modal system will be relatively easy for Chinese and English learners. Moreover, in addition to the existence of modals in both languages, there are other reasons why Chinese learners may find English modals relatively easy to operate. English modals do not require inflection and have a system of interrogation and negation that is structurally less complex than the equivalent systems for English main verbs. This is shown in Table 1.

The English modal system therefore is structurally less complex to operate than the English main verb system. Furthermore, it is structurally 'closer' to the Mandarin modal system than is the English main verb system. One might predict then that the English modal system is easier for Chinese learners than the English main verb system.

Our prediction that Chinese learners of English will find the English modal system relatively easy to learn has been based on the areas of function and structure. There is, however, a further area that needs to be considered — the area of meaning. Although modals in both Mandarin and English refer to the same concepts — ability and possibility for example — there is no one English modal that

<table>
<thead>
<tr>
<th>English</th>
<th>Mandarin</th>
</tr>
</thead>
<tbody>
<tr>
<td>a boy, but two boys (plural 's' inflection)</td>
<td>yi ge nan haizi and liang ge nan haizi (no inflection)</td>
</tr>
<tr>
<td>I eat, but he eats (3rd person singular 's' inflection)</td>
<td>wo chi and ta chi (no inflection)</td>
</tr>
</tbody>
</table>

Conversely, as a contrastive analysis of English and Mandarin shows that modals exist in both languages and perform similar functions, the prediction is that learning the respective modal system will be relatively easy for Chinese and English learners. Moreover, in addition to the existence of modals in both languages, there are other reasons why Chinese learners may find English modals relatively easy to operate. English modals do not require inflection and have a system of interrogation and negation that is structurally less complex than the equivalent systems for English main verbs. This is shown in Table 1.

The English modal system therefore is structurally less complex to operate than the English main verb system. Furthermore, it is structurally 'closer' to the Mandarin modal system than is the English main verb system. One might predict then that the English modal system is easier for Chinese learners than the English main verb system.

Our prediction that Chinese learners of English will find the English modal system relatively easy to learn has been based on the areas of function and structure. There is, however, a further area that needs to be considered — the area of meaning. Although modals in both Mandarin and English refer to the same concepts — ability and possibility for example — there is no one English modal that

### TABLE 1: ENGLISH AND MANDARIN MODAL — MAIN VERB TABLE

<table>
<thead>
<tr>
<th>Main Verbs (English)</th>
<th>Main Verbs (Mandarin)</th>
<th>Modals (English)</th>
<th>Modals (Mandarin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I swim*</td>
<td>wo you yong*</td>
<td>I can swim</td>
<td>wo bu you yong</td>
</tr>
<tr>
<td>He swims (3rd person singular inflection)</td>
<td>ta you yong</td>
<td>He can swim? (no inflection)</td>
<td>ta bu you yong</td>
</tr>
<tr>
<td>Do you swim? (introduction of &quot;dummy&quot; do)</td>
<td>ni you yong ma* (introduction of interrogative marker)</td>
<td>Can you swim? (no &quot;dummy&quot; do) (inversion of modal + subject)</td>
<td>ni bu you yong ma* (introduction of interrogative marker)</td>
</tr>
<tr>
<td>Does he swim? (introduction of &quot;dummy&quot; do 3rd person singular inflection)</td>
<td>ta you yong ma* (introduction of interrogative marker)</td>
<td>Can he swim? (no &quot;dummy&quot; do) (no inflection) (inversion of modal + subject)</td>
<td>ta bu you yong ma* (introduction of interrogative marker)</td>
</tr>
<tr>
<td>I do not swim (introduction of &quot;dummy&quot; do), (introduction of negative marker)</td>
<td>wo bu you yong (introduction of negative marker)</td>
<td>I cannot swim (no &quot;dummy&quot; do) (introduction of negative marker)</td>
<td>wo bu bu you yong (introduction of negative marker)</td>
</tr>
<tr>
<td>He does not swim (introduction of &quot;dummy&quot; do), (introduction of negative marker), (3rd person singular inflection)</td>
<td>ta bu you yong (introduction of negative marker)</td>
<td>He cannot swim (no &quot;dummy&quot; do) (no inflection) (introduction of negative marker)</td>
<td>ta bu bu you yong (introduction of negative marker)</td>
</tr>
</tbody>
</table>

* These sentences of English actually imply ability. Similarly the Chinese sentences can imply ability or an action going on at the time of speaking or even a wish to swim etc., depending on the context. These English and Mandarin sentences should therefore not be seen as translations of each other. They are included in the table to show their comparative structural complexity.

** In Chinese, questions can also be asked using the A Neg A device. For example 'ni neng bu neng you yang?'
has exactly the same semantic properties as a Mandarin modal. It is this that causes learners difficulty. English learners of Mandarin often experience doubt as to when to use which Chinese modal. Similarly Chinese learners of English often confuse English modals. For example, most teachers of English to Chinese students will be aware that Chinese students believing that the Chinese modal ‘keyi’ can always be translated into English as ‘may’. However the English modal ‘may’ is extremely restricted in its uses in comparison with the Chinese modal ‘keyi’. This comparative restriction of ‘may’ against ‘keyi’ is shown in the modal lists on pages 6ff.

Therefore, any attempt that students make to draw an exact semantic correspondence between an English and a Chinese modal will fail. As the lists below show, no such correspondence can be made.

List of English modals (taken from Quirk and Greenbaum) and their translations into Mandarin.1 The modals are in italics.

<table>
<thead>
<tr>
<th>English Modal</th>
<th>Mandarin Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
<td>可以 (keyi)</td>
</tr>
<tr>
<td>MIGHT</td>
<td>可能 (keneng)</td>
</tr>
<tr>
<td>SHALL</td>
<td>必须 (bi xu)</td>
</tr>
<tr>
<td>SHOULD</td>
<td>应该 (yinggai)</td>
</tr>
<tr>
<td>WILL</td>
<td>必须 (bi xu)</td>
</tr>
<tr>
<td>MAY</td>
<td>可以 (keyi)</td>
</tr>
</tbody>
</table>

A: CAN

- He can speak English (ability)
  - 他 can speak English (ability)
- You can smoke in here? (permission)
  - 你可以抽烟吗?
- I can make mistakes (theoretical possibility)
  - 我会犯错误。

B: COULD

- I could play the piano in my youth (past ability)
  - 我在年轻时会弹钢琴。
- Could I smoke in here? (permission)
  - 我可以抽烟吗?
- We could go to the theatre (present possibility)
  - 我们可以去看戏。
- If I were a millionaire, I could buy three cars (possibility or ability in unreal conditions)
  - 如果我是个百万富翁，我会买三辆车。
- Could you open the window please? (with implication of willingness)
  - 你可以开窗吗？

C: MAY

- You may leave the room (permission-formal)
  - 你可以离开这个房间。

Footnotes
2. ‘Keneng’ is more correctly treated as an adjectival adverb as it can be modified by an intensifier such as ‘hen’—‘hen keneng’ = very likely.
3. ‘Yao’ is more correctly treated as a main verb as it can take a direct object—‘wo yao yi ben shu’ = I want a book.

