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The Social Organisation of Schools: A Multi-Level Perspective

Ho Wah Kam

The ten articles in this special issue of the *Singapore Journal of Education* were initially presented as papers, among a number of other research-based presentations, at the First Annual Conference of the local Educational Research Association on 5 and 6 September 1987 under the general theme of *Research In the Service of Educational Excellence*. Other papers not included in this issue, owing to a lack of space, dealt with research in language education, science education and teacher education as well as innovative approaches to teaching, which were presented under different sub-themes at the concurrent panel sessions. There was also a very stimulating panel-cum-workshop on Pupil Problem Predisposition, based on research data presented by Dr Sim Wong Kooi.

The principal objective of this Conference, which was to provide a forum for researchers in Singapore to present and discuss their work, was fully achieved. Additionally, with the active participation of a large number of senior staff from the schools, the Conference served as a crucial dissemination point for the research presented.

A special feature of this Conference was the participation of four scholars from the region, who are members of the Southeast Asian Research Review Advisory Group. Dr Minda Sutaria, Under Secretary for the Department of Education, Culture and Sports from the Republic of the Philippines, delivered the keynote address, while Dr Pote Sapianchai (Thailand), Dr Moegiadi (Indonesia) and Rev. Dr Ramon C. Salinas (Philippines) made

presentations on different topics under the rubric of Research on Asean Education. Dr Sutaria's keynote address on the theme of the Conference is included in this issue and is a fitting introduction to the nine articles which follow. The thrust of the keynote address is, in Dr Sutaria's own words, "The [research] message must lead to action", and drawing on her experience in the Philippines, she explained how the message from one research project was 'transformed' into successful action in the schools.

Since it is in the schools that the most fruitful action can take place, it was decided that instead of having a random selection of papers from the different panel sessions, this issue should focus on three of the sub-themes of the Conference, viz. *Principals' Leadership Behaviour*, *Teacher Morale and Job Satisfaction*, and *Pupil Self-Concept and Achievement*, under the general rubric of the Social Organisation of Schools. The nine papers presented under the three sub-themes were based on the master's dissertations of the respective authors, successfully completed in the last three years. Collectively the research reports constitute a rich data source on the social system of schools in Singapore.

In writing about schools as workplaces, Corwin and Borman (1988) refer to the three dimensions of work in schools as (a) the administrative context of work, (b) the occupational structure of teaching and (c) the classroom as a social system and work setting. This perspective may be described as *multi-level*, which according to Bossert (1988) has the

advantage of shifting "the focus of research on organisational outcomes away from the morphology of the school to the production processes themselves" Corwin and Borman's characterisation of the school's social system aptly covers the three sub-themes that together serve as a useful conceptual framework for the collection of articles in this issue.

Despite the fact that the sub-themes appear to deal with differentiated organisational levels, the main focus is really on the *productive* processes in a school and how they fit into the larger pattern of things. As Barr and Dreeben (1983) have noted in their important study of how schools work, "It would be a strange organisation indeed if the parts were hermetically sealed off from each other; if, for example, what the *principal* did had no bearing on what *teachers* did and if what *teachers* did made no difference for what *students* did and learned. Yet it is precisely the failure to come up with satisfactory answers to these questions that has caused so much grief in our understanding of educational effects. The answer must come from identifying correctly what the activities are and from being able to trace their antecedents and effects across pathways that connect one level to another" (*italics added*).

In different ways, the nine articles do try "to trace their antecedents and effects", as Barr and Dreeben have put it. And when the articles are read together, the point seems clear that productive events can take place at different levels of a school organisation (Barr and Dreeben). Each article, in turn, draws attention to the implications for *linkages* between levels.

The thrust of each article is described briefly here. At the level of *principals*, Lim Soon Tze (p. 9) set out to determine whether the most effective principals have personality traits and leadership behaviour patterns different from those of principals judged to be less effective, while Ee Chye Heng (p. 18) examined the relationship between the educational attitudes of teachers and their perceptions of the leadership behaviour of their principals. Mok Siew Ming (p. 23), in examining the extent of *conflict and ambiguity* the principal faces in his role, confronted the question of whether the principal is able to match his actual performance of tasks with his own aspiration (i.e. desired per-

formance) as well as the expectations of school inspectors. Mok Siew Ming found that principals in the sample experienced ambiguity in the 'major areas of their work', and that there were statistically significant differences in the same principals' perceptions of the importance of their tasks in relation to their *actual, ideal* and *expected* roles.

At the level of *teachers*, Cheong Heng Yuen (p. 30) examined the job satisfaction of a sample of teachers in relation to the principals' leadership behaviour, defined by two critical dimensions, viz. *consideration* and *initiating structure*. On the major research question, the finding was that teachers who regarded their principals as being 'high in consideration and initiating structure' were more satisfied with their jobs than those who saw their principals as being low on the same dimensions. The motivation of teachers and their commitment to the profession should constitute another important area of study, and so Lim Han Soon nee Goh (p. 36), using theoretical principles developed by Herzberg and a questionnaire she adapted, successfully identified different groups of teachers (e.g. 'high motivation seekers' and 'low motivation seekers') who clearly showed different levels of professional commitment. The important variable of teacher morale was studied next by Ruth Wong Yeang Lam (p. 41), and correlated with school climate. On the whole, teachers' responses on the school climate sub-scales were found to be able to predict fairly well the levels of teacher morale.

Much work concerning the productivity of schools has been done at the level of *pupils*. A large number of factors have been studied, among which is the nature of the learning environment, which has been used either as an independent or dependent variable. Using this factor as an independent variable, the two studies by Daulath Tajuddin (p. 46) and Ng Gek Tiang (p. 52) make a useful distinction between *classroom-level* environment and *school-level* environment, each of which would involve relationships, interactions and perceptions at a different level of the school organisation. Classroom environment was one of three major variables studied by Daulath Tajuddin in her research, the other two being academic self-concept and academic achievement.

While the relative effect of a school's social climate was a major factor of interest in Ng Gek Tiang's study, she also investigated the relationship between academic self-concept and academic achievement. In the context of these two studies (Daulath Tajuddin and Ng Gek Tiang's), both of which used Brookover's (1979) Self-Concept of Academic Ability Scale, the term 'academic self-concept' refers to those beliefs that subjects had about themselves as learners in school settings, and it was assumed that a pupil's attainment at school could well benefit from the improvement of his or her academic self-concept. In turn, taking a completely different setting, Khoo Pee Ying (p. 56) examined the relationship between the self-concept (measured by another instrument) of polytechnic students and their academic achievement. She found a positive and statistically significant correlation ($r=0.23$, $p<0.001$) between self-concept and achievement; so did Daulath Tajuddin and Ng Gek Tiang in their separate studies based in primary schools, which reported correlations by school ranging from 0.18 to 0.49, which suggested that school membership would make a difference to the extent of the relationships.

The nine studies reported on here were conducted in the empirical tradition, using largely statistical tools to capture, objectify, understand and explain the phenomena observed. They certainly represent a fruitful line of inquiry, underscoring a certain logic and coherence in the way the phenomena have been analysed and explained. And it is also to the credit of the authors that in each case implications for practice have been systematically teased out. The linkage between ideas and practice is therefore carefully established.

This *multi-level* perspective of a school's social organisation and the *linkages* between the organisational levels should lend further support to lines of inquiry that try to examine the interdependencies within a school that help shape the performance of teachers and the achievement of pupils. Despite the 'loosely-coupled' concept as applied to schools, it seems logical to suggest that in assessing the *total productivity* of a school, one should take into account all the productive events that occur at each level of a school organisation, which

cumulatively should have a strong impact on pupil achievement.

The articles are complementary in many ways, and should be read and discussed. Collectively they reflect the variety of research that has been completed on topics related to the organisation of schools. As I have said on another occasion in the *Singapore Journal of Education*, with particular reference to language education research in Singapore, much of this work remains to be systematically disseminated and used. Utilization is crucial. Dr Sutaria made a similar assertion in her keynote address when she said, "To put research in the service of educational excellence, it is imperative to emphasize not just the conduct of research but its utilization as well." For this reason, readers are encouraged to read the dissertations, deposited in the Institute of Education Library, for the richness of detail in terms of data and argument.

Finally, I would like to express my gratitude to the authors for their contributions and also for their kind and very constructive responses to editorial suggestions. It was a pleasure working with them.

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Research in the Service of Educational Excellence

Minda C Sutaria*

In the past decades, most developing countries largely addressed their efforts and resources to the democratization of access to educational opportunity particularly at the elementary school level. In recent years, as student participation rates steadily increased, attention gradually shifted to the pursuit of quality or educational excellence without sacrificing equity.

The notion nurtured by one school of thought that equity and quality make strange bedfellows has given way to the more progressive idea that educational excellence can be achieved alongside equity. We in the Philippines subscribe to this idea, thus one important thrust of our education today is equity of access to quality education at all levels.

Educational excellence need not be an elusive goal where equity is an important concern, but how it can be achieved together with equity where educational resources are scant, as in developing countries, is a mind-boggling problem. If viewed in the same manner in which the four blind men in the famous, old Hindu tale perceived an elephant, the problem of achieving educational excellence will forever be elusive of solution.

You will recall that in this tale, the four blind men had an almost unending argument on the kind of animal the elephant was because each one had mistaken one of its parts for the whole. One man who touched and felt its trunk thought that the animal was like a huge python.

Another man who slid his fingers on its large ear insisted that it was like a giant fan that could sway to and fro. The third man thought that the animal was like a wall as he felt its sides. The fourth man insisted that it was like a tree as he felt one of its legs planted firmly on the ground.

How often have some of those in education behaved like these four blind men and contributed to the retrogression of the system in which they work rather than to its progression along legitimate goals. The naivete and short-sightedness manifested by these blind men have a parallel in the myopic view of recurring educational problems that tends to be taken by policy-makers, planners and practitioners bereft of the illumination that research can provide. As a consequence, pervasive problems are often approached in less scientific ways like the use of hunch and intuition, previous experience, common sense and gut feeling resulting in trial and error solutions.

It is likely that where educational policy and programme formulation and implementation are not guided by research, there is needless shooting in the dark, resulting in unnecessary waste of effort, money and time which developing countries cannot afford.

The problem of achieving educational excellence is multifaceted and complex, but it does not defy comprehension and solution. There is an emerging thought that we can solve any problem by subjecting it to a deliberate, well-planned and sequential set of analytical procedures characteristic of the scientific method which has come to be known as research.

To put research in the service of educational excellence, it is imperative to emphasize not

* Dr Minda C. Sutaria, Under Secretary for the Department of Education, Culture and Sports, Republic of the Philippines, delivered this keynote address at the ERA Annual Conference, 5-6 September 1987.

just the conduct of research but its utilization as well. If we view research as a matter of research generation alone, we are likely to entertain the traditional notion that the research act has been consummated after conducting research and transmitting a specific message from the researcher to intended users.

In putting emphasis on utilization instead of just the conduct of research, we imply the need for something to happen as a result of research, for instance, a change implied by the research message received. The receiver of the message must do something about it, such as, using it as a basis for change, expanding it or transforming it in some other ways. The message must lead to action. For research, in order to improve educational practice, must not be circumscribed to mere transmission of research messages to intended users but must involve transformation of such messages as well. This is the essence of how research can be effectively placed in the service of educational excellence.

Let me now exemplify this notion of putting research in the service of educational excellence by drawing from the Philippine experience.

In the late sixties, Philippine society became very critical about the quality of outcomes of education. Parents, elders and leaders bemoaned the deterioration of its quality, and their demands for educational reforms grew louder and louder as more and more graduates poured out of the schools. For while we were achieving equity, quality continued to be elusive of attainment.

We realized that the need for change calculated to improve the quality of education was urgent, but we were not sure where the changes needed to be made. Cognizant of the ill consequences of taking a blind-men-and-the-*elephant* view of the problem, we decided to use research to determine the direction of educational reforms that need to be taken to attain educational excellence. Thus, in 1975 we undertook the first systems analysis of the elementary education system through a research project, the Survey of Outcomes of Elementary Education, now more popularly known by its acronym SOUTELE. The whole elementary education system was subjected to a close scrutiny in the same manner as a team of physicians would examine a patient thoroughly to determine what is wrong with him. The pro-

blems that were addressed were: What is the achievement level of the elementary school child? Why are the products of the schools not performing according to accepted standards?

The results of SOUTELE were dismal. They revealed that across the nation, children in grades four and six were deficient in the traditional 3Rs — reading, language and numeracy skills and that there was disparity among school divisions and regions in achievement levels. This was attributed to inadequate and poor quality inputs — low competence and morale of teachers, lack of physical facilities, low socio-economic status of pupils and inequitable distribution of education resources.

The heightening national desire for educational excellence propelled us to formulate a programme for raising the overall efficiency of the elementary education system, redressing disparities among schools, districts, divisions and regions and improving the achievement levels of students. Guided by the results of SOUTELE which identified weaknesses of the system, we developed a Program for Decentralized Educational Development (PRODED), whose centrepiece is a new elementary school curriculum calculated to improve achievement levels and to develop values requisite for effective social living. This curriculum has its antecedents in an earlier research — the Experimental Elementary Education Program — which aimed to develop a curriculum which would ensure improved quality of outcomes of education. As suggested by research, the curriculum was decongested in order to promote greater mastery of basic skills. It underwent tryout before it was implemented and was revised on the basis of the findings of continuing curriculum research.

PRODED provides for improvements in curriculum, teacher and physical facilities development, the areas indicated by the findings of SOUTELE as in great need of reform.

PRODED is now in its fifth year of implementation. Continuing research reveals modest improvement in achievement levels and has provided direction for revising the teacher pre-service and in-service programmes. In this research, the results of the achievement tests of students constituting a representative sample were analyzed and fed back to the personnel in charge of developing and revising the teacher

in-service education programme. Feedback from this research accentuated the need to provide instruction that will make the teacher effectively handle skills that were not well-mastered by students and guide her in teaching for mastery. Subject supervisors who were given feedback on the achievement tests helped revise the teacher in-service training programme accordingly and handled the first training courses.

The research on achievement levels uses parallel tests in order to allow comparison across school years. The research figures suggest that the national target of raising achievement levels by at least 2% in test mean scores annually may now be raised. Regions, school divisions and schools have accordingly revised their targets up to at least 4% increase annually. Such targets will gradually increase as research results indicate that higher targets would be feasible of achievement.

One of our first concerns when we set out to achieve educational excellence at the primary level was to define it operationally. We saw to it that the setting up of our standards of excellence was a participatory process involving representatives of all of those responsible for attaining it. We veered away from adopting the norms of excellence of developed countries and attempted to craft our own standards.

It is recognized that the best indicator of educational excellence is the outcomes of education. Considering the paucity of educational resources, our cultural values, historical factors and national goals, we developed criteria for excellence keeping in mind our capability to attain certain outcomes. In other words, we set standards for excellence that are realistic and attainable. This we were able to do through participatory research involving teachers, principals, supervisors, school superintendents, the bureau director of elementary education, parents and representative pupils themselves. Our concept of educational excellence subsumes not only mastery of skills and knowledge but also development of values identified as essential for effectiveness of the Filipino as a human person, a productive agent and a citizen.

One aspect of our curriculum research and development work for the new elementary

school curriculum is the development of Minimum Learning Competencies (MLC) for each grade level which now serve as a basis for evaluating progress towards educational excellence. Educational excellence requires not only mastery of the MLC but also educational performance beyond it according to each individual's capacity. A delphi survey conducted in 1979 provided direction for conceptualizing educational excellence at the elementary school levels.

Work on the MLC took several years to complete since it could only be finalized after it had been validated in all 13 regions of the country with all kinds of learners, those in public as well as private schools, those in small and big schools, in rural as well as urban areas. The MLC has been used as the basis for developing parallel forms of achievement tests that are administered to a representative sample from year to year to allow for comparison across years, to determine if achievement levels are improving and if we are any closer to our standards of excellence.

Research results indicate that we are steadily moving towards our targets, but we are still distant from the standards of educational excellence which we have targeted to attain by the year 1992. Greater educational efforts need to be exerted to accelerate movement towards our targets. Educational leaders at various levels have been motivated to design their own systems programmes for attaining their targets. In this regard, we have found the adoption of an evaluation-feedback-improvement system very effective. We have packaged and delivered research reports on achievement in such a way that our research messages are not only received and understood but also transformed into action. We have encouraged teachers to conduct action research calculated to improve instruction.

Under PRODED we are undertaking research studies intended to guide educational policy and programme formulation. Such studies include a couple on the self-contained classroom, one on values education strategies and a number on various aspects of education. A Household School Matching Survey (HSMS) is being undertaken to study in depth factors relating to educational excellence. It

will provide a basis for determining progress in achieving equity and quality through PRODED.

Utilization of research results is a primary concern, for it is the use of the feedback loop — the continuous cycle of evaluation-feedback, revision and improvement — that holds promise of promoting the attainment of the levels of excellence we have set. Our hope of attaining educational excellence — as our experience in primary education has taught us — lies in effective research utilization.

In education systems today there is a tremendous spectrum of researcher and user roles which would need to be linked to bring about effective knowledge transfer from researcher to user. Each pair needs to enter into a problem-solving dialogue in order to effect knowledge transmission that will result in transformation or purposive action.

This transmission-transformation process which is the essence of research utilization is our lodestar in our quest for educational excellence. We have identified the head of each level, from national to subnational levels, as the official responsible for effective installation of this transmission-transformation process, and we have initiated a process for monitoring and evaluating their work at the Central Office level. At the Central Office level, we not only see to it that research for improving education is undertaken but also emphasize that findings germane to the attainment of equity and educational excellence are disseminated to the field offices, and that the mode of transmission of research messages would assure clear understanding and appreciation of such messages, which in our view, encourage their utilization in the process improving student achievement.

We also see to it that these research messages are transmitted to personnel who can immediately take action to transform them. For instance, a fortnight ago, we conducted a research dissemination seminar for a study, code-named BRIGHT, which is a study on how high-level thinking skills can be developed even at grades one and two levels. The personnel invited to the seminar were principals, supervisors and curriculum writers who have the capacity to translate the research recommendations into programmes or activities designed to train teachers develop critical

thinking skills among young boys and girls. At the close of the seminar, the participants were asked to articulate what use they may have for the insights they obtained at the seminar. This propelled them to think of ways to transform the research messages into action when they returned to their stations.

The bottom line is to shorten and hasten the journey of the research message from the researcher to the potential user. The shortest journey from researcher to user I know was that of SOUTELE research messages. I was project director of SOUTELE — Dr Sim Wong Kooi was our consultant then — and a few months after its report was out, I was appointed Director of Elementary Education. I immediately heeded the SOUTELE recommendation to revise the overcrowded curriculum and to make it more relevant and got the Bureau of Elementary Education to initiate the Experimental Elementary Education Program which later became the basis of the present new elementary school curriculum.

St. Augustine once said, “Time is a three-fold present — the past as a present memory, the present as we experience it and the future as a present expectation.” In designing our programme for attaining educational excellence, we have been inspired by this bit of wisdom. Our present memory of our dismal past performance has nudged us to initiate a programme renewal keyed to our aspiration for educational excellence. Our present experience encourages us to look towards the future and undertake with vigour today actions which would lead to the realization of our present expectations. We realize that our future is built in the present so we are determinedly working for educational excellence today.

The road to our goal is not smooth — it is littered with obstacles, such as inadequate educational resources. We are determined to make good use of research in attaining educational excellence but we are stymied by some roadblocks, such as weak linkages between researcher and user, inadequate appreciation of the role of research in educational development and need for skills in transforming research messages into action. We perceive these problems as challenges and are propelled by them to move on, inspired by the little that we have achieved thus far.

With this account of how we in the Philippines are attempting to place research in the service of educational excellence, I hope I have provided you with a good-enough backdrop for meaningful participation in this conference.

May you find your conference immensely edifying and enjoyable as I find my being here completely broadening, ego-reinforcing and pleasure giving. Thank You.

Personality Traits and Leadership Behaviour of Secondary School Principals

Lim Soon Tze

ABSTRACT

This is a study to ascertain whether the most effective principals have personality traits and leadership behaviour patterns different from those of the least effective ones. The measure of principal effectiveness is derived from school inspectors' ranking of the principals.

The sample, drawn from the population of 80 English medium secondary school principals, is made up of 40 such principals, 20 from the top and another 20 from the bottom of the list of ranked principals. Cattell and Eber's Sixteen Personality Factor (16PF) Questionnaire was administered to the sample of principals to measure 16

major dimensions of their personality. A researcher-developed questionnaire, the Principal's Leadership Behaviour Questionnaire, was used to measure the leadership behaviour of principals. In terms of personality profiles as measured by the 16PF Questionnaire, the findings did not show that the two groups of principals, characterised as most effective and least effective, differed significantly although the most effective principals tended to be more assertive. However, in terms of leadership behaviour, significant differences emerged on all the dimensions measured.

Introduction

Research has cited time and again the crucial importance of the principal's leadership in raising school effectiveness. It has been said that if a school is a vibrant, innovative, child-centred place, if it has a reputation for excellence in teaching and if students are performing to the best of their ability, one can almost invariably point to the principal's leadership as the key to success (Senate Select Committee, 1970, p. 305). Blumberg and Greenfield (1980), Austin (1982), Bossert (1982) have all made similar observations about the important role of the principal in building school effectiveness.

In Singapore, the Ministry of Education has been decentralising the management of education. With increasing decentralisation in the management of schools, the principal is given

greater leadership responsibility and made more accountable for the way he manages his school (Tay, 1984). In the Singapore context, the effective principal is perceived to be an educational leader with the ability to strike a proper balance between his administrative and professional responsibilities. He has to be able to employ strategies to effect and manage educational change, and he has to take a leading role in instructional improvement. The principal has thus been identified as the key to the whole process of change. From the Ministry of Education's point of view, the selection and training of principals are of crucial importance to ensure that the authority and autonomy given are exercised for the benefit of the pupils.

Principals in Singapore are selected from among Vice-Principals and Senior Teachers

who have some administrative experience. In the case of secondary schools, they are graduates whilst in the case of primary schools, most are non-graduates. Few of the secondary school principals have higher degrees or additional qualifications in educational administration. Most are appointed on the basis of having been good teachers as assessed by their principals and were perceived to possess some leadership qualities. There is no empirical evidence showing that principals appointed on the basis of having been good teachers make effective principals. The question then arises as to what attributes and behaviour patterns would make an effective principal.

METHODOLOGY

Conceptual Framework

This study was an exploratory one to ascertain the relationship between principal effectiveness on the one hand and personality traits and leadership behaviour patterns on the other. In the course of doing so, it attempted to ascertain the relationship between personality traits and the leadership behaviour of these principals.

Figure 1, which is a schema of the variables to be studied, shows that the effectiveness of principals is related to their personality traits which in turn influence their leadership behaviour. Although situational factors, such as teacher and pupil characteristics, and environmental pressures and demands, have some impact in influencing the leadership behaviour of principals, there must be some commonality of characteristics (personality traits) which will determine why different principals react in different ways to similar situations. The likely explanation is that in addition to training and experience, they may be influenced by their personalities.

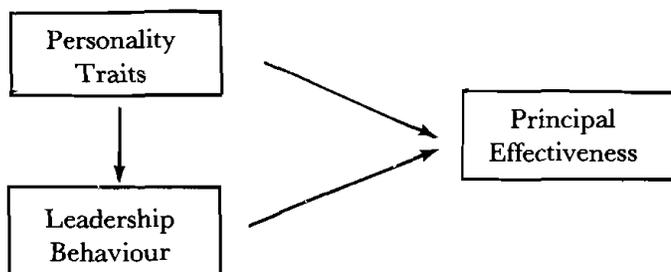


Figure 1 — Framework of Study

Population and Sample

In determining the population for this study, three criteria were used, namely, type of school, language medium of the school and principal, and length of experience as the principal.

The study was confined to secondary schools as primary schools and junior colleges have different principal, teacher and pupil characteristics. Only English medium schools and principals were included since those in the non-English medium would have a different outlook, and different traditional and cultural values. The study was also limited to those with at least two years' experience as principals in the schools concerned so that inspectors could more accurately rank them as well as gauge their leadership behaviour.

These selection criteria thus ensured a more homogeneous population so that situational differences, if any, would be minimal. Eighty principals met these criteria; from this population, purposive sampling to select the top and bottom 25% of principals, ranked in terms of effectiveness by school inspectors, yielded 40 principals.

Since teachers were needed to answer the questionnaire on their principal's leadership behaviour, a random sample of 10% of the staff of schools concerned was obtained from the computer using the teacher data bank in the Ministry of Education. In the case of small schools, a minimum of eight teachers was required since 10% would yield only three or four teachers, in which case the responses would be too few to be reliable.

All 12 school inspectors in the Secondary Schools Branch (i.e. in charge of secondary schools) were involved in both ranking the principals in terms of effectiveness and responding to the questionnaire on the leadership behaviour of principals under their charge.

Variables in the Study

(i) Principal Effectiveness

In operational terms, "principal effectiveness" was taken to be the measure of the principal's achievement against school outcomes such as school climate and morale, and school

achievement or any other outcomes as specified by the school such as pupil self-concept and attitude towards learning.

The criteria of effectiveness that the school inspectors in Singapore look for were adapted from those used by the National Association of Secondary School Principals (NASSP) in its national survey of the Senior High School Principalship (Gorton and McIntyre, 1978) and the characteristics listed in *Ten Good Schools* (HMSO, 1977). An effective principal is one whose school has the following features:

- (a) It is focused in direction and moving to achieve its purpose.
- (b) The school leadership anticipates emerging problems and acts in an informed way to resolve them.
- (c) The school climate is supportive and reflects high morale.
- (d) The school has a well-coordinated instructional programme with appropriate academic support and enrichment activities.

All these four factors are taken into account in a very general way when school inspectors assess principals. The assessment of the principal's effectiveness by inspectors is thus a global one.

In the context of this study, then, the term "principal effectiveness" referred to the assessment of principals as rated by the school inspectors. The most effective principals are those who had been ranked among the top 25%. This category yielded 20 principals. Similarly, the least effective principals were identified from among the bottom 25%. This category also yielded 20 principals. The rest of the principals (50%) were considered to be average in effectiveness and were not included in the study.

It was recognised in the study that the inspectors' rating of principal effectiveness is but one measure of effectiveness. However, it should also be recognised that the inspectors' rating of principals should be accorded its proper significance. After all, it is the inspectors who supervise the principals and are supposed to know them best professionally. As leading professionals in the field, their judgement of principal effectiveness is likely to have a high degree of validity. Hence, despite any possible limitation in the use of this measure, the inspectors' rating of principal effectiveness was used in this study.

(ii) Personality Traits

Personality traits, as generally defined by Cattell and Eber (1957), are broad determining tendencies which influence the behaviour of a person. They are characteristics of the individual which contribute to behaviour prediction.

In this study, personality traits were selected traits as determined by the Sixteen Personality Factor (16PF) Questionnaire developed by Cattell and Eber (1957). The 16 dimensions measured are: (A) Reserved vs Warmhearted, (B) Less intelligent vs More intelligent, (C) Affected by feelings vs Emotionally stable, (E) Humble vs Assertive, (F) Sober vs Happy-go-lucky, (G) Expedient vs Conscientious, (H) Shy vs Venturesome, (I) Tough-minded vs Tender-minded, (L) Trusting vs Suspicious, (M) Practical vs Imaginative, (N) Forthright vs Shrewd, (O) Unperturbed vs Apprehensive, (Q1) Conservative vs Experimenting, (Q2) Group-oriented vs Self-sufficient, (Q3) Undisciplined self-conflict vs Controlled, (Q4) Relaxed vs Tense.

According to Cattell and Eber (1957, p. 1), these cover all the main dimensions along which people can differ, based on basic factor analytic research. They are dimensions that are known to be important in that each has a wide area of influence on behaviour.

(iii) Leadership Behaviour

Leadership behaviour may be broadly defined as the way in which a leader exercises influence over the group (Owens, 1981, p. 150).

In this study, the term was defined as behaviour manifested in the six dimensions described below. These six dimensions were considered by the school inspectors involved as behaviour necessary for effective leadership. They were agreed upon by consensus on the part of the school inspectors after several discussions with the researcher.

- (a) *Administrative Leadership* referred to taking the initiative to plan, implement and monitor realistic and relevant school programmes mainly through the efficient involvement of teachers.
- (b) *Instructional Leadership* referred to the active involvement of the principal in the instructional programme, demonstrated by a

commitment to instructional improvement. This is manifested in continual attempts to improve the quality of the staff's performance and a high concern for instruction, staff development and discussing work with teachers (Bossert et al, 1982).

- (c) *Thrust* referred to dynamic behaviour by the principal, characterised by his effort to "move the organisation". It is marked by the principal's attempt to motivate the teachers through the example he personally sets (Halpin, 1966).
- (d) *Work Emphasis* referred to the principal's orientation towards productivity and his making his expectations clear to the staff.
- (e) *Consideration* referred to warm, friendly behaviour shown by the principal.
- (f) *Adaptability* referred to the ability to exercise flexibility and adapt to changing situations. Successful leaders are able to adapt their leadership behaviour to meet the needs of the group (Hersey and Blanchard, 1969).

Instrumentation

Two instruments were used in the study. Cattell and Eber's 16PF Questionnaire was

used to measure principals' personality traits and a researcher-developed instrument, the Principals' Leadership Behaviour Questionnaire (PLBQ), was used to measure the principals' leadership behaviour.

(i) Sixteen Personality Factor Questionnaire

The 16PF developed by Cattell and Eber is a well-researched tool which measures sixteen major dimensions of the individual's personality. It was chosen for this study because of its wide range of personality factors. According to Adcock (1959, pp. 194-195), no other test covers such a wide range of personality traits or has dimensions so meticulously determined. In describing the 16PF, Lorr (1965, p. 368) stated that it appears to be the best factor-based personality inventory available. Rorer (1972, p. 333) considered it unique in conception and design and thought that it may well be the best personality inventory there is.

The following is a brief description of the sixteen major dimensions for the 16PF (Cattell et al., 1970, pp. 16-17):

Factor	Low Sten Score Description (1-3)	High Sten Score Description (8-10)
A	<i>Reserved</i> , detached, critical, cool, impersonal	<i>Warmhearted</i> , outgoing, participating, interested in people, easy-going
B	<i>Less intelligent</i> , concrete-thinking	<i>More intelligent</i> , abstract-thinking, bright
C	<i>Affected by feelings</i> , emotionally less stable, easily upset, changeable	<i>Emotionally stable</i> , mature, faces reality, calm, patient
E	<i>Humble</i> , mild, accommodating, easily led, conforming	<i>Assertive</i> , aggressive, authoritative, competitive, stubborn
F	<i>Sober</i> , prudent, serious, taciturn	<i>Happy-go-lucky</i> , impulsively lively, enthusiastic, rule-bound
G	<i>Expedient</i> , disregards rules, feels few obligations	<i>Conscientious</i> , persevering, proper, moralistic, rule-bound
H	<i>Shy</i> , restrained, threat-sensitive, timid	<i>Venturesome</i> , socially bold, uninhibited, spontaneous

I	<i>Tough-minded</i> , self-reliant, realistic, no-nonsense	<i>Tender-minded</i> , intuitive, unrealistic, sensitive
L	<i>Trusting</i> , adaptable, free of jealousy, easy to get on with	<i>Suspicious</i> , self-opinionated, hard to fool, skeptical, questioning
M	<i>Practical</i> , careful, conventional, regulated by external realities	<i>Imaginative</i> , careless of practical matters, unconventional, absent-minded
N	<i>Forthright</i> , natural, genuine, unpretentious	<i>Shrewd</i> , calculating, socially alert, insightful
O	<i>Unperturbed</i> , self-assured, confident, secure, self-satisfied	<i>Apprehensive</i> , self-reproaching, worrying, troubled
Q1	<i>Conservative</i> , respecting established ideas, tolerant of traditional difficulties	<i>Experimenting</i> , liberal, analytical, likes innovation
Q2	<i>Group-oriented</i> , a "joiner" and sound follower	<i>Self-sufficient</i> , prefers own decisions, resourceful
Q3	<i>Undisciplined self-conflict</i> , careless of protocol, follows own urges	<i>Controlled</i> , socially precise, following reality, calm, patient
Q4	<i>Relaxed</i> , tranquil, torpid	<i>Tense</i> , frustrated, driven, restless, overwrought

(ii) Principal's Leadership Behaviour Questionnaire (PLBQ)

This 52-item questionnaire was developed by the researcher after reviewing the literature on leadership behaviour and adapting from various leadership questionnaires. Questions include original ones as well as those drawn or adapted from Halpin's (1966) Organisational Climate Description Questionnaire (OCDQ), Hemphill and Coons' (Stogdill and Coons, 1957) Leadership Behaviour Description Questionnaire (LBDQ), the School Learning Climate Assessment Instrument (Michigan State University), Fleishman's (1957) Leadership Opinion Questionnaire (LOQ) and Supervisory Behaviour Description (SBD). Six dimensions were identified by the 12 school inspectors involved in this study as behaviour necessary for effective leadership in schools. The six dimensions were: Administrative Leadership, Instructional Leadership, Thrust, Work Emphasis, Consideration, and Adaptability.