Looking at the word order in English and Chinese...
v) *He will* do it whether you want it or not  
   (insistence)  
   Bu guan ni xi huan bu xi huan, ta *dou yao zuo*  

vi) The game *will* be finished by now (prediction)  
   Xian zai zhe ge bisai yinggai jieshu le

**H: WOULD**

i) *Would* you excuse me? (willingness)  
   Ni hui yuanliang wo ma?  

ii) It's your own fault; you *would* take the baby  
    with you.  
   Zhe shi ni de cuo, ni yiding *yao* ba haizi dai zou.  

iii) a) Every morning he *would* go for a long  
    walk (characteristic activity in the past —  
    it was customary)  
   Yi qian, mei tian zao shang, ta *dou hui zuo*  
   yi duan zhang ju li de san bu.  

   b) John *would* make a mess of it (characteris-  
    tic activity — it was typical)  
   Yi John de xing ge, ta *yiding hui* ba shi qing  
   nong de yi yuan li hai  

iv) He *would* smoke too much if I didn’t stop  
   him (conditional)  
   Ruguo wo bu zu zhi ta chou yan ta *hui* chou de  
   hen li hai  

v) That *would* be his mother (probability)  
   Zhe ge nü ren *keneng* shi ta muqin

**I: MUST**

i) *You must* be back by 10 o’clock (obligation or  
   compulsion)  
   Shi dian yi qian ni dei hui lai  

ii) There *must* be a mistake (logical necessity)  
   Yiding shi chu le wenti (no modal used)

Looking at the way the English modals translate into Chinese, we can show the “meaning mismatching” of English and Chinese modals in this way:

<table>
<thead>
<tr>
<th>ENGLISH MODALS</th>
<th>CHINESE MODALS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAN</strong></td>
<td></td>
</tr>
<tr>
<td>ability  hui</td>
<td>(Ai)</td>
</tr>
<tr>
<td>permission keyi</td>
<td>(Aii)</td>
</tr>
<tr>
<td>theoretical possibility hui</td>
<td>(Ai)</td>
</tr>
<tr>
<td>past ability hui</td>
<td>(Bi)</td>
</tr>
<tr>
<td>permission keyi</td>
<td>(Bii)</td>
</tr>
<tr>
<td>present possibility keyi</td>
<td>(Biii)</td>
</tr>
<tr>
<td>possibility in unreal conditions keyi</td>
<td>(Biv)</td>
</tr>
<tr>
<td>request — willingness No modal used</td>
<td>(Bv)</td>
</tr>
<tr>
<td><strong>COULD</strong></td>
<td></td>
</tr>
<tr>
<td>willingness — assurance (jiang) hui</td>
<td>(Ei)</td>
</tr>
<tr>
<td>intention (1st person) (Neg) hui (Ei)</td>
<td></td>
</tr>
<tr>
<td>insistance (yiding) yao (Eiv)</td>
<td></td>
</tr>
<tr>
<td>helplessness yinggai (Eiv)</td>
<td></td>
</tr>
<tr>
<td><strong>MAY</strong></td>
<td></td>
</tr>
<tr>
<td>permission keyi</td>
<td>(Di)</td>
</tr>
<tr>
<td>possibility keyi</td>
<td>(Dii)</td>
</tr>
<tr>
<td><strong>MIGHT</strong></td>
<td></td>
</tr>
<tr>
<td>willingness — assurance (jiang) hui</td>
<td>(Ei)</td>
</tr>
<tr>
<td>intention (1st person) (Neg) hui (Ei)</td>
<td></td>
</tr>
<tr>
<td>insistance (yiding) yao (Eiv)</td>
<td></td>
</tr>
<tr>
<td>helplessness yinggai (Eiv)</td>
<td></td>
</tr>
<tr>
<td><strong>SHALL</strong></td>
<td></td>
</tr>
<tr>
<td>obligation yinggai (Fi)</td>
<td></td>
</tr>
<tr>
<td>putative no modal used (Fii)</td>
<td></td>
</tr>
<tr>
<td>real condition — formal yao (Fii)</td>
<td></td>
</tr>
<tr>
<td>willingness (yiding) hui (Gii)</td>
<td></td>
</tr>
<tr>
<td>polite request — offer no modal used (Gii)</td>
<td></td>
</tr>
<tr>
<td>polite request keyi (Giii)</td>
<td></td>
</tr>
<tr>
<td>intention hui (Giv)</td>
<td></td>
</tr>
<tr>
<td>insistance yao (Gv)</td>
<td></td>
</tr>
<tr>
<td>prediction yinggai (Gv)</td>
<td></td>
</tr>
<tr>
<td><strong>WILL</strong></td>
<td></td>
</tr>
<tr>
<td>willingness hui (Hi)</td>
<td></td>
</tr>
<tr>
<td>insistance (yiding) yao (Hii)</td>
<td></td>
</tr>
<tr>
<td>customary characteristic (yiding) hui (Hii a)</td>
<td></td>
</tr>
<tr>
<td>typical characteristic hui (Hii b)</td>
<td></td>
</tr>
<tr>
<td>conditional hui (Hiv)</td>
<td></td>
</tr>
<tr>
<td>probability keneng (Hv)</td>
<td></td>
</tr>
<tr>
<td><strong>WOULD</strong></td>
<td></td>
</tr>
<tr>
<td>obligation or compulsion dei (ii)</td>
<td></td>
</tr>
<tr>
<td>logical necessity no modal used (ii)</td>
<td></td>
</tr>
</tbody>
</table>

1984 VOL 6 NO 1 - 47
This shows for example that the English modal 'would' can be translated into Mandarin as 'hui', 'yao' or 'keneng' depending on which use of would is being employed. Similarly, the Mandarin modal 'hui' can be translated into English as 'would', 'will', 'shall', 'could' or 'can' depending on which use of 'hui' is being employed.

I hope that the above lists show that no Chinese modal has a one-to-one semantic correspondence with any English modal. Chinese learners of English should therefore be discouraged from attempting to establish any such semantic correspondence. English learners of Mandarin should be similarly dissuaded. The tables should also explain why Chinese learners of English who, although having modals that function in a similar way to English modals in their own language, nevertheless find it difficult to learn how to use English modals in appropriate contexts. This explanation holds for English learners of Mandarin.

Implications for language teaching

1. Modals exist and have similar functions in both Mandarin and English. Furthermore, English modals are structurally relatively easy to operate. Certain uses of certain modals should therefore be introduced to Chinese learners of English at an early stage. Introducing certain uses of certain modals early has the added advantage of allowing learners to communicate — albeit in a limited way — from the earliest stages of second language learning. For example, the English modal 'can' being used to express ability could be introduced early, as learners, working in pairs or groups, can find out what their peers are able or not able to do.

Learner A Can you swim?
Learner B No I can't.
Learner A Yes I can.
Can you?

In addition, this type of activity naturally introduces vocabulary to the learners in the form of main verbs and nouns (ride a bicycle, speak Japanese, cook, play basketball etc). Perhaps, most importantly, the fact that they are communicating at an early stage of second language learning will motivate the learners and build up their confidence. An example of material used for such an activity is given in the appendix.

2. Only specific uses of certain modals should be taught in the early stages. I am not suggesting that all the uses of all the modals be taught at the early stages. Nor am I suggesting that all the uses of one modal be taught at the early stages.

3. Teachers should, from the outset, discourage students from assuming that an English modal can always be equated to a Chinese modal. For example, it would be very dangerous to let Chinese learners assume that the English modal 'can' can always be translated as Chinese modal 'hui'. Only certain uses of the English modal can be translated as 'hui'. Similarly of course, English learners of Mandarin must be made aware, for example, that 'hui' can mean much more than 'can'.

4. English and Mandarin language teachers should consider modals in terms of the specific uses of each modal rather than in overall terms such as 'can' or 'hui'.

5. Implicit in this paper is the suggestion that the results of certain contrastive analyses need to be treated with some caution by language teachers. In particular, any contrastive analysis that overlooks the area of meaning will be unsatisfactory.

6. Despite the caution advised in 5 above, English teachers of Mandarin speaking pupils can expect their students to experience great difficulty in learning the English inflectional system and in particular the system of tense and time reference rather than by problems with the inflectional system itself.