The aim was to describe behaviour which would differentiate between the most effective and least effective principals.

Results

A comparison of the mean scores on the 16PF for two groups of principals, i.e. most effective and least effective, revealed that only Factor E, (Humble vs Assertive) showed a significant difference between the most effective and least effective principals at the .05 level of significance. (Please refer to Appendix A). The most effective principals scored high on this factor indicating that they were more assertive, aggressive, authoritative, competitive and stubborn. They also tended to be more independent-minded and unconventional. The least effective principals, on the other hand, scored low, indicating that they were more humble, mild, accommodating, easily led, and conforming. They tended to be more submissive and dependent. All other factors were not statistically significant at the .05 level.

A related question of interest was whether the 16PF was able to discriminate between the most effective and the least effective secondary school principals. The ability of the 16PF to discriminate between the most effective and the least effective principals was tested using the

discriminant analysis programme. The most effective principals tended to be more assertive (Factor E) and casual and careless of protocol (Factor Q3), whereas the least effective principals were more humble (Factor E), controlled and socially precise (Factor Q3). This was also reflected in the mean personality profiles of the two categories of principals (see Appendix B).

It may be that principals are a highly selected and homogeneous group of people. Secondary school principals are all graduates and it is likely that people of rather similar personality types join the Education Service. This may account for the fact that the mean personality profiles of the two categories of principals are quite similar except for the two factors (E and Q3) which seem to distinguish in a relative sense the most effective from the least effective principals.

Only two factors of the 16PF were thus able to discriminate between the most and least effective principals in the sample.

In leadership behaviour, the most effective principals tended to be stronger in administrative and instructional leadership, to possess more thrust, to emphasise productivity and were more considerate and adaptable compared to the least effective group. There were significant differences between the two groups of principals in leadership behaviour, whether viewed by inspectors or by teachers. The dimension that contributed most towards the variance in leadership behaviour of the two groups was Instructional Leadership.

There was also a significant correlation between the inspectors' ranking of principals in terms of effectiveness and the ranked leadership behaviour scores of the teachers indicating that inspectors and teachers were in agreement about the leadership behaviour of both categories of principals.

As for the relationship between personality traits and leadership behaviour, there were indications in the sample that the personality factor, Humble vs Assertive, was significantly correlated with at least three of the leadership behaviour dimensions, Instructional Leadership, Thrust, and Work Emphasis. The fourth dimension, Adaptability, appeared to be significantly correlated only when viewed by inspectors.

Conclusion

Results did not show that the two groups of principals characterised as most effective and least effective as ranked by school inspectors, differed significantly in terms of personality profiles as measured by the 16PF. It should be noted, however, that the study does not prove conclusively that *effective* principals have the same personality profiles as the *non-effective* principals. The principals under study had gone through a fairly rigorous system of selection and the inspectors' ranking of them merely placed them in a ranked order, that is, principals were ranked in effectiveness in relative terms and not in absolute terms.

In terms of leadership behavioural patterns, however, significant differences emerged. What is worthy of note is that inspectors and teachers in the schools from which the sample of principals was drawn were in substantial agreement on the dimensions of leadership behaviour under study.

If further studies, either using the total population of secondary school principals or primary school principals, substantiate the present findings, then the instrument developed (PLBQ) may be used to train potential or incumbent principals to acquire the behaviour patterns which teachers and inspectors associate with the most effective group of principals.

On the relationship between personality factors and behaviour patterns, this study found that principals who were assertive were strong instructional leaders, possessed thrust and emphasised work, as viewed by both inspectors and teachers. Inspectors, in addition, viewed them to be adaptable as well, this being an important dimension from the point of view of the Ministry of Education.

The findings in this study provide *prima facie* evidence that principals ranked in the top quartile of effectiveness do differ in some important characteristics from those placed in the bottom quartile. It appears that two personality factors, assertiveness and careless of protocol (able to transcend social norms and established framework), set the most effective principals apart from the least effective ones. Behaviours as indexed by questions subsumed under Administrative Leadership, Instructional

Leadership, Thrust, Work Emphasis, Consideration and Adaptability appear to be good indicators of more and less effective principals as ranked by inspectors. The study is limited in scope and therefore the findings are suggestive rather than definitive. To draw conclusions that have policy implications for principal selection and training would be premature. Further research into the linkage between personality factors, principals' leadership behaviour and principal effectiveness is necessary to provide a firm base for policy and action. If further research confirms the findings of this study, then it may have implications for the selection and training of principals.

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Appendix A

‘t’ TESTS ON MEAN SCORES FOR THE MOST EFFECTIVE AND LEAST EFFECTIVE PRINCIPALS ON THE 16PF

Factor	Description	Most Effective		Least Effective		t	p
		Mean	Std. Dev.	Mean	Std. Dev.		
A	Reserved vs Warmhearted	5.55	1.76	5.15	2.00	0.67	0.5070
B	Less intelligent vs More intelligent	8.50	1.15	8.65	1.14	0.42	0.6802
C	Affected by feelings vs Emotionally stable	5.55	2.37	5.70	1.92	-0.22	0.8273
E	Humble vs Assertive	5.90	1.89	4.45	1.76	2.51*	0.0164
F	Sober vs Happy-go-lucky	3.80	1.36	3.30	1.59	1.07	0.2926
G	Expedient vs Conscientious	7.20	1.96	7.40	1.85	-0.33	0.7418
H	Shy vs Venturesome	5.25	2.29	5.65	2.46	-0.53	0.5974
I	Tough-minded vs Tender-minded	6.95	1.96	6.75	1.68	0.35	0.7310
L	Trusting vs Suspicious	5.30	1.81	5.00	1.65	0.55	0.5874
M	Practical vs Imaginative	5.55	1.54	5.40	2.23	0.25	0.8060
N	Forthright vs Shrewd	5.95	2.52	6.40	2.41	-0.58	0.5679
O	Unperturbed vs Apprehensive	5.10	1.80	4.85	1.46	0.48	0.6328
Q1	Conservative vs Experimenting	6.60	1.60	6.15	1.35	0.96	0.3427
Q2	Group-oriented vs Self-sufficient	6.00	1.95	6.25	2.10	-0.39	0.6983
Q3	Undisciplined Self-conflict vs Controlled	6.50	1.57	7.25	1.92	-1.35	0.1840
Q4	Relaxed vs Tense	3.85	2.06	3.60	1.76	0.41	0.6820

* Significant at 0.05 level

Appendix B
MEAN PERSONALITY PROFILES OF THE MOST EFFECTIVE PRINCIPALS AND THE LEAST EFFECTIVE PRINCIPALS ON THE 16PF

	Low Score Description	Standard Ten Score (Sten)										High Score Description
		→ Average ←										
		1	2	3	4	5	6	7	8	9	10	
A	<i>Reserved, Detached, Critical, Cool (Sizothymia)</i>	.	.	.	.	.	.	.	.	.	.	<i>Warm-hearted, Outgoing, Participating, Interested in People, Easy-going, (Affectothymia)</i>
B	<i>Less Intelligent, Concrete-thinking (Lower scholastic mental capacity)</i>	.	.	.	.	.	.	.	.	.	.	<i>More intelligent, Abstract-thinking, Bright (Higher scholastic mental capacity)</i>
C	<i>Affected by Feelings, Emotionally Less Stable, Easily Upset, Changeable (Lower ego strength)</i>	.	.	.	.	.	.	.	.	.	.	<i>Emotionally Stable, Mature, Faces Reality, Calm, Patient (Higher ego strength)</i>
E	<i>Humble, Mild, Accommodating, Easily led, Conforming (Submissiveness)</i>	.	.	.	.	.	.	.	.	.	.	<i>Assertive, Aggressive, Authoritative, Competitive, Stubborn (Dominance)</i>
F	<i>Sober, Prudent, Serious, Taciturn (Desurgency)</i>	.	.	.	.	.	.	.	.	.	.	<i>Happy-Go-Lucky, Impulsively Lively, Enthusiastic, Heedless (Surgency)</i>
G	<i>Expedient, Disregards Rules, Feels Few Obligations (Weaker superego strength)</i>	.	.	.	.	.	.	.	.	.	.	<i>Conscientious, Persevering, Proper, Moralistic, Rule-bound (Stronger superego strength)</i>
H	<i>Shy, Restrained, Threat-sensitive, Timid (Threctia)</i>	.	.	.	.	.	.	.	.	.	.	<i>Venturesome, Socially-bold, Uninhibited, Spontaneous (Parmia)</i>
I	<i>Tough-minded, Self-reliant, Realistic (No-nonsense)</i>	.	.	.	.	.	.	.	.	.	.	<i>Tender-minded, Intuitive, Unrealistic, Sensitive (Premsia)</i>
L	<i>Trusting, Adaptable, Free of Jealousy, Easy to Get On With (Alaxia)</i>	.	.	.	.	.	.	.	.	.	.	<i>Suspicious, Self-opinionated, Hard to Fool, Skeptical, Questioning (Protension)</i>
M	<i>Practical, Careful, Conventional, Regulated by External Realities, (Praxernia)</i>	.	.	.	.	.	.	.	.	.	.	<i>Imaginative, Careless of Practical Matters, Unconventional, Absent-Minded (Autia)</i>
N	<i>Forthright, Natural, Genuine, Unpretentious (Artlessness)</i>	.	.	.	.	.	.	.	.	.	.	<i>Shrewd, Calculating, Socially alert, Insightful (Shrewdness)</i>
O	<i>Unperturbed, Self-assured, Confident, Secure, Self-satisfied (Untroubled Adequacy)</i>	.	.	.	.	.	.	.	.	.	.	<i>Apprehensive, Self-reproaching, worrying, Troubled (Guilt Proneness)</i>
Q1	<i>Conservative, Respecting Established Ideas, Tolerant of Traditional Difficulties (Conservatism)</i>	.	.	.	.	.	.	.	.	.	.	<i>Experimenting, Liberal, Analytical, Likes Innovation (Radicalism)</i>
Q2	<i>Group-oriented, A "Joiner" and Sound Follower (Group adherence)</i>	.	.	.	.	.	.	.	.	.	.	<i>Self-sufficient, Prefers Own Decisions, Resourceful (Self-sufficiency)</i>
Q3	<i>Undisciplined Self-conflict, Careless of Protocol, Follows Own Urges (Low integration)</i>	.	.	.	.	.	.	.	.	.	.	<i>Controlled, Socially precise, Following Self-image, Compulsive (High self-concept control)</i>
Q4	<i>Relaxed, Tranquil, Torpid, Unfrustrated (Low ergic tension)</i>	.	.	.	.	.	.	.	.	.	.	<i>Tense, Frustrated, Driven, Restlessness, Overwrought (High ergic tension)</i>

———— Most Effective Principals
 - - - - - Least Effective Principals

Teachers' Educational Attitudes and Their Perception of Principals' Leadership Behaviour

Ee Chye Heng

ABSTRACT

This study was designed to find out in the Singapore context the relationship between the educational attitudes of teachers and their perception of the leadership behaviour of their principals. Teachers were asked to assess both their educational attitudes and their principals' leadership behaviour.

The implications of this study are: (1) principals' leadership behaviour could be a major determinant of teachers' educa-

tional attitudes, (2) teachers expect principals to support staff members to attend in-service training and to delegate authority and responsibility to them to co-ordinate school activities, and (3) principals who are most effective in promoting an orderly and studious school environment are willing to get involved by enforcing the observation of school rules.

Introduction

Greater demands are being made on principals and teachers to maintain the educational standard of the schools since the implementation of the New Education System for primary and secondary schools in 1979.

Following the implementation of the School Appraisal System, the effectiveness of leadership behaviour has been reflected through principals' involvement in the instructional programmes which would affect the teachers' educational attitudes. In the Singapore context, good schools are still generally perceived by the public to be those producing excellent examination results. The purpose of this study is to find out whether a 'good school' necessarily has an effective principal and teachers with positive educational attitudes and whether the leadership behaviour of the principal has any effect on the teachers' educational attitudes.

Purpose of the Study

This study explored the relationship between the principal's leadership behaviour and teachers' educational attitudes. In particular, the study was to find out the following:

- (1) Does a 'good school' necessarily have an effective principal and teachers with positive educational attitudes?
- (2) Does the leadership behaviour of the principal have any effect on the teachers' educational attitudes?
- (3) What are the patterns of teachers' educational attitudes and principals' leadership behaviour?

The Conceptual Framework

This study is based on the following six basic assumptions:

- (1) Theoretically, good schools can become more effective with a strong and inspiring principal who believes that education goes

beyond obtaining good examination results, that attitudes, values and other areas of affective development are equally important, and that he can do a great deal more with such highly motivated and intelligent pupils through enrichment, extension and other co-curricular programmes. In order to facilitate analysis, a good and effective school is taken as one which sets realistic goals and targets and succeeds in realising them.

- (2) An effective principal will provide his staff with the kind of leadership that will make teaching more effective, and ultimately it will affect the academic achievement of the pupils.
- (3) An effective principal will have certain behaviour patterns which will reflect his leadership ability (as suggested in the Principal's Leadership Behaviour Questionnaire — PLBQ).
- (4) Good leadership should be reflected in the teachers' attitude towards teaching (as suggested in the Educational Attitudes Inventory — EAI).
- (5) Effective teachers would enable the pupils to learn and perform better (as suggested by the high achievement rate of the pupils in the public examinations, namely, the General Certificate of Education (GCE) 'O' level).
- (6) Therefore, theoretically, a good school would have an effective principal (who should be rated high on the PLBQ by the teacher), and highly motivated teachers (who should score equally high on the EAI). There should be a significant correlation between the PLBQ and that of the EAI.

Research Questions

In this study, in order to find out the extent to which the principal's leadership behaviour is related to teachers' educational attitudes, the following questions were investigated:

- (1) To what extent does the score of the principal on the PBLQ correlate with the score of the teachers on the EAI in the above average, average and below average government secondary schools?

- (2) To what extent does the score of the principal on the PLBQ correlate with the score of the teachers on the EAI in larger and smaller government secondary schools?
- (3) To what extent does the score of the teachers on the EAI correlate with the classification of schools according to size and academic achievement?
- (4) To what extent does the score of the principal on the PLBQ correlate with the classification of schools according to size and academic achievement?

Definition of Terms

- *Effectiveness of the principal's leadership role.*

The operational definition of effectiveness used in this study is the extent to which goals set have been achieved. A principal is thus effective if he achieves the objectives that are set — by the school and by the Ministry of Education. "Principal's effectiveness" would be the measure of the principal's achievement against school outcomes such as school climate and morale, and school achievement. The principal's effectiveness is also defined in terms of the principal's ability to achieve the school's instructional programmes with appropriate academic support and enrichment activities.

- *Teachers' educational attitudes.*

Good teaching may result from the right attitudes of teachers in classroom teaching. Right attitudes of teachers to classroom teaching as defined by Bunting (1984) are measured by four scales, namely, Affective Scale, Cognitive Scale, Directive Scale and Interpretive Scale. The assumption is that all items in these four scales describe the general content of teacher attitudes with respect to the educational process. The beliefs of teachers with respect to the needs of students and the purposes and methods of formal education would enhance the understanding and improvement of the teaching staff.

The Affective Scale (AS) focusses on the emotional dimension of development. Teachers who score high on this scale believe in the importance of an empathetic, supportive relationship which frees students to discuss their feelings and experiences. Com-

mitment to the ideal of individualism and the goals of self-awareness and self-acceptance are attributes of this attitudinal dimension.

The Cognitive Scale (CS) contains items which describe teaching techniques derived from cognitive psychology. The focus of these items is the active and direct involvement of the students in the learning process as the student is encouraged to predict, infer, generalise, and evaluate. In general, the items of the scale are oriented towards maximum engagement of the mental processes during classroom instruction.

The Directive Scale (DS) affirms the values of traditionalism in education. Teachers who score high on this scale believe strongly in the teacher's role as decision maker in the classroom. Firm discipline, traditional curricula and attentiveness to order and procedure are specific components of this scale. In general, with regard to the items, it is perceived that this authority and control emanate from the teacher who is responsible for functioning in a directive capacity.

The Interpretive Scale (IS) reflects a belief in the importance of helping students derive maximum meaning from subject matter. The various methods prescribed for accomplishing this goal include subject matter integration and the relating of classroom learning to the broader problems of the world. As the items of the scale focus on the wider implication of what is taught, they describe an interpretive, as opposed to a strictly informational, approach to subject matter.

How was the study carried out?

A sample of 305 teachers with a minimum of one year qualified teaching experience from six secondary schools completed two questionnaires each. The six secondary schools were selected based on the level of academic achievement and size of the school.

The two questionnaires used in the study were the Principal's Leadership Behaviour Questionnaire (PLBQ) and the Educational Attitudes Inventory (EAI).

The six main areas of the PLBQ are:

- (1) Staff Development (SD)
- (2) Instructional Support (ISP)

- (3) Resource Acquisition and Allocation (RAA)
- (4) Quality Control (QC)
- (5) Co-ordination (CO)
- (6) Trouble-shooting (TS)

The design of the EAI consists of four scales (dimensions) as follows:

- (1) Affective Scale (AS)
- (2) Cognitive Scale (CS)
- (3) Directive Scale (DS)
- (4) Interpretive Scale (IS)

General Description of the Sample

The sample of six schools consists of three big and three small schools. Schools with an enrolment greater than 1500 are classified as big schools, whereas those below 1500 are classified as small schools. In this study, the average enrolment of big schools is 1908 and of the small schools is 1173. Each category of schools comprises one each of the above average, average and below average schools. The average GCE 'O' level performance for three 'O' level passes over the past three years for the above average schools is 90.3%, average schools 72.8% and below average schools 47.7%.

Summary and Discussion of the Findings

The analyses of the data showed that the above average schools' PLBQ score was the highest, followed by average schools, and that of below average schools was the lowest. This tends to confirm that the higher the score on the PLBQ, the more effective is the principal, and the better is the school's academic achievement.

Though in the below average schools, teachers scored lowest on the Affective Scale (AS) and the Interpretive Scale (IS), their minimum scores were still above the average mean score. Hence, a "good school" — a school which is characterised by high academic achievement — is also characterised by good attendance, desirable behaviour, good principal-staff and teacher-pupil relationships and by a conducive atmosphere for learning, and also has an effective principal and teachers with positive educational attitudes.

Based on the level of achievement of the schools, three dimensions— Staff Development

(SD), Resource Acquisition and Allocation (RAA), and Trouble-Shooting (TS) of the PLBQ — are correlated significantly with all the dimensions of EAI for the above average schools. This suggests that principals in high achieving schools play crucial roles in the development of an effective teaching staff and acquisition of adequate learning materials, appropriate facilities, and skilled support personnel for instructional effectiveness. They also apply the trouble-shooting mechanisms for anticipating and resolving problems in schools to reduce the likelihood of these problems that may undermine instructional effectiveness.

In the average schools, only SD and RAA of the PLBQ are correlated significantly with all the dimensions of the EAI.

Also, only in the above average schools, two dimensions, the Directive Scale (DS) and the Interpretive Scale (IS) of the EAI, are significantly correlated with all the dimensions of the PLBQ but none for average and below average schools.

This suggests that the leadership behaviour of the principal has certain effects on the teachers' educational attitudes. Principals can play crucial roles in the development of an effective teaching staff, in-service education and staff motivation. In addition, principals can see to the provision of adequate learning materials, appropriate facilities, and skilled support personnel that are essential to instructional effectiveness. Also, principals have a variety of ways to trouble-shoot, such as regular department meetings, daily tours of the school and chats with students and staff members for anticipating and resolving problems in schools that may undermine instructional effectiveness.

Therefore, the findings in this study tend to reiterate the six basic assumptions stated earlier on as underpinning the conceptual framework of this study.

The findings have revealed a strong relationship between the leadership behaviour of principals and the educational attitudes of teachers. The leadership behaviour of principals and the educational attitudes of teachers have influenced positively the quality of the school environment and the instruction. The professional skills of the principals and teachers

are in creating a well-ordered environment in which learning could flourish, within which levels of expectations are realistic yet demanding, and functions and responsibilities are clearly defined. Principals and teachers meet regularly to discuss school improvements, teacher and programme development, and assessment. The teachers are hardworking, concerned for the academic achievement of pupils and seek to motivate them. What is to be taught is carefully selected and varied teaching approaches are adopted. Proper use of available resources is made and remedial lessons are conducted for slower learners. Teachers are also encouraged to develop their own professional skills and knowledge.

The principals hold themselves and their staff personally accountable for pupils' achievement. The principals' first priority is quality instruction, and they communicate this to their teachers. They set a tone of high expectations for their teachers and pupils and their presence is seen and felt in the classrooms and elsewhere in the school. They provide the cohesion and direction for effective implementation of the school programme.

High academic achievement has been made possible only through a united sense of commitment and involvement, enthusiasm and indefatigable energy from both principals and teachers.

The review of literature on principals' leadership behaviour and teachers' educational attitudes has identified valuable ideas which are of great importance to promoting effectiveness among practising school administrators. The two instruments used in this study, the PLBQ and the EAI, provide a valuable means of upward communication, which may indicate to the principals the attitudes of teachers and their perception of the effectiveness of principals' leadership behaviour. The trends in the data provide the principals with a fairly wide range of information on areas of their leadership strengths and weaknesses, i.e. the kind of information which helps them to reflect and improve on their leadership style.

Implications of the Findings

The findings in this study provide prima facie evidence that principals in the above average

schools do affect their teachers' educational attitudes more than those in the average and below average schools. It appears that principals' leadership behaviour could be the major determinant of teachers' educational attitudes.

The findings based on the top 10% high score by the cumulative frequency percentage of all items in the PLBQ reveal that principals must disseminate information of events relating to the school to all staff through circulars, minutes of meetings and newsletters. This is to ensure that teachers know what is going on in the school, how they may contribute to the school programme, how and why certain allocations of resources are made, and that knowledge must flow through the system. As emphasized by Simon (1973, p. 76), communication must flow upwards, downwards and laterally through the organisation, and in particular there must be considerable emphasis on the informal channels of communication. The principal must ensure that the organisational structure does not constrict communication into a formal downward direction, as this would lead to staff frustration and dissatisfaction.

The findings based on the top 10% high score by the cumulative frequency percentage of all items in the PLBQ also suggest that teachers expect principals to support staff members to attend in-service training and to delegate authority and responsibility to them to co-ordinate activities. The findings of the study further say that committees may not produce better results but this is a better way of involving as many teachers as actively as possible in the operation of the school. This is in accordance with Koontz's (1984, p. 434) management theory of decentralisation of authority.

Members of the committee usually gain most because of their participation. Thus, it is necessary to structure involvement and encourage contributions from a wide range of staff members in different committees. Also, working with smaller groups in a more relaxed atmosphere may help the school's administrative team to develop better rapport with the committee members, necessary for a free and willing exchange of ideas. Administrators will then be able to give advice informally, to make suggestions and even to stimulate innovations

among individual teachers at the classroom level.

Teachers also suggest that principals who are most effective in promoting an orderly and studious school environment be willing to get involved directly in the enforcement of school rules. This is supported by the authors of the book entitled *Creating Effective Schools* (Brookover et al, 1982). An effective school is one in which essentially all the students acquire the basic skills and other desired behaviour within the school (Back and Monroe, 1985).

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Role Conflict and Role Ambiguity in Relation to Principals' Perceptions of the Importance of Tasks

Mok Siew Ming

ABSTRACT

The principal's role in Singapore has undergone fundamental changes. New expectations and additional responsibilities have been thrust upon him. His routine administrative duties have been de-emphasised and his educational leadership roles have gained prominence.

Findings of the study indicated that there were statistically significant differences at

the 0.05 level, in the secondary school principals' perceptions of the importance of their tasks in the ideal, expected and actual roles. The differences existed in the main functional areas as well as in the specific tasks of the principals' roles. Analyses of role ambiguity disclosed ambiguity in all the major areas of the principals' work.

Introduction

The research is organised into three main sections. Firstly, the study looks at the changing role of the principal in Singapore. It traces the emergence of the principal as a key figure for the successful implementation of the educational aims of the country.

Secondly, it reviews literature on educational administration and reveals that the principal today is recognised not only as an administrator but also as a manager and instructional leader. His new and complex role has brought with it a multitude of responsibilities that he has never encountered before. It demands that he be competent in many fields.

Thirdly, the study aims to investigate the extent of conflict and ambiguity the principal faces in the light of the new demands and expectations. Central to the research is whether the principal is able to match his actual performance with his own aspiration of his role, as well as the Ministry of Education's expectations of his role. Equally pertinent to the re-

search is whether the principal faces ambiguity through inadequate information on the areas of his work and feedback on his performance.

The Role of the Principal in Singapore

The principal's role in Singapore has undergone fundamental as well as dynamic changes since the establishment of the first school in 1823. Up to the 1960s, improvements in education focussed on the quality of teachers, changes in curriculum, school buildings, changes in policy and text-books. In a seminar for principals in 1965, the description of a normal day's work of a principal centred around his clerical and administrative duties. The principals themselves revealed that their perceptions of their major tasks were the efficient administration of the school.

The seventies was a period of awakening for both the Ministry of Education and the principals. Educational literature and research

in the West singled out the principal as the focal figure in school organisation. The Ministry realised the need to gradually delegate more authority to principals if they were expected to lead and manage their schools.

As a result, in the years between 1972 and 1982, the Ministry declared a policy of gradual decentralization in the management of schools. As more autonomy was given, so the principal's accountability increased. In 1980, a formal system of writing school plans and school appraisal was introduced and the principal's role subsequently expanded. He was responsible for establishing the school ethos and school climate. Likewise the school curriculum, proper staff development and resource utilization, pupil management, initiation of change and innovation depended on the principal. He was expected to make independent decisions and to work in a decentralised school management setting within a centralised system of education. While the Ministry was moving towards increased decentralization, it was also maintaining sufficient centralised control and supervision to ensure uniform and improved standards throughout the school system.

In such a situation the principal in Singapore could well find himself in a predicament. On the one hand he is encouraged to make decisions, to take the lead to initiate change and to innovate, while at the same time he is held accountable. Consequently, he will exercise this expanded authority with caution and apprehension. Principals have been found slow to take up their new roles and new challenges. If principals feel that they are performing their roles differently from what they expect to do or are expected to perform, they may face a role conflict. Similarly, if there is a lack of clear, consistent information regarding goals, role expectations, role performance and predictability of outcomes of role behaviour, their performance may be affected by their role ambiguity.

Review of the Literature

In the review of literature on the principal's role, a brief overview of the role theory was included to serve as a framework for the study. Research in this area has been based to a great

extent on the conceptualization of Kahn and his colleagues (Kahn et al, 1964). Inherent in a role is a set of expectations. These consist of instructions on preferred behaviour, specific duties and responsibilities and information about rewards and sanctions which influence the role behaviour of a person. Expectations can be internal, in which case the principal is a role sender to himself or they can be external, imposed on the principal by the school inspectors, teachers, parents and students. In the present study, the expectations of the principal's role are confined to self and the school inspectors.

When the behaviours expected of the principal are inconsistent with his actual performance, the principal is believed to experience some form of conflict. Likewise, if the principal lacks clear, consistent information to allow him to perform his tasks as he thinks they ought to be performed, he will experience a degree of ambiguity.

A review of the literature on the role of the principal clearly indicates a need to re-assess the work of the principal. As society and school systems grow in complexity, the demands made on the principal have intensified and become more confusing, albeit more challenging. The principal is viewed as the single most important and influential person in the school system. He, more than any other person, can affect what goes on in his school, can set the tone, can manipulate the human and physical resources in the most effective manner, can challenge, innovate and stimulate his students and staff by his leadership position. The diversity of tasks and high expectations thrust upon him have aroused concern as to whether he is able to reconcile the expectations of his role with his actual performance.

Compounded with his numerous tasks is the changing emphasis of the principal's role. Research in the sixties has focussed on the managerial and administrative functions of the principal, one who is skilful in business management techniques and organizational principles, and able to lead his staff, involve them in decision making, facilitate change and work towards an efficient productive school system. Research in the seventies and eighties has centred on his role as the educational leader, demanding that he spends more time and gives more attention to curriculum development, the

improvement of the instructional programmes, and supervision of instruction. Critics of the principal's role advocate that to function more effectively, he should discontinue his efforts in some tasks and assume responsibility for other more important duties. Principals themselves express dissatisfaction over the many demands on their time. There is a definite need for principals to be clear about the functional areas of their role, to receive clear, consistent expectations, to allow them to prioritize their multifarious tasks and discharge the requirements of their role with satisfaction and confidence.

Methodology

Research Methodology

The study aims to determine whether there is a significant gap between the ideal, expected and the actual roles of secondary school principals in relation to their perceptions of the importance of their tasks as principals.

The *ideal role* refers to what the principal desires to accomplish under ideal conditions. The *expected role* is perceived as what is expected of him by the Ministry of Education. The *actual role* relates to what he actually does in carrying out his duties as a principal.

Operationally the role behaviour of the principal is measured by a 76-item questionnaire consisting of principals' tasks. The relative importance of each task is measured by the ratings given by the principals for each task in their ideal, expected and actual roles.

If significant differences occur between principals' perceptions of their ideal role and their actual role, then it is assumed that principals are likely to experience *person-role conflict*.

If significant differences occur between principals' perceptions of their expected role and their actual role, then they are likely to experience *role overload conflict*.

For these two categories of conflict there may be other pertinent factors not included in the study but may contribute to the situation.

The study also includes a comparison of principals' perceptions of their role with that of the inspectors' perceptions of the expected role of the principal. The extent of congruency between the two groups could indicate the effec-

tiveness of communication of role expectations between the Ministry of Education and principals. It is therefore also the aim of the study to ascertain whether conflict in role performance is accompanied by ambiguity in the areas of educational goals, role requirements, feedback on performance and ability to predict role outcomes.

It must be pointed out at this stage that a certain amount of conflict in an organisation is good because it can lead to constructive change. Similarly, role ambiguity could encourage flexibility. But when role expectations are unclear and ambiguous, behaviour is less predictable and results in confusion and ineffective action. Research mainly in industries has revealed that conflicting role pressures and role ambiguity are associated with low job satisfaction, coping behaviour, high tension, low self-confidence and a sense of futility.

Sample

The study is based on responses from principals of secondary schools with more than two years principalship experience. The questionnaires were administered to 104 principals.

Analysis of Findings

Selected findings are presented here in the form of answers to research questions.

■ Are there significant differences between the main functional areas of the ideal, expected and actual roles of the principals in relation to tasks and time allocated?

In terms of the importance of tasks, the results pointed to a significant difference between the responses to the ideal, expected and actual roles in all the seven main areas of responsibility (Table 1). In each area, the mean values decline from the ideal to the actual role. The greatest variability of scores existed in the area of innovation and change and the least variance occurred in the area of finance and physical resources.

In terms of time allocated to the seven main functional areas, there were significant differences in six out of the seven areas (Table 2). The principals were in closest agreement with the percentage of time allocated to staff personnel services. They were least in agreement

TABLE 1 — ANALYSIS OF VARIANCE OF THE IMPORTANCE OF TASKS IN THE MAIN FUNCTIONAL AREAS (N = 104)

Main Areas	Mean (\bar{x}) Standard Deviation(sd)	Importance of Tasks			F-value	PR > F
		Ideal	Expected	Actual		
1 Instruction and Curriculum Development	\bar{x} sd	47.03 ^a 6.94	46.16 ^a 6.97	37.89 ^b 6.57	127.39*	0.0001
2 Pupil Personnel Services	\bar{x} sd	39.44 ^a 5.30	36.77 ^b 5.45	33.64 ^c 4.78	73.34*	0.0001
3 Staff Personnel Services	\bar{x} sd	48.13 ^a 6.89	45.63 ^b 7.61	38.55 ^c 6.66	113.68*	0.0001
4 Finance — Physical Resources	\bar{x} sd	28.39 ^a 5.86	28.28 ^a 5.42	25.67 ^b 5.40	21.45*	0.0001
5 Community-School Leadership	\bar{x} sd	18.08 ^a 4.55	17.15 ^a 4.25	13.36 ^b 4.13	76.49*	0.0001
6 Policy and Administration	\bar{x} sd	36.65 ^a 5.77	36.38 ^a 5.96	32.87 ^b 5.76	39.48*	0.0001
7 Innovation and Change	\bar{x} sd	16.02 ^a 2.62	14.73 ^b 2.81	11.50 ^c 2.71	198.41*	0.0001
Total Role	\bar{x} sd	233.32 ^a 33.44	224.96 ^b 33.44	193.80 ^c 28.88	130.65*	0.0001

a, b, c means with the same letter (a, b, c) are not significantly different at the 0.05 level
* statistically significant at the 0.05 level

with the time allocated to instruction and curriculum.