References
University of Calif.
Leech G. and Svarts of English Longman

APPENDIX

A. Example: Can you swim?

<table>
<thead>
<tr>
<th>Student A</th>
<th>Find out from Ma can do (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>swim</td>
<td></td>
</tr>
<tr>
<td>speak Malay</td>
<td></td>
</tr>
<tr>
<td>write Chinese</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td></td>
</tr>
<tr>
<td>sew</td>
<td></td>
</tr>
<tr>
<td>speak Cantonese</td>
<td></td>
</tr>
<tr>
<td>play badminton</td>
<td></td>
</tr>
</tbody>
</table>

B. Example: Can you swim?

<table>
<thead>
<tr>
<th>Learner A</th>
<th>Find out from Learner B can do (v)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. speak Hok</td>
<td></td>
</tr>
<tr>
<td>2. play chess</td>
<td></td>
</tr>
<tr>
<td>3. type</td>
<td></td>
</tr>
<tr>
<td>4. swim</td>
<td></td>
</tr>
<tr>
<td>5. play tennis</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 1 Can — used to express ability.

A. Example: Can you swim? Yes I can. Can you (swim)?
   No I can’t.

Student A
Find out from your partner which of these things he can do (✓) and which he can’t do (x)

<table>
<thead>
<tr>
<th></th>
<th>Can do (✓)</th>
<th>Can’t do (x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>swim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>speak Malay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>write Chinese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sew</td>
<td></td>
<td></td>
</tr>
<tr>
<td>speak Cantonese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>play badminton</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Example: Can Mr Ma type? Yes he can.

Student A
Find out from student B which of these things Mr Ma can do (✓) and which he cannot do (x)

<table>
<thead>
<tr>
<th></th>
<th>Can do (✓)</th>
<th>Can’t do (x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>speak Hokien</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>play chess</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>swim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>play tennis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student B
Answer student A’s questions by referring to the box below.

Mr Ma’s abilities

<table>
<thead>
<tr>
<th></th>
<th>Can do</th>
<th>Can’t do</th>
</tr>
</thead>
<tbody>
<tr>
<td>speak Hokien</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>play chess</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>swim</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>play tennis</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

References

RESEARCH REPORT

The Analysis of Spoken English: A Developmental Approach

J Moynihan

1 INTRODUCTION

We know quite a lot about the sequence in which native-English-speaking children develop mastery over the sounds, structures, and grammatical features of their own language. This knowledge can be described by means of a "developmental grammar", that is, a description of the sequence of acquisition.

We do not have such precise information about the sequence in which children acquire English when it is not their mother-tongue. Some studies seem to show that non-native learners follow the same sequence of development as native-speakers; other studies show that they do not. This point is an important one for educators in Singapore, because it raises the questions:

1. Should we base our grammar syllabus on the native-speakers' sequence of development, or should we take into account the effects of the Singapore multilingual environment?
2. What, exactly, are the effects of this environment on children's language development, and how can we counteract undesirable effects?

Objectives of Study

In this study we wanted to compare the oral language performance of Singapore children with that of two other groups of children of the same age (7 - 8 years):

(a) a group of native-speakers in New Zealand (NG);
(b) a group of Samoan children attending New Zealand primary schools, that is, non-native speakers (SG).

We wanted to find out:

1. whether there were areas of grammar which all three groups found difficult (as shown by the number and type of mistakes made);
2. whether the non-native-speakers made different types of mistakes from those of the native-speakers and, if so;
3. whether the mistakes were due to the effects of the children's mother-tongue, or whether they were due to other factors as well.

Our main aim was to provide educators with more precise information about:

1. the pattern of development, among Singapore children, in the main grammatical categories in English;
2. the areas of greatest difficulty for those children;
3. the possible causes of such difficulty.

2 METHOD

The method of analysis used is called Developmental Sentence Analysis (Lee & Koenigsknecht, 1974). It is based on the acquisition of English as a first (that is, native) language, and is especially useful for research purposes in that it gives a numerical loading (or weighting) to the main grammatical features of English, according to their sequence of development among native-speaking children aged 2 to 7 years. The weighting goes from 1 to 8. For example, in the category of Indefinite Pronouns, the earliest to be mastered are "it", "this", "that" and these are given a weighting of 1; the latest to be mastered are items such as "any", "everyone", "both", "few", "each", etc. and these are given a weighting of 7, when they appear in the child's spoken language. By "mastered" we mean: "used appropriately in a complete sentence."

The main points of this method are:

1. that it measures grammatical areas;
2. that the sequence of learning children's language is the same, whether it is a first or second language;
3. that, by providing a developmental Sentence Analysis, educators to make a distinction between non-natives' and native-speakers' grammatical backgrounds.

This method was used by Longhurst, Politzer 1974; Ong, 1979; Miller 1979; Miller 1974. It provides a useful tool for educators in the development of educational syllabuses in primary schools. The insights for curriculum development revealed by this method are essential for curricular planning.

3 SAMPLE

We used a sample of children (109 girls) carefully selected from occupational and social backgrounds.

1. the children came from two linguistic backgrounds: English and Mandarin; the language used in the sample was the "home language" of the children;
2. the children came from two occupational backgrounds: "average" (over 50% had fathers in white collar occupations or "skilled" (over 50% had fathers in manual occupations);
3. the children went to Second Form or Higher Form classes; or "skilled" (over 50% had fathers in manual occupations);
4. the children came from two social backgrounds: "average" (over 50% had fathers in white collar occupations or "skilled" (over 50% had fathers in manual occupations).

The main points of this method are:

1. that it measures grammatical areas;
2. that the sequence of learning children's language is the same, whether it is a first or second language;
3. that, by providing a developmental Sentence Analysis, educators to make a distinction between non-natives' and native-speakers' grammatical backgrounds.

This method was used by Longhurst, Politzer 1974; Ong, 1979; Miller 1979; Miller 1974. It provides a useful tool for educators in the development of educational syllabuses in primary schools. The insights for curriculum development revealed by this method are essential for curricular planning.
The main points to be borne in mind as regards this method are:
- that it measures development in specific grammatical areas only.
- that the weighting of items represents their sequence of development among native-speaking children;
- that, by providing a numerical “score” (Developmental Sentence Score) it enables researchers to make comparisons between native and non-native-speakers, as well as between non-native-speakers from different language backgrounds.

This method (DSA) has been used in several studies (Longhurst & Schrandt 1973; Lee 1974; Politzer 1974; Crystal & others 1976; Moynihan 1979; Miller 1981), and for various purposes. It provides a useful preliminary assessment of grammatical ability in spoken language, and also provides the insights for follow-up studies based on the information revealed — information which is also essential for curriculum developers and writers of materials for primary schools.

3 SAMPLE
We used a sample of 40 children (20 boys and 20 girls) carefully selected in order to provide as homogeneous a group as possible. The children came from two schools, and the requirements for selection were as follows:
- the children should be Chinese, aged from 7 to 8 years;
- their teachers should describe them as being of “average” general ability on a three-point scale (above average; average; below average);
- the father had to be English-educated, at least to Secondary 4 level, and his occupation had to be among those described as “managerial" or “skilled’. This included non-graduate teachers and other diploma-holders. (See APPENDIX I for details.)
- “home languages” had to be English and/or Mandarin; other “dialects” were excluded.

In other words, we were looking for children who might be described as a “middle” group in terms of their family and school background. The four members of the research team then interviewed each child for thirty minutes; the interview was recorded and transcribed, and two of the team then carried out the Developmental Sentence Scoring (DSS) procedures\(^1\) and the preliminary statistical analysis which is the subject of this report.