A rank order of principals' responses to the importance of the seven main areas revealed that the most important area differed in each role. In the ideal role, policy and administration ranked highest. In the expected role, principals assigned to instruction and curriculum the highest priority, while in the actual role, pupil services occupied first position. On the other hand, principals have allocated most time to the instruction and curriculum area in all roles. In general it may be concluded that the principals would like to devote a greater percentage of their time and effort to the area of instruction and curriculum development. They would prefer to devote less time and effort to community-school leadership, which was ranked lowest in all roles both in terms of importance of tasks and time allocation.

The literature review on school administration supports the finding that principals were aware that they were expected to spend more

time and devote more attention to the instruction and curriculum areas and less time to administrative matters. Such an awareness might have influenced the principals' responses. Indeed, in their expected role, principals have allocated the greatest amount of time and importance to the instruction and curriculum areas. In the actual role the same areas were ranked fifth in importance. In practice, principals found that areas which demanded their immediate attention were pupil personnel services and policy and administration. It would appear that principals experience considerable conflict about the nature of their responsibilities.

■ Are there differences in principals' perceptions of the importance of specific tasks in relation to their ideal, expected and actual roles?

In almost every task the ideal means were the highest, followed by the expected and the actual means. Ideally, the principals considered a

TABLE 2 — ANALYSIS OF VARIANCE OF PRINCIPALS' TIME ALLOCATION IN THE MAIN FUNCTIONAL AREAS (N = 104)

Main Areas	Mean (\bar{x}) Standard Deviation(sd)	Importance of Tasks			F-value	PR > F
		Ideal	Expected	Actual		
1 Instruction and Curriculum	\bar{x} sd	32.01 ^a 13.08	31.28 ^a 12.25	22.62 ^b 9.96	66.84*	0.0001
2 Pupil Personnel Services	\bar{x} sd	14.92 ^b 5.71	13.96 ^b 5.84	16.70 ^a 7.12	12.79*	0.0001
3 Staff Personnel Services	\bar{x} sd	12.50 ^a 6.18	11.97 ^a 5.45	12.83 ^a 6.01	1.73	0.1805
4 Finance — Physical Resources	\bar{x} sd	8.42 ^b 4.66	9.25 ^b 4.41	13.01 ^a 7.73	25.93*	0.0001
5 Community-School Leadership	\bar{x} sd	7.05 ^a 3.81	7.10 ^a 4.19	5.81 ^a 4.12	7.82*	0.0005
6 Policy and Administration	\bar{x} sd	15.11 ^b 7.62	15.77 ^b 7.31	19.82 ^a 10.44	23.87*	0.0001
7 Innovation and Change	\bar{x} sd	10.23 ^a 4.95	10.38 ^a 4.77	8.84 ^a 5.11	5.59*	0.0043

a, b, c means with the same letter (a, b, c) are not significantly different at the 0.05 level
* statistically significant at the 0.05 level

large number of tasks of high importance but in actual practice these tasks could not be treated with similar importance.

The analysis showed that 73 out of the 76 tasks were different between the roles and is a measure of considerable conflict among the principals. The tasks which disclosed agreement between the roles were highly routine yet essential tasks, while the tasks which registered the greatest variances between roles were more difficult to achieve and demanded higher professional skills.

The three tasks which principals were most in agreement with in their perceptions of their importance are:

- to prepare the agenda for staff meetings;
- to plan and coordinate major school functions; and
- to supervise the maintenance of school buildings and other physical resources.

The three tasks which registered the greatest variances between roles are:

- to plan enrichment programmes for the advanced learners;
- to introduce alternative/new strategies to upgrade school performance; and

- to encourage the participation of teachers in decision-making.

■ Are there significant differences between inspectors' perceptions of the expected role of the principals and the principals' perceptions of their actual role in the seven main functional areas?

In their actual performance, principals were unable to meet the expectations of the inspectors in three out of the seven main areas. The widest discrepancy existed in the instruction and curriculum areas and in innovation and change. Even in time allocation, the principals were able to allocate only 22.62% of time to instruction and curriculum, while the inspectors had expected 42.92% for the same area.

Except for finance and physical resources, the inspectors had given more importance to all areas compared to the principals'. Only in the area of finance and physical resources did the principals allocate twice as much time as the inspectors expected. Principals, it would appear, had not been able to reduce their attention to administrative duties although they knew that they were expected to do so.

A rank order of inspectors and principals' perceptions of the principal's role in relation to the importance of tasks and time allocated to the tasks shows sharp differences for the former and close similarities for the latter perception. In terms of the importance of tasks, the only area that principals and inspectors agreed on was in staff personnel services and community-school leadership. On the contrary, in terms of time allocation, inspectors and principals were in agreement on all areas except in finance and physical resources and innovation and change.

We may conclude from the findings that:

1. the principals' perception of the importance of tasks did not match the amount of time allocated to the tasks; and
2. the principals perceived they had devoted more time to the various areas than they actually did especially in the area of instruction and curriculum development.

■ To what extent and in which areas are principals ambiguous about their role?

Four areas of ambiguity were measured and they covered role objectives, role expectations, role performance and role outcomes.

While principals were clear about their objectives and the relationship between their own work and the general educational objectives, they felt that they were ambiguous about the relative importance of the various activities in which they were involved. The conclusion supported the findings of the previous hypothesis which revealed that while the inspectors' expectations of the principal's role closely matched that of the principal's actual performance, they differed in their perceptions as to which tasks should be considered the most and least important. The priority attached to the tasks by the two groups also differed considerably.

Principals were clearest about role expectations from teachers, followed by those of the Ministry of Education, and least clear about the expectations of the politicians and the community. Their ambiguity could account for the low importance they had given to the tasks which involved the parents and the community.

While principals were generally aware of the Ministry of Education's expectations of their role, they felt that they needed clearer direc-

tions as to how they could fulfil these expectations. Principals experienced ambiguity in all the major areas of their work, particularly in their relationships with the community, the parents, the Ministry of Education and in the area of innovation and change.

Principals were quite divided in their opinions as to whether they were able to predict the outcome of their work. But the scale was tilted slightly towards difficulty to anticipate problems arising from their work. While many administrative tasks were routine, there were also many educational effects which were not immediately apparent and many unexpected incidents involving pupils, teachers and parents could contribute to the principals' difficulty in predicting work outcomes.

Implications of the Study

The present study revealed a significant difference in principals' perceptions of their ideal, expected and actual roles both in terms of the importance of tasks and time allocated to the tasks. The marked decline in the number of tasks principals perceived as most important in the ideal and the expected compared to the actual role suggested that principals would like to devote much more attention to many of their tasks but in actual practice there were too many demands on their time and they had to be very selective. It is noted that principals preferred to confine their attention to the school while tasks related to the community and even to establishing closer relationships with parents were of lower priority. The findings imply a need to reassess the principal's role in the light of his ever growing responsibilities and the competing demands on his time.

Another distinct finding of the study is the definite emphasis principals and inspectors placed on the instruction and curriculum duties. In the expected role, both groups had assigned high importance to almost all the tasks. The inspectors expected 42.92% of the time to be devoted to this area, whereas in their actual role although the principals had ranked the area of most importance, the time they felt they could allocate to instruction was 22.62%. An understanding of the principal's limited participation in this very critical area is an obvious need.

The difference in principals' response to the tasks of instruction and curriculum in the three roles revealed that they agreed they gave too little time to instructional leadership. A study of the problem may indicate one of two implications. Firstly, in view of the new demands made on the principal as an instructional leader, it may be necessary to re-examine the principal's role with a view to having him give up some tasks in order that he can assume responsibility for other more important duties. Secondly, while principals value the instructional and curricular aspects of their roles, they spend most of their time and energy on other aspects of the job. The typical principal is not strong as an instructional leader.

Although principals indicated that they were quite well informed of the Ministry's expectations of them, they also appeared ambiguous about how they should perform to meet these expectations. A large proportion (about 75%) of them faced ambiguity on the relative importance of various activities of their job. More than 90% felt that they lacked both positive and negative feedback on their work.

Principals may appreciate the flexibility given them in the interpretation of the importance of their tasks, but they also seek as much direction as possible to allow them to know at what level of expectation they should perform their tasks. As perceptions differ from individual to individual, there will always be a measure of conflict. The presence of this conflict in itself is positive as it stimulates and provides professional growth and development. However, it is well to be on guard against conflict that would promote stress and negative behaviour.

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Principal Leadership Behaviour and Teacher Job Satisfaction

Cheong Heng Yuen

ABSTRACT

The findings of this study suggest that teachers who perceive their principals as being high in consideration and initiating structure are more satisfied with their jobs than those who perceive their principals to be low in both dimensions.

In addition, leadership behaviours such as promoting high morale among teachers, con-

sulting teachers on important matters, treating them as equals and putting their suggestions into operation, coordinating the work of the school, maintaining defined standards of performance, giving advance notice of change, innovating and adherence to rules and procedures can predict teacher job satisfaction.

Introduction

An emerging database, derived from studies of the relationship between principal leadership behaviour and teacher job satisfaction (Baker, 1979; Williams, 1980; Lau, 1980; Devault, 1981; Young, 1982; James, 1982; Kim, 1983; Barnard, 1983) suggests that the school principal leadership behaviour has a critical influence on teacher job satisfaction. The findings of this present study suggest that principals who are perceived high in the leadership dimensions of consideration and initiating structure have more satisfied teachers. Also principals who are high in consideration have more satisfied teachers, irrespective of whether they are high or low on initiating structure, suggesting that consideration and not initiating structure has greater effects on teacher job satisfaction.

The leadership behaviours of promoting high morale among teachers, consulting teachers on important matters before going ahead, treating teachers as equals and putting

teachers' suggestions into operation in the consideration dimension are predictors of teacher job satisfaction. Structuring behaviours such as coordinating the work of the school, maintaining the defined standards of academic performance, giving teachers advance notice of change, trying out new ideas and demanding that teachers follow standard rules and regulations of the school can also significantly increase the level of teacher job satisfaction.

Background

The study is based on the two critical leadership behaviours of consideration and initiating structure as measured by the Leadership Behaviour Description Questionnaire (LBDQ) used by Barnard (1983) and the Job Description Index (JDI), developed by Smith, Kendall and Hulin (1969).

A panel of practising teachers, school inspectors, school principals and the researcher

collaboratively modified both scales to render them more appropriate for Singapore conditions.

The questionnaire was administered to a random sample of 329 secondary school teachers in 1985. In brief, the questionnaire sought the following information:

Consideration defines the extent to which the principal is likely to have relationships with his teachers characterised by mutual trust, respect for their ideas, consideration for their feelings and a certain warmth between himself and them.

Initiating structure reflects the extent to which the principal is likely to define and structure his role and those of his teachers towards goal achievement.

Job satisfaction refers to the degree a teacher is satisfied with his job in five areas: work, pay, promotion, principal and school colleagues.

While the Pearson product-moment correlation was used to gauge the correlation between

the perceived leadership behaviours of principals as reported in the consideration and initiating structure scores and the job satisfaction score of the teachers, the t-test ascertained whether the differences between the means of the high scores and low scores on consideration and the high scores and low scores on initiating structure were statistically significant. The mean score in each leadership dimension divided the principals into the high and low score groups. To be considered as subjects in the study, the teachers had to have been in the sample schools for at least one calendar year.

Findings

Table 1 shows that the two leadership dimensions are strongly and significantly related to the job satisfaction of teachers. However, partial correlational analysis shows that when controlling for initiating structure, consideration is significantly correlated with teacher job satisfaction ($r = .39, p < .01$). But when con-

TABLE 1 — COEFFICIENTS OF CORRELATION AMONG CONSIDERATION, INITIATING STRUCTURE AND TEACHERS' JOB SATISFACTION SCORES

Variable	Consideration	Initiating Structure	Job Satisfaction
Consideration	1.00		
Initiating Structure	0.66**	1.00	
Job Satisfaction	0.56**	0.44**	1.00

** $p < 0.01$

FIGURE 1 — DIMENSIONS OF LEADERSHIP BEHAVIOUR

		Consideration		
Initiating Structure	Category 2	Category 1		Mean Score of Initiating Structure = 30.91
		C = Low IS = High	C = High IS = High	
Initiating Structure	Category 4	Category 3		Mean Score of Initiating Structure = 30.91
		C = Low IS = Low	C = High IS = Low	

Mean Score of Consideration = 29.08

C = Consideration

IS = Initiating Structure

sideration is controlled, initiating structure is not significantly related to teacher job satisfaction ($r = .12, n.s.$).

In Figure 1, the four categories of leadership behaviour are obtained by cross-partitioning the dimensions of consideration and initiating structure.

Table 2 shows that the level of job satisfaction of teachers is significantly higher in schools where the principals are perceived as being high on both dimensions (Category 1, $\bar{x} = 161.05$) than in schools where principals are perceived to be low on consideration and high on initiating structure (Category 2, $\bar{x} = 142.36$, $t = 13.0, p < .01$). However, the level of teacher job satisfaction of principals perceived as high on consideration and low on initiating structure (Category 3, $\bar{x} = 157.28$) was not significantly greater than that of principals who are low on consideration and high on initiating structure (Category 2, $\bar{x} = 142.36$); in fact, although not significantly different, the actual mean job satisfaction score of Category 3 is greater than that of Category 2. In the same way, the level of teacher job satisfaction in schools where the principals are perceived to be high on consideration and low on initiating structure (Category 3) is also not significantly higher than that of teachers in schools where the principals are perceived to be low on both dimensions; but the mean job satisfaction score of Category 3 principals is decidedly greater than that of Category 4 principals (Category 3, $\bar{x} = 157.28$ and Category 4, $\bar{x} = 140.08$).

The analysis reveals some significant findings. Principals high on both dimensions have teachers with the highest level of job satisfaction. However, principals low on consideration have teachers with a relatively lower degree of job satisfaction, regardless of whether the principals are high or low on initiating structure; the mean scores are nearly the same (Category 4, $\bar{x} = 140.28$ and Category 2, $\bar{x} = 142.36$). Furthermore, principals with high scores on consideration and low scores on initiating structure (Category 3) have teachers with nearly as high a level of job satisfaction as principals high on both dimensions (Category 1, $\bar{x} = 161.05$ and Category 3, $\bar{x} = 157.28$).

Thus far, the analysis shows that consideration, not initiating structure, is the important aspect of the principal's leadership behaviour which is closely related to the job satisfaction of teachers. This proposition is supported by the partial correlational analysis mentioned earlier — that between consideration and initiating structure, consideration is significantly related to teacher job satisfaction when controlling for initiating structure.

The results of a stepwise regression analysis, as shown in Table 3, further suggest that in the consideration dimension leadership behaviours such as promoting high morale among teachers, consulting them on important matters, treating them as equals and putting their suggestions into operation are good predictors of teacher job satisfaction.