4 RESULTS
Since this method measures both fluency and correctness, we can summarize results under both headings.

Briefly, our main findings were as follows:

4.1 The native-speaking (NG), Samoan (SG) and Singapore (SING) groups all showed difficulty in handling verbs and conjunctions with a weighting of 8 (the top weighting), e.g. could have seen, etc. as old as, so fast that, etc.

There are two possible explanations for this similarity among the three groups:
- that the difficulty shown confirms the high weighting (i.e. the “difficulty” factor), and is therefore related to the children’s age and stage of development;
- that for the non-native speakers (SG and SING) the “difficulty” factor may have additional components. For example, these complex forms are rarely heard or used by the children outside the classroom and, for the Singapore children, some of these items have not yet been taught in the classroom. It was noticeable, for example, that the New Zealand and Samoan children used the complex verb forms with the highest weightings (7 and 8), even though they made a large number of mistakes, whereas the Singapore children made very few attempts, with a very high error rate, as the following table shows.

\[\text{TABLE 1: COMPLEX VERB FORMS – NUMBER OF CORRECT AND INCORRECT USES, AND ERROR PERCENTAGE FOR NATIVE-SPEAKING, SAMOAN AND SINGAPORE CHILDREN.}\]

<table>
<thead>
<tr>
<th></th>
<th>Native Speaking Children</th>
<th>Samoan Children</th>
<th>Singapore Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Uses</td>
<td>508</td>
<td>300</td>
<td>18</td>
</tr>
<tr>
<td>Incorrect Uses</td>
<td>71</td>
<td>107</td>
<td>78</td>
</tr>
<tr>
<td>Error Percentage</td>
<td>12</td>
<td>26</td>
<td>81</td>
</tr>
</tbody>
</table>

We would suggest, however, that this high error rate is not a matter of concern, at this age-level, in spoken language. (Whether the children understand the complex forms when they meet them in science and mathematics texts, as well as in their

\(^1\) Our original requirement was GCE “O” Level or School Certificate, but this had to be modified because of time constraints. We therefore looked at “occupation” in conjunction with “level of education” in making our selection.

\(^2\) The fifty “best”, consecutive sentences are selected from each transcript for scoring.
4.2 There was a striking similarity between the non-native-speaking groups (Samoan and Singapore children) in their use of the "easier" verb forms, that is, simple present and past and the simple present and past continuous (he sings, he sang, he is/was singing). These forms are weighted 1 and 2 because they are easiest to develop, and to be mastered, by native-speaking children. Yet it is these "easy" forms which cause the most trouble to children from different language backgrounds, especially when they have to use them in speaking (rather than in writing, where there is more time to think).

The following table shows the general pattern for the native and non-native-speaking children's use of verbs which are weighted 1 and 2. Note the high number of times these forms were needed in the conversational setting which we used in these studies.

<table>
<thead>
<tr>
<th>TABLE 2: SIMPLE PRESENT, PAST AND CONTINUOUS VERB FORMS – NUMBER OF CORRECT AND INCORRECT USES, AND ERROR PERCENTAGE FOR NATIVE-SPEAKING, SAMOAN AND SINGAPORE CHILDREN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Speaking Children</td>
</tr>
<tr>
<td>Correct Uses</td>
</tr>
<tr>
<td>Incorrect Uses</td>
</tr>
<tr>
<td>Error Percentage</td>
</tr>
</tbody>
</table>

Further analysis of the examples of incorrect use by the Singapore children showed that 78% of all errors in the above forms (Table 2) occurred under the following three headings:

(a) Omission of 3rd person singular present tense marker, e.g. x he say, x she bring, etc.: 303 instances

(b) Omission of the regular past tense marker (-ed, e.g. x last night I walk) home, etc.: 121 instances

(c) Incorrect form of irregular past tense, e.g. x I drawed, x it break, x they seen, etc.: 180 instances

Of these three patterns, (a) and (b) appeared frequently among the Samoan children, and very seldom among the native-speakers (4 instances of (a) only). But both native-and non-native-speakers made mistakes under heading (c).

Again, there is more than one possible explanation for the frequency of (a) and (b) errors among the non-native-speakers:

• The commonest reason given (by non-linguists) is that the failure to use correct past tense forms is due to "interference" from the mother-tongue, if it does not make changes in the verb itself in order to show past events (Samoan and Chinese languages, for example). But in these studies we have found that it is the regular past tense marker that is most commonly omitted in speaking, and that the same child will use irregular forms correctly — or at least show that he knows there is a "special form" to show past time, even if he gets it wrong, e.g. x breaked, x ranned, etc. (Mistakes which were also made by the native-speaking children.)

• If, therefore, we cannot say that such omission of -ed is due to "interference", what is the alternative? One possible reason is that this regular past tense ending is frequently not "sounded" in connected speech, for example, whenever it is followed by a word beginning with t, d, or th, as in:
  (1) he talked to his mother
  (2) she watched the film
  (3) they pegged down the tent

There is nothing "wrong" about this running-together of similar sounds in connected speech, but it does mean that children do not hear what the teacher thinks they hear. For example, the context usually makes it clear if past time is meant:

(4) last night I watched the film

A native-speaker hearing such a sentence will "hear" the past tense ending even though it has not actually been sounded. A non-native-speaking child, however, may not realise that something is missing when he "hears":

4.3 We have had our reasons for believing that because of the "special form", the Singapore children's errors in the regular past tense marker are due to inadequate pronunciation, by both native and non-native speakers. This is a common, and important generalisation.

There were other reasons which appeared to be more important:

References


(5) last night I watch the film
After all, he has heard many commonly used verbs that do not change in the past tense:
(6) last night we put the chain on the door
(7) every night we put the chain on the door
In other words, what seem to be “grammar” errors in speech and writing may, in fact, be due to not “hearing” certain sounds, and therefore not producing them.

• This explanation, however, does not seem adequate to cover the high number of x he says, x she bring types of error. Why do Singapore children apparently find difficulty in “remembering” one of the most regular forms in English verb usage? From our experience in listening to our own students, both in the classroom as well as informal occasions, we have noticed that this same error occurs very frequently. It would seem, therefore, that we have a closed circle: the majority of primary school children who do not hear the correct usage (and practise it frequently) will continue to make this elementary mistake, especially and sometimes only in spoken language; later, as primary teachers they do not provide a consistently correct model for their pupils. It is common, for example, to hear both correct and incorrect usage in the same sentence by both pupils and teachers.

4.3 We have highlighted the preceding results (4.2) because of the high error percentage among the Singapore children as compared with the Samoan group, and because we feel that action by teachers on the lines suggested should produce a marked improvement in these very important areas of verb usage.

There were other patterns of incorrect usage which appeared only, or mainly, among the Singapore children. The main ones were as follows:

• Word order in statements: this was often associated with “translations from Chinese.”

(11) The apple got people eat one (= Someone is eating/has eaten the apple. Referring to pictures of an apple in sequence.)

(12) The leaf got the tree (= There’s a leaf on the tree. Referring to a picture)

(13) Glass can see through it. (= (I know it’s a glass because) I can see through it. Response to: “How do you know it’s a glass?”)

• Word order, and general uncertainty about the use of do/does/did in asking questions and making negative statements.

(14) Why she don’t know?

(15) “Grandma, why you have big teeth?”

(16) You live where?

(17) She usually go to school not in time (= she doesn’t go/get to school on time)

Such errors as those in sentences (11) - (17), however, did not occur with such frequency as those in (8) - (10), and were more likely to appear among the low scorers, that is, those whose overall performance placed them at the lower end of the scale.

Recommendations
The study quite clearly points to the importance of teachers-as-good-language-models and for them to be aware that some of the problems and difficulties of non-native speakers are different from those of native speakers of the same age. This study also suggests the necessity for modifications to and redistribution of some language items in the syllabus for English Language.

We also suggest a review of teaching time allocated to different language items. Also it would be desirable, especially for beginning teachers, to be given more guidance on the uses as well as the forms of the various items.

References


BOOK REVIEWS

A Review of Teacher Effectiveness Research in Africa, India, Latin America, Middle East, Malaysia, Philippines, and Thailand: Synthesis of results

Beatrice Avalos and Wadi Haddad
Ottawa: International Development Research Centre

Reviewed by Eng Soo Peck

The IDRC publication, “A Review of Teacher Effectiveness Research in Africa, India, Latin America, Middle East, Malaysia, Philippines, and Thailand: Synthesis of Results” represents a valiant attempt to search out and synthesise research works in developing countries to provide a more coherent base-line picture of the state of the art of teacher effectiveness research. The research review covers such diverse countries as India, Malaysia, Philippines and Thailand and others from Africa, Latin America and the Middle East. The main objective is obviously to stimulate discussion and further research in an area of top priority for the benefit of educational institutions and policy makers. The lesson learnt is that the problems of education systems cannot be resolved by multitudinous research into the area of teacher effectiveness if that research lacks a coherent defensible conceptual frame. The above notwithstanding, the Review serves the dual purpose of pulling together major works on teacher effectiveness in both developing (Chapter 2 to 4) and developed (Chapter 5) countries and of alerting researchers to the many pitfalls in research in this area of concern.

The synthesis of the many reviews in many countries is well thought out, systematic and informative in terms of the organisational format presented in the book. The mass of information provided boggles the mind and may detract rather than enhance its utility as a resource book for research in the area of teacher effectiveness. A more judicious selection of research works in teacher effectiveness, and more rigorous criteria for selection than that included in the review would certainly have given the review synthesis greater coherence and shape. Certainly, it would have enhanced the readability of the book if attempts had been deliberately made to highlight significant variables and studies and to rigorously exclude studies of dubious value either in terms of design or statistical analysis.

For readers interested in knowing what makes a teacher effective Chapter 2 makes for frustrating reading. The myriad number of variables and events included in the hundreds of studies reviewed which are presumed to predict effectiveness turn out to be inconclusive. Presage, process, situational and outcome variables cited appear to have been thrown into studies without proper a priori empirical or theoretical support. Sex, age, personality, socio-economic factors, ability, language of instruction, knowledge of subject, teacher attitudes, school system, experience and training and a host of others were all possible candidates as predictors of teacher effectiveness. Not surprisingly, the results are not conclusive.

Chapter 3 is perhaps the key to understanding how much importance one should attach to the research findings reported in Chapter 2. Flawed research design and the use of relatively simple and inadequate statistical techniques cannot be expected to yield any useful conclusions whether they are positive or negative vis-a-vis variables presumed to have a bearing on teacher effectiveness. It points out, quite rightly, the sorts of untested assumptions made in the research works reviewed. If women are more satisfied than male teachers, does it mean that women make better teachers than men? What has job satisfaction got to do with teacher effectiveness? Is the leap from satisfaction to teacher effectiveness justified? However, more useful than any other section is the suggested areas of research that the teacher effectiveness researcher must address if he is to reach any definitive conclusion.

Chapter 5 deals with research results and findings in the current literature that synthesises the state of the art for further research. It concludes by calling for further research over a period of time.

Perhaps the authors are somewhat stream thinking on teacher effectiveness. What may have been missing in the book is addressing the very existential nature of teacher effectiveness. The term teacher effectiveness as used in the book has in many instances a very narrow connotation.
in the current literature. It is a useful summary of the state of the art and provides the spring-board for further research questions to be addressed. It concludes by calling upon researchers in developing countries to carry out studies of a more complex nature, incorporating assessment of effects over a period of time.

Perhaps the authors cannot help but follow mainstream thinking of the subject of teacher effectiveness. What may be overlooked is the problem of addressing the wrong questions about teacher effectiveness. The tendency to say that effectiveness is sex, age, class, subject, situation, principal and children specific would render that body of research incredibly complex and render it useless in terms of policy relevance. Are there not generic classes or patterns of behaviour that are effective in terms of pupil outcomes, irrespective of sex, age and other factors? Are we looking at the criterion variable of effectiveness with the wrong lenses? Are we expending inadequate effort in conceptualising on teacher effectiveness and rushing headlong to gather empirical evidence for we-know-not-what as the dependable variable?
Higher Education in the Third World: Themes and Variations

Philip G. Altbach
(Distributed by Maruzen Asia Private Limited)
228 pp. (paperback).

Reviewed by Matthew Zachariah

All of the essays in this volume — except the introductory chapter, "Themes and Variations" — have appeared in scholarly journals and other books. Only one essay "The Dilemma of Success: Higher Education in Advanced Developing Countries" by Altbach and S. Gopinathan was revised and expanded for inclusion in this volume. The eleven reprinted essays span twelve years and deal with five major themes: problems of reform in expanding university systems, especially in India, Kuwait, Singapore and Malaysia; student movements, particularly student activism in Asia; the crisis of the professoriate, specifically in the city of Bombay; the maldistribution of knowledge in the world as evidence of the continuation of colonialism and the effects of such neocolonialism on economically poor countries in the southern hemisphere; and, the application of "centre-periphery" analysis to the study of universities. The collection serves to remind one of Altbach's excellent familiarity with the entire range of issues in higher education. He pioneered in America the study of the effects of mass higher education - does not throw much light on the historical development of American higher education - does not throw much light on the development of higher education in Asia, Africa and Latin America. For instance, India had over three million students in its institutions of higher education in 1950.

Socio-economic facts reveal that the Third World is characterized as either "poor" or "wealthy".

The "Centre-periphery" concept, called the "Third World", is based on Martin Trow's typology of "elite", "mass" and "universal" access to higher education. This typology — based mainly on the historical development of American higher education — does not throw much light on the development of higher education in Asia, Africa and Latin America. For instance, India had over three million students in its institutions of higher education in 1950. Socio-economic facts reveal that the Third World is characterized as either "poor" or "wealthy".

The "Centre-periphery" concept, called the "Third World", is based on Martin Trow's typology of "elite", "mass" and "universal" access to higher education. This typology — based mainly on the historical development of American higher education — does not throw much light on the development of higher education in Asia, Africa and Latin America. For instance, India had over three million students in its institutions of higher education in 1950. Socio-economic facts reveal that the Third World is characterized as either "poor" or "wealthy".

The "Centre-periphery" concept, called the "Third World", is based on Martin Trow's typology of "elite", "mass" and "universal" access to higher education. This typology — based mainly on the historical development of American higher education — does not throw much light on the development of higher education in Asia, Africa and Latin America. For instance, India had over three million students in its institutions of higher
education in 1979-80. Close examination of the socio-economic backgrounds of these students will reveal that the Indian system cannot be characterized as either "elite" or "mass".

The "Centre/Region/Periphery" — sometimes called the "Metropolis-Hinterland" — perspective that Altbach uses has much validity and value. Among other things, it calls attention to the international structural limitations (imposed by the rich, powerful Western nations) within which non-Western nations must formulate policy options in major matters of trade, finance and commerce. His — and my own — use of this perspective, however, points up some of its weaknesses, especially when one tries to apply it to education.