TABLE 2 — SUMMARY DATA OF RELATIONSHIPS BETWEEN PERCEIVED LEADERSHIP BEHAVIOUR AND JOB SATISFACTION OF TEACHERS

Leadership Category	C	IS	N	Mean Job Satisfaction	SD	t-value
1	High	High	10	161.05	7.23	13.0**
2	Low	High	5	142.36	5.01	
3	High	Low	5	157.28	18.51	1.74 (n.s)
4	Low	Low	6	140.08	4.73	2.03 (n.s)

** $p < .01$

C = Consideration

IS = Initiating Structure

N = Number of schools

TABLE 3 — STEPWISE REGRESSION OF PREDICTOR VARIABLES (CONSIDERATION) ON THE DEPENDENT VARIABLE OF JOB SATISFACTION

Item No.	Variable Entered	R ²	R ² Change	F Value
7	Promotes high morale among the teachers	0.23	—	100.4**
3	Consults teachers on important matters before going ahead	0.29	0.06	66.57**
9	Treats teachers as equals	0.31	0.02	49.87**
8	Puts suggestions made by the teachers into operation	0.33	0.02	39.42**

** p < .01

It can be seen that factors that are perceived by teachers as being most important to their morale concern the personal life and well-being of the individual teacher and his relationship with the school principal. Thus, in promoting high morale, the genuine concern of the principal for the mental, physical and economic welfare of the teachers can contribute positively to teacher job satisfaction. The attitudes of the principal towards his staff are often reflected in the self-concept of the teachers and in the teacher's evaluation of his job. The teachers' emotional outlook is also affected by the principal's professional communications with them.

Schools as formal organizations are essentially goal-oriented. To ensure that the educational goals of his school are achieved, the principal has to tap the potentialities of individual teachers in his school. To do this, he has to be sufficiently perceptive to recognize the abilities of his teachers and their personal contribution towards the achievement of school goals. Thus, consulting teachers on important matters before going ahead, putting teachers' suggestions into operation and treating teachers as professional equals are ways by which a principal can exploit the potentialities of his teachers to facilitate goal achievement.

Furthermore, a principal must recognize the importance of the esteem element in the motivational development of teachers.

Teachers gain self-esteem when their worth and contribution are recognised by their principals. Once this need is met, teachers will operate as self-motivated, responsible and dedicated professionals, requiring little or no supervision.

Likewise, in the initiating structure dimension in Table 4, coordinating the work of the school, maintaining the defined standards of performance, giving teachers advance notice of change, trying out new ideas in the school and demanding that teachers follow standard rules and regulations are the instrumental behaviours of principals that increase teacher job satisfaction.

Schools like other formal organizations have their share of competing demands on their time and the available resources of different departments, subject specialists, special projects and programmes. Schools are also characterised by complexity in organization, a diversification of goals, and the varied nature of tasks and functions. In order to ensure that the total effort of the school is directed at goal achievement, the principal's role in harnessing the potential of his teachers and coordinating all the instructional strategies and ancillary services that support these strategies is vital. Proper coordination can increase control over achievement of the school's goals.

In order to do this, the principal often works to increase reliability in the decision-making processes and in the behaviour of teachers and

TABLE 4 — STEPWISE REGRESSION OF PREDICTOR VARIABLES (INITIATING STRUCTURE) ON THE DEPENDENT VARIABLE OF JOB SATISFACTION

Item No.	Independent Variable Entered	R ²	R ² Change	F Value
7	Sees to it that work in the school is coordinated	0.19	—	80.53**
10	Maintains defined standards of performance	0.23	0.04	49.63**
5	Gives advance notice of change	0.26	0.03	37.56**
1	Tries out new ideas in the school	0.27	0.01	30.30**
8	Demands that teachers follow standard rules and regulations	0.28	0.01	25.10**

** p < .01

students. This is often achieved through introducing and implementing policies, and standardising operating procedures, rules and regulations to guide behaviour within the school as a human organization.

Teachers often find comfort in the knowledge that their work is supported by an efficient organizational infrastructure and available resources. In this sense, teachers in this study prefer principals who are high in initiating structure possibly because they perceive ambiguity and/or frustration in their environment and want a more structured leadership in order to reduce ambiguity of roles and expectations.

Policy Implications

The findings suggest that teacher perceptions of the principal's leadership behaviours in school can influence their degree of job satisfaction, and in that sense, to have real consequences. Clearly, additional studies are required to validate the assumptions of this study, and it is too early to generalise since the findings relate only to secondary schools. Nevertheless, the findings suggest general implications in the following areas: (1) pre-appointment training, (2) selection of principals, and (3) in-service education.

Pre-appointment training. To the extent that certain leadership behaviours of principals are related to teacher job satisfaction, these behaviours should provide a primary focus for programmes designed to train principals. Local principal training agencies should take a closer look at the predictive validity of selection criteria in the light of the findings of this study. Desired leadership behaviours should be reinforced during the training programme and should be an integral part of the training outcome.

Selection of principals. The selection criteria should include these two leadership dimensions as they are linked to teacher job satisfaction. The leadership behaviours of principals that can maximally meet the needs of self-worth, growth and satisfaction of teachers will have a high probability of success in achieving the school's goals or mission. Satisfied teachers are productive teachers. This is a fundamental assumption of managing for excellence. The focus on people is important because it is people who create and maintain organizational effectiveness whether in schools or in any other organisation.

In-service education. As all schools in Singapore have principals already in place, and principal transfers are kept to the minimum, there is a need to look at the current provision of in-

service training programmes for principals to ensure that the desired principal leadership behaviours of consideration and initiating structure are incorporated into such programmes and reinforced.

Leadership Profile

By asking teachers to complete the questionnaires used in this study, a principal can obtain a profile of his leadership behaviour in school as perceived by his teachers. He can then find out the aspects of consideration which raise concern in his school by carefully analysing the individual responses to each of the individual variables in the consideration dimension. In this way, a perceptive principal can acquire a knowledge of the dynamics of the school organization.

The next stage of this strategy is to diagnose the potential trouble areas. The principal then assesses how serious these potential trouble areas are to the school organization and comes up with several solutions to improve the situation. He can do this by consulting his key personnel and even teachers who may possess the necessary expertise or knowledge to help remedy the situation. The principal then works out an action plan alone or collaboratively with selected members of his staff. The next stage is to implement the desired strategy for change. The last stage in the overall strategy is to evaluate the effectiveness of the prescription that has been implemented. Continuous monitoring and evaluation are necessary because planned changes in the social system often take a long time to bear fruit.

Thus, in the process of bringing about organizational change, the principal will have proceeded through the following stages: (1) gaining knowledge of the organization, (2) diagnosis, (3) prognosis, (4) prescription and (5) evaluation. Brown (1965) describes these stages as component steps of a clinical strategy for bringing about change in schools.

Conclusion

One might criticise a study which is based on perceptual data acquired from a number of individual teachers because it does not attempt to find the absolute truth, but merely the feelings and beliefs of teachers about the way they perceive the principal's leadership behaviour. It is, however, the feelings of the teachers that influence their attitudes and their behaviour. The usefulness of teachers' observations of principals lies in the fact that they can provide the principal with a leadership profile that can be periodically reviewed and improved upon.

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The Motivation of Secondary School Teachers and Their Commitment to the Teaching Profession

Lim Han Soon nee Goh Shir Boon

ABSTRACT

This study attempted to use a Likert-scale instrument based on Herzberg's Theory to identify different groups of teachers: "motivation seekers", "hygiene seekers", and those concerned or not concerned with "motivator and hygiene factors". Another purpose was to determine whether a relationship existed between motivation and hygiene, between motivation and commitment, and between hygiene and commitment. The question of whether the demographic variables (e.g. number of years of teaching experience, years in the same school, sex, marital status, academic qualifications, level and stream taught) had any effect on motivation, hygiene and commitment was also examined. The sample consisted of 661 teachers drawn from 19 randomly-picked Government secondary schools.

It was found that Herzberg's Theory could be applied in education to identify groups of teachers. Analysis showed that the

"high motivation seekers" were more committed than "low motivation seekers" but there was no significant difference in terms of commitment between "high hygiene seekers" and "low hygiene seekers". Significant relationships existed between motivation and hygiene, between motivation and commitment but not between hygiene and commitment. Some demographic variables seemed to have an impact on motivation, hygiene and commitment. Four main extreme groups were also identified. The results showed that there were significant differences in commitment scores between these four extreme groups.

Further research into teachers' motivation and commitment to the teaching profession and into how they felt about their work could be conducted using a Likert-scale questionnaire based on Herzberg's Theory to provide additional support for the reliability and validity of the technique used in this study.

Introduction

The motivation of teachers is an important area of study. It has implications for principals as managers of the school organization. Principals have, among other responsibilities, the task of providing an environment that could encourage greater involvement and commitment from the teachers. An effective principal has to know what could motivate his teachers to greater performance and how he could be in-

involved in creating and maintaining an environment that encourages teachers to work together as a team in the school organization.

Studies have not only shown a general relationship between job satisfaction and performance but also that higher levels of satisfaction are associated with higher productivity (Herzberg et al, 1959; Likert, 1961; Bennis, 1967). A variety of theories on work motivation has

been formulated and there is a considerable amount of literature on work motivation, and some studies have attempted successfully to test and evaluate these theories empirically (McClelland, 1961; Porter, 1964; Lawler and Suttle, 1972).

Although much research has been done on motivation and job satisfaction, based on Herzberg's Theory, most of the studies concentrate on non-managerial employees in business and industry. There are fewer studies on motivation and job satisfaction based on Herzberg's Theory in the teaching profession. Sergiovanni (1967) replicated Herzberg's study with teachers and Schmidt (1976) with school administrators.

Herzberg (1959) has propounded that individuals have different needs and there are individuals who are more concerned about 'motivator factors' than 'hygiene factors' and there are others who are more concerned about 'hygiene factors'. Herzberg's Theory is different from other theories of satisfaction in that it is based on a single continuum, with satisfaction at one end and dissatisfaction at the other. According to the Theory, there are two distinct and separate sets of factors which contribute to job satisfaction and job dissatisfaction and that only one set known as "motivator factors" contributes significantly to job satisfaction and greater performance. The "motivator factors" resulting in satisfaction are related to intrinsic aspects of work and they are achievement, recognition, responsibility, advancement and work itself. The "hygiene factors" resulting in dissatisfaction are related to extrinsic aspects of the work situation and they are policy, working conditions, inter-personal relation with superiors, colleagues and subordinates, pay and security.

The study (Lim, 1985), conducted in Singapore, attempted to use a Likert-scale instrument based on Herzberg's Theory to identify different groups of teachers, namely, "motivator seekers", "hygiene seekers", those concerned with both "motivator" and "hygiene" factors and those who are not concerned at all with "motivator" and "hygiene" factors. Another purpose was to determine whether a relationship existed between motivation and hygiene, between motivation and commitment, and between hygiene and com-

mitment. The question of whether the demographic variables (number of years of teaching experience, years in the same school, sex, marital status, academic qualifications, level and stream taught) had any effect on motivation, hygiene and commitment was also examined.

Different groups of teachers would have different levels of performance and commitment. Commitment to the teaching profession was operationally defined and identified by using observable teacher behaviour as follows:

- (a) engage actively in professional activities within the organization and out-of-school professional activities;
- (b) engage actively in school programme/school projects;
- (c) volunteer to take on extra work, duties and responsibilities;
- (d) involve in counselling pupils who have learning/personal/emotional problems;
- (e) attend professional courses;
- (f) use innovative methods of teaching;
- (g) engage in ways to improve professional competency;
- (h) share knowledge with other teachers to promote teaching;
- (i) engage in activities that promote the welfare of teachers and elevate the professional status of teachers; or
- (j) engage actively in activities organized by the professional bodies/associations.

The findings of the study have implications for the principals. These different groups of teachers require different styles of management with a view to encouraging them to move to higher levels of performance. The grouping of various groups of teachers also has implications for the policy makers with regard to the recruitment, selection, training and promotion of teachers.

The need to assess the situation is enhanced if one takes into consideration the report made by Dr Goh Keng Swee and his team with regard to teachers' job satisfaction and morale. One of the existing problems then was the morale of the teachers. From the sample survey involving 140 teachers in Singapore, 18% of them said that their morale was low, 52% average and 30% high (Goh, 1979, p. 7).

Moreover, there is the recent emphasis on the need for quality education. One of the ways to ensure quality education is to make sure that there are effective principals and highly motivated teachers. Hence how teachers feel about their jobs and the degree of fulfilment and satisfaction are important indicators for the principals as managers and administrators in the school organizations and for those officials in the Ministry of Education who are responsible for making policies in education.

Another reason for the need to assess the situation and find out how teachers feel about their jobs and the degree of fulfilment and satisfaction is the present service conditions that prevail for all teachers in secondary schools in Singapore. The appointment of teachers is made by the Government and there are different categories of teachers appointed to different posts based on qualifications. There are teachers who possess only General Certificate of Education (GCE) 'O' Level passes, others who have passed at the GCE 'A' Level and still others who hold degrees from local and overseas universities. Each type of appointment, whether graduate or non-graduate, carries with it its own salary scale. For graduates, the post is known as General Education Officer I and for non-graduates, General Education Officer II. Teacher training courses for graduates and non-graduates are conducted at the Institute of Education. The one-year full-time training course is for university graduates leading to the Diploma in Education. The two-year full-time course is for non-graduates leading to the Certificate in Education. These non-graduates possess GCE 'A' Level passes. On successfully completing these courses, teachers could be appointed to teach in either Government schools or Government-aided schools.

On appointment, teachers whether graduates or non-graduates are placed on a two-year probation. They will be confirmed in their appointment and placed on the permanent pensionable service after their probation and when given good or better reports. Teachers from Government-aided schools are placed on the permanent service under the Central Provident Fund Scheme (non-pensionable).

In Singapore, the Ministry of Education has been making attempts to build up a strong and

dedicated body of teachers who could then, under the guidance and leadership of principals, implement the various changes in education effectively. In trying to draw the right people to the teaching profession, stringent selection criteria and interviews have been used. The salaries of teachers have also been revised to make the service more attractive.

In order to recognise the teachers who perform well, rewards and incentives are provided. National Day Awards are given and these include the Public Administration Medals for outstanding work (Gold, Silver and Bronze), Efficiency Medals for efficiency and Long Service Medals for officers with 25 years of service. Singapore Airline tickets are given to officers (and their spouses) for outstanding performance. Annually, about 400 teachers are invited to tea hosted by the President at the Istana. Besides these incentives, the Ministry is also looking into the possibility of improving the career path of teachers so that they can "regard their roles as fulfilling, challenging and not merely jobs", as announced by the Minister for Education, Dr Tony Tan, in his opening address at the Schools Council Meeting on 2nd February 1985 (Schools Council Minutes, 1985). Such teachers who perform well and are willing to assume positions of higher responsibility will be promoted to the Senior Education Service.

Methodology

The sample consisted of 661 teachers drawn from 19 randomly-selected Government Secondary Schools. The instrument used to collect data was adapted from Kaufman (1982). This questionnaire consists of three parts: part I, measuring feelings of satisfaction, part II, measuring the feelings of dissatisfaction and part III, assessing the activities engaged in by committed teachers. Examples of items constructed by the researcher herself to measure feelings of satisfaction are:

- Q2 Being nominated to a working committee
- Q6 Having a supervisor to praise your work
- Q8 Having an opportunity to work with students of different abilities.

Examples of questions constructed by the researcher to tap feelings of dissatisfaction are:

- Q3 Administration mishandling the timetable schedule
- Q4 Class sizes larger than you would like
- Q22 Being assigned non-teaching duties.

Examples of questions constructed by the researcher to measure commitment are:

- Q3 Get students involved in various school learning projects
- Q11 Adopt new ideas from courses and workshops to improve classroom teaching methods
- Q17 Head a committee to evaluate the effectiveness of instructional resources.

The instrument was validated and there was high internal consistency. (See Table 1)

TABLE 1 — INTERNAL CONSISTENCY RELIABILITIES (ALPHA) FOR THE INSTRUMENT

	Part One Satisfaction	Part Two Dissatisfaction	Part Three Commitment
Kaufman's Study	0.92	0.89	0.96
Researcher's Pilot Study	0.94	0.96	0.89
Researcher's Final Study	0.95	0.96	0.95

Findings

It was found that Herzberg's Theory could be applied in education to identify groups of teachers. Analysis showed that the "high motivation seekers" were more committed than "low motivation seekers" but there was no significant difference in terms of commitment between "high hygiene seekers" and "low hygiene seekers". Statistically significant relationships existed between motivation and hygiene, between motivation and commitment but not between hygiene and commitment. Some demographic variables seemed to have an impact on motivation, hygiene and commitment.

Four main extreme groups were also identified. The results showed that there were significant differences in commitment scores between these four extreme groups. A significant relationship existed between sex and the

four main extreme groups but there were no relationships between these four extreme groups and the following variables: marital status, academic qualifications, teaching different levels, teaching different streams, years of teaching experience and years in the same school.