One significant weakness is that the relationship between the more powerful and less powerful nations (or peoples) is discussed in terms of the epistemological categories set up by the more powerful people. Let us take Altbach’s use of the term “knowledge”. Altbach clearly implies that knowledge is that which is consciously produced, codified, cumulated, published and distributed in books, journals etc. in a form that some consumers as well as other producers of knowledge can get and possibly use. Such a definition is much too narrow; it ignores those informal knowledge formulation and accumulation processes based on a person’s or group’s (real or imagined) perception of what is important for well-being. If one has this sort of understanding about the nature of knowledge creation and modification, statements such as "knowledge has no national boundaries" (p. 45) or that "Third World" universities cannot be expected to produce major research discoveries (pp. 55-56) make very little sense. Also, one is astonished by the assertion in a 1981 essay that “Despite... massive investment in science, India has little chance to develop scientifically at an international level” (p. 57), since a satellite made in India is orbiting the earth and computers made in India are successfully making inroads into Western markets.

Another limitation of the "Centre-Periphery" perspective is that it is rather insensitive to the manner in which a living culture modifies a foreign invention, language etc. Altbach makes much of the fact that European languages are still the languages that are not well-known to Western scholars does not reduce its contributions to the development of Kerala’s culture. (Readers whose minds have been much too poisoned by the “modernization literature” may find Marvin Harris’s book Culture Materialism: The Struggle for a Science of Culture (New York: Random House, 1979) a good antidote).

According to academic folklore, a professor reprints his essays in a book only in the evening of his scholarly career. Altbach is much too young to belong to that category. He has many years in which to make important contributions. To do so, he may want to consider abandoning the notion of a world hierarchy of higher educational institutions that is essential to the centre-periphery perspective. To liberate themselves and to play a genuinely useful role in the cultural development of their societies, universities in Asia, Africa and Latin America need less of “a clear and realistic appraisal of [their] international and regional context” (p. 62) and more of a clear appraisal of their role in the local context. Altbach may also wish to make fewer references to his own previous published work and more references to the work of others in his field. I, for one, look forward to seeing more original work from this prolific author.

1984 VOL 6 NO 1 - 57
The terms *cloze procedure* and *cohesion* are associated with reading development. Specifically, cloze applies to the testing and teaching of reading while cohesion applies to a description of how the way in which reading material is written can affect reading development. Two books have been published recently dealing with both of these topics in detail.

The first, *Cloze Procedure and the Teaching of Reading*, provides a comprehensive analysis of cloze including its original conception by Taylor in the 1950's as well as its present day possibilities for use in reading, testing and teaching. Rye, an English teacher in England, sets out to provide other English teachers with a readable, useful guidebook. The few technical terms included are defined in a glossary.

Rye builds a plausible case for using cloze by presenting the benefits and pitfalls of cloze as well as some alternatives such as readability formulae for measuring text difficulty and standardized tests for measuring pupils' ability. To demonstrate the severe limitations of the former alternative he states that the Spache Readability Formula was developed in 1953 using a word list dating back to 1931. Unfortunately, he presents an unfair picture or as a stimulus for aging reading formulae for testing purposes Rye includes sample class results to show how teachers can interpret and utilize their pupils' scores. He describes in detail how error analysis can be used to diagnose reading problems by means of a simple error classification system. Various teaching strategies are suggested for remedial instruction.

Rye does not ignore the possible difficulties arising in using cloze and he stresses that cloze results should not be used to make critical decisions about individuals. He lists the following as beneficial uses of results: dividing classes into smaller, more homogeneous groups; identifying the poorer readers and their problems; comparing overall reading ability of one class to that of another class by giving the same pupils a cloze test from both books and statistically comparing the results (the formula and an explanation are included in an appendix).

In addition to testing, the benefits of using cloze for developing reading strategy is not ignored. The author includes discussions of part-whole relationship of word, sentence, and paragraph and their referential relationship to the reader's prior knowledge. He relates the process of reading to book than *Cloze Procedure* and more reading development plays in this complex whole. The first section from reading as a form of communication, or as a stimulus for learning is discussed.

The first section on cloze procedure, the role of readers and the effect of the author's intention in the readers' prior knowledge of English and their reading tactics, the relationship of words, sentences, and paragraphs, and their referential relationship between words and the reader's prior knowledge of the text. Chapman describes how to use cloze results to indicate knowledge areas that need development. He stresses the importance of assessing both readability and reading ability in order to provide pupils with reading materials which are challenging enough to encourage the development of reading skills without being frustrating enough to block motivation—a delicate balance.

Finally, the use of high efficiency quizzes and standardized tests for measuring text difficulty, doze procedure measures the actual interaction between the reader and the text with the bonus of providing information about the reader's ability.

Rye also presents convincing evidence — without overwhelming the reader with unending research statistics — that cloze results correlate sufficiently with standardized comprehension tests (from .73 to .84) to be considered a reasonably valid and reliable teacher made instrument for measuring comprehension ability. He stresses the importance of assessing both readability and reading ability in order to provide pupils with reading materials which are challenging enough to encourage the development of reading skills without being frustrating enough to block motivation—a delicate balance.

In his descriptions of how to use cloze effectively for testing purposes Rye includes sample class results to show how teachers can interpret and utilize their pupils' scores. He describes in detail how error analysis can be used to diagnose reading problems by means of a simple error classification system. Various teaching strategies are suggested for remedial instruction.

Rye does not ignore the possible difficulties arising in using cloze and he stresses that cloze results should not be used to make critical decisions about individuals. He lists the following as beneficial uses of results: dividing classes into smaller, more homogeneous groups; identifying the poorer readers and their problems; comparing overall reading ability of one class to that of another class by giving them the same cloze test; providing an approximate rank order of a class; comparing one textbook to another by giving the same pupils a cloze test from both books and statistically comparing the results (the formula and an explanation are included in an appendix).

In addition to testing, the benefits of using cloze


58 • SINGAPORE JOURNAL OF EDUCATION
for developing reading ability are described. The author includes transcriptions of actual group discussions of particular cloze passages, illustrating how pupils process their ideas, developing higher level comprehension skills by reasoning out their choice of responses. In this non-testing situation, Rye stresses the importance of selecting passages of interest to the pupils, passages which they would want to discuss. Other factors of passage selection and preparation are reviewed also, such as position of word deletion, frequency of deletion, length of available context, all of which are factors of difficulty.

Finally, the usefulness of cloze procedure as both a teaching and testing tool in other curriculum areas is discussed. Such passages can be manipulated to indicate knowledge of a particular subject area or as a stimulus for discussion, in both cases encouraging reading for meaning. Rye includes examples from biology, French, geography, and literature and he suggests its usefulness in almost any subject area.

**Cloze Procedure and the Teaching of Reading** is a useful book for reading and content area teachers at all levels. It provides both descriptive and practical information about cloze in a readable, organized manner, written from a practising teacher’s point of view.

**Reading Development and Cohesion** is less a how-to book than **Cloze Procedure and the Teaching of Reading** and more a description of the complexity of reading development and the part cohesion plays in this complexity. The book is divided into three main sections.

The first section covers the change of emphasis from reading as a code cracking process to reading as communication, or the reader’s reconstruction process of the author’s message. It also deals with the close relationship between the reading process and the reader’s prior knowledge of both the systems of English and the world.

Chapman describes three areas of language: “syntax, the relationship between words in sentences; semantics, the relationship between words and their references; and pragmatics, the relationship between words and the way they are used.” He stresses that the majority of successful schoolwork depends on the pupils’ awareness of these three areas and that too frequently pupils are not taught explicitly about them. Also neglected are other factors relating to language ability such as varieties of language in speech and print, the register of instruction, the themes of stories, and different types of text and cohesive system. Such neglect deprives pupils of useful language clues which aid in reading fluency.