Further research into motivation and commitment to the teaching profession and into how teachers felt about their work could be conducted using a Likert-scale questionnaire based on Herzberg's Theory to provide further support for the reliability and validity of the technique employed in this study.

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The Relationship between Teacher Morale and School Climate

Ruth Wong Yeang Lam

ABSTRACT

This study investigates the relationship between teacher morale and school climate in order to find out which aspects of the school climate affect teacher morale most. Two questionnaires were administered to 305 teachers in six secondary schools in

Singapore — the Staff Morale Questionnaire (SMQ) and the School-level Environment Questionnaire (SLEQ). Climate subscales were found to be significant predictors of teacher morale, with *Professional Interest* explaining the greatest amount of variance.

Introduction

Teaching has often been considered a “marginal profession” because it does not enjoy the privileges normally accorded to professionals. Lamentably, society regards teachers as respectable but not respected; as necessary but not essential; as general craftsmen but not professionals; as those who can’t do but simply teach.

In the face of such a social reality which accords teaching a low status occupation, the self-image of teachers is lowered, their sense of power is decreased, and this in turn lowers their level of competence and morale in wider circles of social interaction.

Despite the amount of time and the authorized power teachers have in the classroom, they have been unable to present an acceptable image of their value to society. This is partly because society devalues the skills and competencies teachers have to offer. The teachers are made responsible for things beyond their control — from being babysitters (invigilating students) to serving as social workers (checking out the family background of the students). In most schools, teachers are treated as interchangeable parts. Regardless of

their different talents and experiences, they are given identical instructional roles, responsibilities and prestige.

Indeed, the teaching profession seems imperilled. The rising expectation of parents on teachers, the strict emphasis on covering the syllabus, and the increasing obsession with examination results, lead to an erosion of the creative challenge and idealism of teaching. Today teaching is no longer a distinctive occupation. Lortie (1975, p. 10) described the teacher’s social position as “special but shadowed”, and lamented that teaching has not been accorded the respectability that it rightfully deserves.

To what extent has this situation been brought about by the school climate? Eicholtz (1984) and Sergiovanni (1984) have concurred that school climate is the key to excellence and effectiveness in our schools. A positive school climate serves as a catalyst that makes people willing to do more to help the institution and its people reach their objectives. It affects and permeates all aspects of the school — achievement, attendance, teacher and student morale, school

spirit, confidence of parents in the school, student and teacher self-image and self-esteem, and even curriculum and instruction. It results in the commitment of every one in the institution to be a winner and to produce winners. Positive school climate results from team effort of the teachers, students, parents and community. However, many studies (Coleman, 1983; Chapman & Lowther, 1982; Kelley, 1980, Ogilvie & Sadler, 1979; Gross & Herriott, 1965) have pointed out that the most critical contributing factor is the principal — he serves as the instructional leader, the motivator, and the moulder of the school climate

This study attempted to assess the situation in Singapore, and to examine the effect that school climate has on the morale of some Singapore teachers.

Methodology

Sample

The population for this study covered all the government secondary schools in Singapore where

1. the principal has been there as principal for at least two years; and
2. the student enrolment is or exceeds 1500.

Out of this population, an opportunity sample of six schools was selected. All the teachers in the six schools were approached to participate in this study. The sample size was 305.

Instrumentation

The Staff Morale Questionnaire (SMQ) by K.R. Smith was chosen to measure staff morale in this study. Its items distribute across three factors: Cohesive Pride, Personal Challenge and Leadership Synergy. These are defined as follows:

Cohesive Pride — This reflects the sense of cooperativeness, and describes a staff who feel that they are working together towards the school's objectives.

Personal Challenge — This represents the incentive derived from satisfaction in the school situation, and measures the degree to which a group actually utilizes its potentiality for freedom.

Leadership Synergy — This relates to the group energy generated and released among the

teachers by the school's leaders, and was seen as the most basic and important factor in morale.

The school climate was measured by the School-level Environment Questionnaire (SLEQ) designed by Rentoul & Fraser (1983). The three key dimensions in this instrument which are crucial for measuring human environment are the following:

Relationship — This assesses the extent to which people are involved in the environment, the extent to which they support and help one another, and the extent of spontaneity and free and open expression among teachers. The two subscales which come under this dimension are *Affiliation* and *Student Supportiveness*.

Personal Growth/Goal Orientation — This assesses the basic directions along which personal development and self enhancement tend to move in an environment, and is characterized by the subscales of *Professional Interest* and *Achievement Orientation*.

System Maintenance and Change — This evaluates the extent to which the environment is orderly, clear in its expectations, maintains control, and is responsive to change. The four subscales which measure this are *Formalization*, *Centralization*, *Innovativeness* and *Resource Adequacy*.

Findings

Pearson's product moment correlation was computed to check on the extent of the relationship between teacher morale and school climate. The data collected showed that the correlation between teacher morale and school climate in this study was 0.59 ($p < .01$). Table 1 presents the correlation matrix for the morale and climate subscales.

To determine which of the eight climate subscales had a significant contribution to make to teacher morale, multiple regression techniques were used. It was found that a total of 57% of the variance in teacher morale was explained by the eight climate subscales (Table 2).

However, this 57% of the variance was explained by just five climate subscales. These were *Professional Interest* (43%), followed by *Innovativeness* (8%), *Centralization* (3%), *Student Supportiveness* (2%) and *Resource Adequacy* (1%).

TABLE 1 — CORRELATION MATRIX OF SUBSCALES IN THE SMQ AND THE SLEQ

	CP	PC	LS	AF	SS	PI	AO	F	C	I
PC	0.3									
LS	0.5	0.4								
AF	0.4	0.3	0.4							
SS	0.1	0.4	0.3	0.3						
PI	0.6	0.4	0.5	0.6	0.2					
AO	0.2	0.3	0.1	0.2	0.2	0.2				
F	0.2	0.1	0.03	0.1	0.0	0.2	0.3			
C	-0.3	-0.3	-0.5	-0.3	-0.3	-0.3	-0.02	0.2		
I	0.5	0.5	0.6	0.5	0.3	0.7	0.2	0.07	-0.4	
RA	0.4	0.3	0.5	0.5	0.3	0.5	0.2	0.1	-0.2	0.5

Legend: CP — Cohesive Pride
 PC — Professional Challenge
 LS — Leadership Synergy
 AF — Affiliation
 SS — Student Supportiveness
 PI — Professional Interest
 AO — Achievement Orientation
 F — Formalization
 C — Centralization
 I — Innovativeness
 RA — Resource Adequacy

TABLE 2 — MULTIPLE REGRESSION OF SCHOOL CLIMATE SUBSCALES THAT CONTRIBUTE TO VARIANCE IN TEACHER MORALE

Variable	R ²	R ² added	B value	F value
Professional Interest	0.4341	—	1.12	232.43
Innovativeness	0.5103	0.0762	0.79	157.33
Centralization	0.5446	0.0343	1.56	119.98
Student Supportiveness	0.5641	0.0195	1.29	97.04
Resource Adequacy	0.5759	0.0118	1.18	81.21
Formalization	0.5821	0.0062	1.08	69.17
Achievement Orientation	0.5832	0.0011	1.05	59.36
Affiliation	0.5841	0.0009	1.08	51.96

All F values are significant at the 0.001 level.

Discussion of Findings

It is undeniable that school climate plays a key role in shaping teacher morale. School leaders and administrators should therefore work towards an improvement of the school climate to enhance teacher morale, thereby increasing productivity and school effectiveness.

In a career such as teaching, professional development is crucial to prevent professional stagnation, and to provide renewal. In this study, it was found that *Professional Interest* explained the greatest amount of variance in climate (43%). Studies carried out by Chapman & Lowther (1982) and Coleman (1983) also stress the importance of injecting

Professional Interest into teachers so that they will constantly want to learn and introduce new instructional methods to better their teaching. Traditional methods can no longer suffice; in fact, they have become ineffective in teaching our new generation of students who are exposed to advanced and sophisticated technology.

It must also be mentioned that in Singapore, it is not uncommon to find principals reluctant and at times unwilling to release their good teachers to attend full-time courses, and having in their places inexperienced relief teachers. School leaders should be ready to make short-term sacrifices for long-term benefits, and

should take it upon themselves to encourage their staff to go for professional development.

An innovative school is one which is open to new ideas and receptive to progressive changes. The findings of this study indicated that *Innovativeness* explained the greatest amount of variance in teacher morale (after *Professional Interest*), accounting for 8% of the total variance. While the teachers were generally unanimous in agreeing that resources were adequate in their schools, it was the older teachers and the leaders who were most positive about this aspect of the school climate. It is heartening to note that the Ministry of Education is working towards giving schools more independence, an identity and pride, and a stronger sense of mission.

Centralization surfaced as one climate subscale which deserves special mention. After *Professional Interest* and *Innovativeness*, it explained the greatest amount of variance in teacher morale (3%). Previous attempts at examining factors causing low teacher morale have revealed a lack of consultation as one of the key factors. The *Report on the Ministry of Education* (1979) also recorded a lack of consultation as one reason causing low teacher morale. The importance of participative decision making (PDM) cannot be denied as it allows teachers to utilize their knowledge and skills. This increases their job satisfaction, enhances work achievement, and promotes loyalty and commitment to the school and its leaders. Those who feel a sense of challenge in their work and are given the autonomy to carry out their tasks are often the ones who feel adequately rewarded enough to stay on in the teaching profession.

Though *Formalization* did not appear to be very reliable in this study, findings in this subscale seemed to lend support to the contention that high job codification is desirable, but excessive supervision lowers morale (English, 1975; Hoy et al., 1977; Schwab, 1980). Increasingly, teachers are becoming more vocal in expressing and exercising their professional rights.

Several studies have pointed to the importance of *Relationship* in a profession such as teaching, where the cellular nature of the school organization restricts maximum interaction among colleagues (Rosenholtz & Smylie, 1984;

Coleman, 1983; Little, 1982; Willower et al., 1978). In this study, it was seen that the older teachers (and consequently those with longer school and teaching experience) and those holding administrative posts in the school registered higher average scores for *Cohesive Pride*, *Affiliation* and *Student Supportiveness*.

In all analyses of *Achievement Orientation*, no significant differences were found among teachers divided into different categories. This shows that the teachers in Singapore schools, regardless of their age, school experience, teaching experience and internal designations, were singular in their aim to produce good academic results. Again, this is expected because there is a great emphasis on academic excellence in Singapore.

Implications of the Findings

The findings of this study generated several implications. First and foremost, low morale must be recognized as a critical and detrimental condition which needs immediate attention if school climate is to be positive and constructive for both students and teachers. It goes without saying that higher morale leads to more effective instruction and improved student learning.

The problem of low teacher morale is further aggravated by the fact that Singapore is still very short of teachers, especially graduate teachers. Knowing the causes and factors which affect morale will help to bring about the necessary changes to encourage more to enter the profession, and once they are in, to want to stay on.

The results showed that for the subscale of *Centralization*, the older teachers expressed disturbingly low morale. While acknowledging the importance and benefits of participative decision making and the training of young blood to take over the reins of leadership in the school, some empathy should be directed to the older teachers who, though they have no academic qualifications to boast of, have put in many years of dedicated service to the school and to the profession. Care and tact must be exercised to see that their morale is not affected adversely as younger graduate teachers assume more responsibilities.

The study also indicated that the ordinary teachers preferred to have their duties spelt out

for them, but they resented excessive supervision as they regarded it as an intrusion into their professional autonomy. The *Report on the Ministry of Education* (1979) has previously found that one of the reasons teachers cited as contributing to their low morale was the many changes in educational policies implemented without any consultation with them. This appeared to reinforce the above finding that, more and more, teachers are demanding to be professionals in their own right. This would have implications for the implementation of future policies by the Ministry of Education.

What is crucial to note is that the findings of this study support the view that the facets of dissatisfaction and the factors causing low morale among the teachers are within the locus of control exercised by school administrators, and thus within their power to change. The more viable knowledge these administrators have about such factors, the more effectively they can function to uplift teacher morale and mitigate conditions which might tend to depress it.

Postscript

Modernization and sophisticated living has eroded, to a great extent, the traditional respect for the teacher. This is particularly so in the West where student discipline has deteriorated, and teacher burnout is a pressing problem. Here in Singapore, though the problem has not reached as great a magnitude, and the "guru" of the East is relatively respected, a grave shortage of teachers (especially graduate teachers) in recent years has necessitated an examination of the situation. If the profession is not attracting enough of the right people, then, invariably, our schools and our students will suffer. Teacher morale and school climate are crucial variables affecting the educational productivity in school. It is hoped that research in this area will provide important insights into the system of educational administration, and contribute towards improving the lot of the teachers. Once their morale is raised, and the school climate is conducive for teaching and learning, productivity will naturally increase.

This is vital for Singapore where manpower is the only resource, and at a time when we are all striving towards achieving excellence in education and for our nation.

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Classroom Learning Environment, Academic Self-Concept and Achievement Among a Sample of Primary Six Pupils

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ABSTRACT

A strong tradition of research in developed countries has established consistent relationships between pupil outcomes and their perceptions of the classroom learning environment. The present study seeks to test the theory advanced by Moos (1979) and others who contend that the nature of human environments exerts a strong influence on a person's functioning, in this particular instance, a pupil's cognitive achievement within the environment. This study measured pupils' perceptions of their classroom learning environment, self-concept of academic ability and pupils' socio-economic

status and examined their contribution to academic achievement.

The results of the study revealed significant and consistent relationships between three of the classroom environment variables of teacher support, order and organization and innovation and the dependent variable, achievement. The relationship between academic self-concept and academic achievement was significantly related but the relationship between pupils' socio-economic status and academic achievement was inconclusive.

A strong tradition of research in developed countries has established consistent relationships between pupil outcomes and their perceptions of the classroom learning environment. The study being discussed seeks to test the theory advanced by Moos (1979) and others who contend that the nature of human environments exerts a strong influence on a person's functioning, in this particular instance, a pupil's cognitive achievement within the classroom environment. This particular pupil outcome, i.e. scholastic achievement, was chosen as the outcome of the study because the Goh Report (1979) drew attention to the variations of academic performance among pupils and also to the higher rate of failure in the Primary School Leaving Examinations (PSLE).

Schools have often lamented about the poor academic performance of their pupils, attributing such performance to the low socio-economic status of the pupils' families. It is believed that such family backgrounds are unable to provide the correct kind of home environment and motivation to reinforce whatever is taught in schools.

It has been found in other countries, especially in the United States, that the most powerful predictor of school performance is socio-economic status (SES); the higher the SES of the pupil's family, the higher the pupil's academic achievement. This relationship has been documented in countless studies and appears to hold, no matter what measure of status is used, whether it be the occupation of

the principal breadwinner, family income, parents' education or some combination of these (Boocock, 1981). This study included an SES measure as one of the independent variables to ascertain its relationship to academic achievement.

While this may be true, as has been found, surely the effects of schooling cannot be disregarded. Pupils acquire knowledge and skills in schools, are periodically assessed and this attainment is measured as academic achievement.

The classroom is an important locus for the personal and academic growth of pupils, and classrooms have distinct learning environments that mediate such growth (Moos & David, 1981). Particular classes that create special experiences such as contacts with outstanding teachers may have more influence on pupils than do overall school programmes. A classroom represents the physical environment or the ecology of the setting, which may profoundly influence the psychological states and behaviours of its inhabitants. The human social environment or the social ecology of the classroom involves interactions with the physical and social dimensions of the learning environment. People and environments influence each other reciprocally to bring about a distinct social ecology which may help explain the differences in educational outcomes. This study focussed on a set of classroom environment

variables and examined their relationship to academic achievement.

The third independent variable which was used to ascertain its relationship to cognitive achievement was pupils' self-concept of academic ability. Anderson (1981) defined self-concept as the set of attributes people associate with themselves as pupils in an academic setting. This relationship has been well researched and the reviews of research on self-concept and its relationship to school achievement have verified the existence of a positive correlation between individual self-concept and achievement (Purkey, 1970). Kifer (1973) in his study of the relationship between academic achievement and personality characteristics of pupils, concluded that with success in academic tasks come positive personality characteristics, with failure, comes lower regard for self and abilities.

Diagrammatically the research method is shown in Table 1.

The purpose of this study was to investigate to what extent the three sets of independent variables, in particular the classroom social environment variables, contributed to the variation in academic achievement in a sample of primary schools.