In the second section, Chapman describes the specific characteristics and functions of cohesive ties following the proposals of Halliday and Hasan in their work *Cohesion in English* (1976). Five cohesive systems are presented in detail: the reference system, including personal, demonstrative and comparative references which Chapman considers to be the most important aids to fluent reading; the substitution system including, *a, one, ones, some, the same, do, so and not*, among the most frequently occurring words in English but which link words and clauses in complex ways; ellipsis, by which redundant words and phrases are omitted from the text; conjunctions connecting pairs and groups of ideas through addition, contrast, time sequence or cause and effect and flexical cohesion or the author's choice of vocabulary to build up relationships of words through synonymy (sameness), antonymy (opposition), or hyponymy (classification).

To clarify these five systems, Chapman has included examples and diagrams from Halliday and Hasan. He also has suggested some activities which teachers could use to make pupils aware of these aspects of text cohesion. He devotes an entire chapter to the use of cloze procedure for this purpose and agrees with Rye that cloze is a valuable tool for the development of inferential and predictive skills as long as pupils are encouraged to think out and discuss the reasons for their responses.

In the third section, Chapman summarizes the ideas already put forward, that reading is basically a process of communication and that comprehending is a constructing process involving awareness of the cohesive systems and varieties of language. He suggests that his book is only a preface to these concepts and serves as a jumping off point for further study.

Unlike Rye who writes for the average classroom teacher, Chapman assumes a “minimum level of linguistic knowledge” of his readers. Without this prerequisite knowledge the average classroom teacher will find his book of limited practical value. However, for those who are interested in pursuing the topic, **Reading Development and Cohesion** provides a comprehensive introduction.
This book is a welcome and valuable addition to the very skimpy literature on the use of national non-Western languages in institutions of higher education. It contains 34 papers delivered at the Fourth Conference of the Asian Association on National Languages (ASANAL) in April 1977, where the theme of national languages in higher education was extensively discussed.

The topic of this volume is important, and the issues have wide-ranging cultural, political, and intellectual consequences. Countries such as India, Sri Lanka, Indonesia, the Philippines, and Malaysia are all extending the use of their national languages in higher education. The policy decisions have been taken, but comparative educationists and linguists know little of programmes implemented, difficulties encountered, and solutions that are being discussed and attempted. Much of the literature that deals with the use of indigenous languages in education deals with issues at the primary level. While a wealth of material on general language-pedagogy relationships exists for Western countries such as Canada and Belgium, *National language as Medium of Instruction* is perhaps in first that offers a collection based on Southeast Asian educational experience.

The book is divided into eight sections, among them, “Language as Medium of Instruction”, “Language Intellectualization”, “National Language and Terminology”, “Teaching the Various Sciences in the National Language”, and “Role of Literature and Mass Media in the Development of the National Language”. The papers touch on the issues confronting a variety of languages — Bahasa Malaysia, Bahasa Indonesia, Filipino, Thai, Vietnamese, Tamil — though the core of the papers deal with the experiences of the Malaysian and Philippine national languages. They address such issues as the process of language intellectualization in Bahasa Malaysia and Filipino, the problems of using national languages in teaching social and natural sciences and law, the problem of word counts in languages undergoing standardization, and national language implementation policies. The volume also contains several interesting case studies of actual problems encountered in teaching various disciplines in the national languages.

Three papers address a fundamental issue: Can a language not used extensively for science and technology be so developed and legitimated as to be able to serve as an effective vehicle for teaching and research in science? A paper by Asmah Haji Omar discusses the process of intellectualization of Bahasa Malaysia and reveals how the evolving sentence structure for scholarly discourse shows the strong imprint on English. She makes the obvious, if necessary, point that language development occurs when new demands are made on the language. In a paper on the Philippine situation, Perez details the disciplinary areas in Philippine higher education where a national language has been used; of particular interest is the use of Filipino as the medium of instruction in the University of the Philippines, and Perez notes a large number of translation and original works in psychology written in Filipino as a consequence.

Several other papers deal either explicitly or implicitly with language planning. These offer some comparative data for students of language planning, for both the Philippines and Malaysia are in transitional state. If one accepts Haugen’s paradigm of new-word creation by-case approach to the creation of the one could have some complaints of a non-coherent approach. Several case studies of actual problems encountered in teaching the national languages at the University of the Philippines, and Perez notes a large number of translation and original works in psychology written in Filipino as a consequence.

Tamil, there is no other language having a colonial imprint like the negative stigmas of a phobic neurosis regarding the creation of new words. A case study of the situation in Indonesia illustrates this point.

Valuable also is the amount of detail and the conclusions drawn. Awang documents the history of language education arising from colonial education and suggests the teaching of *episodic teaching* and *teaching for the record* lectures. He gives a paper on the use of places names in geographical instruction from Indonesia as well as from the Philippines. Noer Teogimaran’s paper on the intellectualization of the national language in Indonesia is one of the most interesting in the volume. He notes a large number of translation and original works in psychology written in Filipino as a consequence.

Underlying all the new-word creation is the other, the ensemble of the enormous materials in the various
Tamil, there is none on Chinese. The paper on Thai makes the point that, while one consequence of not having a colonial history is freedom from "xenophobic neurosis", the negative consequence is that new-word creation occurs through an ad hoc, case-by-case approach. In Malaysia, too, where with the creation of the Dewan Bahasa dan Pustaka in 1957 one could have assumed systematic and comprehensive word formation and standardization, one finds complaints of a lack of adequate terms, a lack of coordination with the universities, and as a consequence the setting up of independent terminology service units within the several universities.

Valuable also in this collection is the richness of detail and the close consideration given to pedagogical consequences of language decisions. Amir Awang documents the consequences for teacher education arising from the use of Bahasa Malaysia and suggests the following as solutions: prepare and compile lecture notes as monographs and to tape record lectures for subsequent use by students. A paper on teaching geography explores in detail the use of places names in Bahasa Malaysia as sources of geographical information. Two interesting papers from Indonesia deal with literature and sociology. Noer Teogiman's paper explores the parallel development of the national language and national literature in Indonesia and raises the point about using a literary language as the standard for the national language.

Underlying almost all the papers is an acceptance of the enormous problem posed by a lack of materials in the various national languages and the many complex linguistic and practical considerations that even a modest programme of translation demands. Nik Abdul Rashid, faced with the prospect of 98 percent of legal literature being in English and the continued reporting of cases in English, accepts the need for high levels of bilingualism among students and faculty. Abdullah Hassan estimates the financial costs of implementing the Bahasa Malaysia decision at the school and tertiary levels, while the authors of the paper on geography teaching note that, with a specializing terminology exceeding 7,500 terms, geographers of different nationalities are adding new words and concepts into geographical discourse. Finally, the paper by Smith looks at the problem of meaning change that often arises when an attempt is made to translate a concept. His proposal for more effective sociology teaching in Indonesian universities is a programme to supply Indonesian glossaries and lexicons for the materials in English, building up terminological banks that will go further than previous attempts to provide translations of specialized terms and will deal with concepts and situational comparison. "The final objective must be to create an Indonesian language for each of the social sciences so that English materials become a source for useful comparisons rather than a source for concepts which may be culturally-bound or irrelevant."

This review is but a partial account of the ideas, solutions, and data in National Language as Medium of Instruction. It is a volume that deserves a wide and diversified audience of comparativists in education, pedagogy, and linguistics, not to mention planners and politicians.
The sub-title of this compact monograph is "A Case for Religious Education." This might prompt the reader to suppose that a range of curriculum justifications was going to be advanced, some appealing to a preferred concept of education, others to cultural value and heritage, and so on. This is not the author's intention. As the main title indicates, Dr. Tan is beginning further back by investigating the epistemological standing of religious knowledge, on the assumption that a "truly liberal education" (p.1) must at least include the promotion of rational understanding. The bulk of this study is therefore straight philosophy, a form of analysis at which Tan shows himself to be a master.

Education is not a discipline but a field of professional practice. Educators are therefore always in something of a hurry to decide what needs to be done and to get on with the job. The temptation, when encountering an area like religious studies, which is characterised by wide differences of opinion, is to put it in the too-hard basket and carry on with other things. Unfortunately, this attitude has the effect of skewing the curriculum towards means rather than ends, the technological rather than the humane. The result is a tacit endorsement of the one-dimensional preoccupation of industrial society with consumerism and short-term material satisfactions, bringing in its wake alienation, boredom and a certain callousness of spirit. Tan's "case" runs against this tide.

At the same time, it is not a complete case. It moves within the framework established by P.H. Hirst, which justifies certain curriculum inclusions on the grounds of their intrinsic worth as "forms of knowledge". Amongst these forms Hirst lists religious knowledge, but there are those who deny that religious "truth"-claims are in the knowledge domain at all. It is this allegation which sets the agenda for Tan's study. Even if we find Hirst's "forms of knowledge" notion inadequate, as many do, the epistemological enquiry has point, for it affects the kind of curriculum subject we deem religious studies to be, if we let it in the first place. Tan's limitation of focus should therefore be welcomed rather than regretted, because this issue is such a fundamental one.

As a good philosopher, Tan puts no more weight on his arguments than they are logically bear. In the end he does not claim to have proved that religious knowledge is established as true, but only that it is conceivable and provides "initially plausible insights and conjectures" (p.1). This finding may appear unduly modest, in the light of the evidences that so methodically marshals, but it is consistent with his opening argument boldly asserting that a curriculum confined to domains of established truth would be very stultifying. To exclude "genuine and interesting hypotheses" would, he argues, stunt the very growth of knowledge as such. Tan therefore walks a knife-edge between claiming too much and too little for the evidential data and language of religion; and he keeps his balance well.

Part One tackles the question of whether religious language is actually intelligible: that is, whether it can yield any meaningful propositions at all. Tan knows his sources well and handles them authoritatively. By accepting Puccetti's insistence that a religion is the "entire tradition from its founder up to the present" (p.16), Tan gives himself the advantage of being able to reject beliefs in particular religions which hinder his quest for a set of universal religious affirmations. He is thus able to side-step many of Puccetti's objections, but it may be queried whether this move is necessary to his case. In the final section of the book, in fact, Tan concedes that a "syncretisation of different religions would be another religion itself" (p.101). This weakens his earlier argument that an encounter with extra-terrestrial persons would not cause essential discontinuity with previous religious rationales. I also find his attempt to recruit the rationalist camp (pp.55) unnecessary, for it needs this argument to sustain Hirst. One upholds religious claims, against death, suffers ripostes. Part Two offers evidences. His knock-down arguments establish the consensus that if this be the case of those communicative sufficient interests specific experiences personal experiences, and considerable doubts with both fundamental Hick, Flew and his.

His conclusion is: when he claims teaching "relativist explanatory principles" are sufficient to preferred him, are holistic ethical ones, but this...
recruit the non-theistic religions into the theistic camp (pp.55) unconvincing, but I don’t think he needs this argument, or this kind of religious universalism, to sustain his main thesis. In general, Part One upholds the intelligibility of religious truth-claims, against opponents in debates on life after death, suffering, and free will, with plausible ripostes.

Part Two turns to the more substantive area of evidences. Here again, rather than striving for a knock-down argument, Tan aims simply to establish the conceivability of religious claims, confident that if this be conceded, then the inherent significance of those claims — which affirm a Deity who communicates — will ensure that they generate sufficient interest. In this Part, he discusses miracles, special experiences, and attestations from the personal experience of believers. Tan continues to show considerable independence of thought in dealing with both friends and foes in these debates, not daunted by the reputations of philosophers such as Hick, Flew and MacIntyre.

His concluding remarks are therefore warranted, when he claims to have set forth good grounds for teaching “religion in a liberal curriculum as a viable explanatory possibility, like the way we teach interesting scientific hypotheses” (p.101). I would have preferred him to say “scientific models,” for these are holistic explanations at the same level as religious ones, but this is a minor quibble. The paragraph tails off with some rather uncertain remarks about Tan’s willingness to accept curriculum strategies to accommodate religions without attempting any synthesis, but the book does not stand or fall on these minor sorties into the realpolitik of secular curriculum process.

A more important criticism is that Tan may be under-estimating the coherence of the religious tradition he chooses as his illustrative case-study, i.e. Christianity. He seems to want to follow Hick into an allegedly more defensible universalism (e.g. p.26) though aware at a later point that many in this same liberal Christian camp have been excessively reductionist. Conversely, he is less than fair to more orthodox Christian apologetic when, having endorsed Wallace’s use of the term “fundamentalist” for a certain kind of rigid literalism (p.18), he then applies the adjective to so intelligent a thinker as C.S. Lewis (p.101). One does not have to flee to Hick to escape Puccetti. In fact, in defending the logical possibility of miracles, Tan is closer to Lewis and orthodox Christianity.

In summary, the main case is persuasively set forth, and obliges curriculum developers to look to their epistemological foundations. There is much need for good philosophy in this area, given the too long reign of positivist epistemologies. Dr. Tan’s book deserves to run to a reprint, which I hope it does, because my present poorly sewn copy is already coming apart.
Notes for Contributors
1. The Singapore Journal of Education provides an avenue for publication of essays, research findings and critical comment in any of the major fields of educational study.
2. Two copies of manuscripts for consideration should be sent to the Editors. Authors should retain a third copy for their own reference during proof reading. Copies submitted will not be returned.
3. While articles should not normally exceed 5000-6000 words, longer articles may be accepted in special circumstances. Shorter research reports in which the introductory material (e.g., review of relevant literature) is cut down to a minimum may be acceptable.
4. Manuscripts should be accompanied by a short abstract (about 100 words) typed on a separate sheet of paper.
5. Manuscripts should be typed with 1½ or double spacing throughout on one side of A4 paper with reasonable margins (2 cm all round).
6. Do not underline any words in the text unless they are to be printed as italics.
7. Where tables are to appear with the article, type each table on a separate sheet with as few rules as possible, and indicate the placing of the table in the text with a pencilled note. Use wide spacing in tables and rule all lines in pencil. Tables should be numbered in Arabic figures with a clear legend to identify the tables.
8. Drawings (graphs, figures, etc.) should be on good quality white paper in Indian ink and on separate sheets. Illustrations or figures for reproduction should be about 50 per cent larger than the final size required.
9. Footnotes should be kept to a minimum. If it is absolutely necessary to have one or two footnotes, indicate with an asterisk. Where there are many notes to the text, number from 1 upwards and indicate the location of each in the text by a superscript numeral. Type the complete numbered set of notes on a separate sheet and attach to the end of the manuscript, along with the separate sheets for tables and drawings, etc.
10. References should normally be indicated by citing in parentheses the author’s surname and the year of publication as given in the list of references or the bibliography at the end of the article. For example: ‘it has been argued (Chase, 1935, p. 66) that’ References at the end of the article are to be arranged alphabetically by author’s surname. Particular attention should be given to the sequence of the items in the reference and to the punctuation. The following examples will serve as a guide:
Note that in the second example there are no inverted commas around the title of the article, nor are the words in the title capitalized (as they would be for the title of a book — see first example). Please underline titles of books and journals.
11. Manuscripts for the July issue of the Journal should reach the Editors by early January and for the January issue by early June
12. The Editors reserve the right to make editorial alterations or deletions to articles without consulting the author(s), so long as such changes do not materially affect the substance of the article.
13. Authors receive 3 complimentary copies of the Journal.