Sampling for the Study

A total of 658 subjects (246 boys and 412 girls) in 16 primary six classes were drawn from eight

TABLE 1 — SUMMARY OF THE VARIABLES STUDIED AND THEIR MEASUREMENT

Independent Variables				Dependent Variable	
Input		Process		Outcome	
Variable	Measured by	Variable	Measured by	Variable	Measured by
Socioeconomic status	Principal breadwinner's occupation	Classroom learning environment	Revised Classroom Environment Scale questionnaire (Trickett & Moos)	Academic Achievement	PSLE examination results
		Self-concept of Academic Ability	Brookover Self-concept of Academic Ability		

schools. The eight schools represented four government and four government-aided mission schools in Singapore. High-achieving and low-achieving schools were represented from each type of school. From each school two primary six classes were randomly selected for the study. For each of the classes, it was a prerequisite that the form teacher taught English, Mathematics and Science. The aggregate score for these three subjects was deemed as representing the academic achievement of the pupils based on the 1984 PSLE (National Examination) results.

Research Design

The statistical techniques used were Pearson's product-moment correlation and multiple linear regression.

Instrumentation

To ensure the accuracy of the findings, the instruments for measuring the variables had to be reliable and valid. For this purpose, a pilot study was first carried out to ascertain the reliability of the instruments.

To assess the classroom social learning environment, a well-tested instrument, the Classroom Environment Scale (CES), developed by two well-known American psychologists, Moos and Trickett, was used. After the pilot study, minor changes were made in the instrument, thereafter called the Modified CES. The CES attempted to measure the pupils' perception of the social learning environment of the class on nine dimensions:

- 1 Involvement: The seven items measured the extent to which pupils were attentive and interested in class activities and participated in discussions.
- 2 Affiliation: The seven items attempted to measure pupil friendship.
- 3 Teacher Support: The six items in the subscale measured the extent of help, interest, trust and friendship the

teacher showed towards pupils.

- 4 Task Orientation: There were six items which measured the "academic press" of the class and the importance of sticking to the subject matter.
- 5 Competition: This subscale of five items assessed the emphasis on pupils competing with one another for grades.
- 6 Order & Organization: There were seven items on this subscale, which assessed the orderliness of the class and organization of assignments and class activities.
- 7 Rule Clarity: It attempted to measure the emphasis of establishing and following a clear set of rules and on pupils knowing what the consequences would be if they did not follow them.
- 8 Teacher Control: The four items measured how strictly the teacher enforced rules and the severity of punishment for rule infraction.
- 9 Innovation: The seven items in this subscale attempted to find out how much pupils contributed to planning class activities initiated by the teacher.

Pupils' Self-Concept of Academic Ability

This was measured by the Brookover Self-Concept of Academic Ability Scale. This scale focussed on self-concept in the context of education and it attempted to measure the evaluation a pupil made of himself in respect of the ability to achieve tasks in general compared to other pupils.

Socio-Economic Status of Pupil

This was measured by the principal breadwinner's occupational status based on the classification issued by the Ministry of Education. It was measured on an eight-category hierarchical classification.

Findings of the Study

1. The first hypothesis states that there were significant differences in the pupils' perceptions of the CES. There were statistically significant differences in the pupils' perception of the nine classroom environment dimensions among schools.

Some interesting information emerged:

- a) Pupils in low-achieving schools perceived their classes to be higher on all three dimensions of involvement, affiliation and teacher support (Relationship Domain) than pupils in high-achieving schools. In other words, pupils in low-achieving schools perceived their classes to be more involved in class activities, more friendly with each other and indicated that their teachers were more supportive of them than pupils in high-achieving schools.
- b) For the Goal Orientation Domain, pupils in low-achieving schools perceived their classes to be more task-oriented, though less competitive.
- c) For the System-Maintenance and Change Domain, pupils in low-achieving schools perceived their classes to be more orderly and organized, clearer on rules and higher on innovation, but they perceived their teachers to be less flexible.

2. The second hypothesis states that there are statistically significant relationships between classroom environment variables and academic achievement.

The findings as listed below revealed positive association or correlation between the CES dimensions and academic achievement and negative correlations with academic achievement.

- a) Teacher support and academic achievement were positively correlated. (Relationship Domain)

- b) Order and Organization and academic achievement were positively correlated. (System Maintenance Domain)
- c) Teacher Control and academic achievement were negatively correlated. (System Maintenance Domain)
- d) Innovation and academic achievement were negatively correlated. (System Maintenance Domain)

The above four sets of findings supported research findings in the United States, e.g. O'Reilly (1975) found achievement in high school mathematics classes to be related to the Relationship Domain.

Generally, the findings in this study for the System Maintenance Domain of the CES support the findings of other studies.

However, the findings for the Goal Orientation Domain, i.e. Task Orientation Dimension and Competition, do not support findings of other researchers. The inconclusive and inconsistent findings of the study which do not support the previously cited research findings may be interpreted in the following manner. High expectations for task performance can facilitate achievement for one pupil but can create debilitating anxiety for another. Local schools are known to be highly task-oriented and competitive and these goal-orientation environments may not be congruent with the needs of the pupils. As Maehr (1976) has noted, task orientation and competition may encourage cognitive growth for some pupils, but for others, they can result in absenteeism, poor achievement and an increased chance of dropping out.

3. The third hypothesis states that there are statistically significant differences in the pupils' self-concept of academic ability between schools.

Table 2 shows the means and standard deviations of the Self-Concept of Academic Ability (SCAA) among the high-achieving and low-achieving schools.

It is observed that there were no statistically significant differences in the self-concept of academic ability scores among schools. The maximum possible score was 40. A score of 40 would indicate extremely

TABLE 2 — MEANS AND STANDARD DEVIATIONS OF THE SELF-CONCEPT OF ACADEMIC ABILITY OF HIGH-ACHIEVING SCHOOLS

School B		School E		School F		School G		School H		Overall
M	SD									
27.75	3.91	25.74	3.26	26.63	2.71	25.84	4.14	26.08	4.14	26.40

MEANS AND STANDARD DEVIATIONS OF THE SELF-CONCEPT OF ACADEMIC ABILITY OF LOW-ACHIEVING SCHOOLS										
School A		School E				School D		Overall		
M	SD	M	SD	M	SD	M	SD			
25.91	2.00	26.42	3.25	26.41	3.16	26.24				

high self-concept, which a pupil would rarely achieve unless he was brilliant or he was extremely egoistical. The average score for high-achieving schools was 26.40 and for low-achieving schools 26.24. In other words, whereas one would expect pupils in low-achieving schools to have lower scores, this expectation was not realised. In fact, two low-achieving schools, School E and School D, had higher means (26.42 and 26.41 respectively) than two high-achieving schools, Schools E and G (25.74 and 25.84).

- The relationship between self-concept and academic achievement was positive for both high and low-achieving schools, with the positive relationship being stronger in the high-achieving than in the low-achieving schools. The findings of this study confirmed the findings of other researchers, e.g. Brookover (1962) and Shavelson (1976), both of whom confirmed that individual self-concept, particularly self-concept in academic roles, was positively related to achievement.
- There is a statistically significant relationship between pupils' socio-economic status and academic achievement. Only two schools showed positive correlations, i.e. the higher the SES, the higher the academic achievement, whilst six schools showed no such correlations. It, however, serves as a contributory finding to be confirmed by local studies that in the local context no strong relationship between these two variables can be expected.
- The amount of variation in academic achievement predicted by the CES variables is substantially more than that predicted by

either SES or self-concept of academic ability alone.

This was confirmed by running a set of regression analyses and by varying the order of entry of the variables. The hypothesis was supported, i.e. the CES contributed to a large amount of the variance in academic ability. However, between SES and self-concept of academic ability, self-concept of academic ability was a slightly better predictor of academic achievement than SES.

Conclusions

- The fact that the explained variance in academic achievement was shared among the independent variables demonstrates the importance of the interrelationships among different sets of classroom characteristics. In this study, in particular, the class social composition (socio-economic status) and the pupils' personal attribute (pupils' self-concept of academic ability) are minimally related to the classroom climate dimensions and do not account for much of the variance in academic achievement. It may be concluded that the relationship between socio-economic status and academic achievement, and that between academic self-concept and academic achievement, are mediated largely by the classroom climate that pupils help to create.
- Pupils' self-concept of academic ability was found to be statistically non-significant among schools. It is concluded that pupils' academic self-concept cannot be compared across schools, as the evaluations communicated within one school would be dif-

ferent from that communicated in another school. Self-concept of academic ability evaluation is thus an in-school, in-class phenomenon and it is not appropriate to compare pupils' academic self-concept across schools when the social contexts are different.

3. Pupils differed in their perceptions of the classroom learning environment among schools. This makes the study interesting as the theoretical framework upon which the investigation was based is supported, i.e. to the extent that classes differed in their social learning environment, or classroom climate, academic achievement also differed.

The study has obvious important implications for the classroom teacher. Classroom settings can and do make a difference in pupils' academic achievement. The difference can be for the better or for the worse. Teachers can determine classroom teaching, learning or organizational policies that will enhance the learning climate and bring about positive academic achievement for the pupils.

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The Relationships Between School Social Climate and the Academic Achievement and Self-Concept of a Sample of Primary Pupils

Ng Gek Tiang

ABSTRACT

School social climate (or the norms, expectations and beliefs found in a school) has been identified in recent research as an important variable in enhancing school effectiveness. The purpose of the study was to examine the effects of this variable on two outcome variables, namely, academic achievement and academic self-concept. It was basically a correlational study based on data obtained

from 1177 primary six pupils drawn from eight primary schools. The findings related to the outcome variables showed that there were differences between schools in pupils' academic self-concept and that there was a positive relationship between academic achievement and pupils' self-concept of academic ability.

Introduction

This article on pupil self-concept and achievement is based on my dissertation entitled "A Study of the Relationships between School Social Climate and the Academic Achievement and Self-Concept of a Sample of Primary Pupils". The study was not on self-concept alone; rather the focus of the study was on school social climate (or the norms, expectations and beliefs found in a school) and its effects on two outcome variables, namely, academic achievement and self-concept of academic ability.

This being the case, what I propose to do in this article is to extract only the relevant points, findings and conclusions related to one of the sub-themes of this issue of the *Singapore Journal of Education*, that is, pupil self-concept and achievement.

Method of the Study

Basically the study was a correlational one based on data obtained from 1177 primary six

pupils drawn from eight English-medium primary schools. In order to ensure a representative sample, both Government and Government-aided schools were included in the study. Two low achieving and two high achieving schools were chosen non-randomly from each type of school as shown in Table 1. Data from the Primary School Leaving Examination (PSLE) were used to assess levels of academic achievement. High achieving schools were defined as schools in which pupil performance in the PSLE was better than that in the low achieving schools.

TABLE 1 — SAMPLE OF SCHOOLS

Type of School	Govt	Govt-aided
High-achieving	2	2
Low-achieving	2	2

The Brookover Self-Concept of Academic Ability Scale (Brookover et. al, 1979) was used to measure the pupils' self-concept. This questionnaire focussed specifically on the self-concept of the pupils in the context of education and it attempted to measure the evaluation a pupil made of himself with respect to his ability to achieve in academic tasks in general, in relation to other pupils. Table 2 shows some of the questions which make up the Self-Concept of Academic Ability Scale.

In addition to the questionnaire on self-concept of academic ability, pupils also answered questions which measured their perceptions of the school social climate, which briefly may be described as the norms, expectations and beliefs found in a school.

What were the Findings?

1. Differences in self-concept of academic ability among schools.

One of the findings related to the theme of pupil self-concept and achievement was that there were differences in self-concept of academic ability among the eight schools in the sample. The mean scores of the self-concept of the pupils in each of the schools in the study are presented in Table 3. This finding seems to support those of previous research that individual pupil scores on the academic self-concept scale are significantly and highly correlated with individual school achievement. (Brookover, 1979, p. 24).

TABLE 2 — SELF-CONCEPT OF ACADEMIC ABILITY SCALE

THE FOLLOWING QUESTIONS ARE TO BE ANSWERED BY CIRCLING THE NUMBER ON THE RIGHT OF THE CORRECT ANSWER. PLEASE PICK ONLY ONE ANSWER FOR EACH QUESTION.

1. Think of your friends. Do you think you can do school work better, the same or poorer than your friends?

- Better than all of them 1
- Better than most of them 2
- About the same 3
- Poorer than most of them 4
- Poorer than all of them 5

2. Think of the students in your class. Do you think you can do school work better, the same or poorer than the students in your class?

- Better than all of them 1
- Better than most of them 2
- About the same 3
- Poorer than most of them 4
- Poorer than all of them 5

3. Forget how your teachers mark your work. How good do you think your own work is?

- Excellent 1
- Good 2
- Same as most of the students 3
- Below most of the students 4
- Poor 5

4. How good a student do you think you can be in this school?

- One of the best 1
- Better than most of the students 2
- Same as most of the students 3
- Below most of the students 4
- One of the worst 5

TABLE 3 — MEANS AND STANDARD DEVIATIONS OF DEPENDENT VARIABLES, ACHIEVEMENT AND SELF-CONCEPT, IN EIGHT PRIMARY SCHOOLS

School	Achievement		Self-concept	
	M	SD	M	SD
School 1	11.8	2.1	26.7	3.4
School 2	12.0	2.1	26.8	3.2
School 3	8.2	3.1	25.7	4.0
School 4	8.4	3.4	25.0	4.3
School 5	12.3	1.9	27.0	3.9
School 6	11.8	2.1	24.5	3.2
School 7	11.8	2.2	27.8	3.9
School 8	10.7	2.4	24.0	3.5
Overall Mean	10.8	2.9	26.0	3.9

Special mention must be made of School 8 (a low-achieving school) and School 6 (a high-achieving school). The relatively low mean in self-concept for these two schools provides a very interesting point for speculation. Both these schools have a common background in that they were formerly Chinese-stream

schools. A possible explanation for the relatively low scores on the self-concept scale in these two schools is that the environment in these two schools is such that the values of humility and modesty are emphasised. Although the pupils in the sample were from English-stream classes, they might have been more modest in the ratings they made on themselves than the pupils in the other schools. On the whole, however, the findings on the self-concept of ability among the eight schools in the study showed that there were statistically significant differences among the schools on this scale.

However, the mean self-concept score (26.0) of all the eight schools was lower than that of the sample in the Brookover Study (Brookover et al, 1979), which ranged from 28.5 to 30.8. Moreover, the standard deviations of the mean scores of the Michigan schools in the Brookover Study were smaller than those for the Singapore schools, reflecting more homogeneity in self-concept ratings among Michigan pupils.

There are two possible explanations for this difference. First, it can be explained that in this sample of eight Singapore schools, the pupils had lower self-concept compared to that of the pupils in the Michigan elementary schools. This finding may lend support to the evidence that mean self-concept is different for different populations (Brookover and Passalacqua, 1981). The second explanation may be found in cultural differences. Perhaps pupils in the study were influenced by Asian tradition and selected responses they knew to be socially desirable rather than responses that were self-descriptive. This problem was mentioned by Shavelson et al. (1976). On the other hand, the question of modesty might not have arisen in the Michigan sample and the pupils merely rated their actual self-concept of academic ability.

2. *There is a positive relationship between academic achievement and pupils' academic self-concept.*

In Table 4, the correlations in each of the eight schools between the two variables, academic achievement and pupils' academic self-concept, are displayed.

These correlations seem to be consistent with research evidence that there exists a positive

and statistically significant relationship between individual self-concept and academic achievement (Purkey, 1970). The correlations for the eight schools in the study ranged from 0.18 to 0.44, with six of the schools having correlations above 0.30. These figures compare very favourably with the levels mentioned in Burns (1979). According to Burns, "the array of correlations linking self-concept level and achievement, while positive and statistically significant, tends to hover in the region of .30 and .40". What this implies, according to Burns (1979, p 280), is that only up to around 16 per cent of the variance in academic performance can be "explained" in terms of self-concept in academic roles, and therefore, self-concept is only one of a number of variables that affect academic performance.

TABLE 4 — CORRELATIONS BETWEEN THE TWO DEPENDENT VARIABLES, ACHIEVEMENT AND SELF-CONCEPT, IN EIGHT PRIMARY SCHOOLS

School	Self-concept
School 1	.34
School 2	.32
School 3	.18
School 4	.25
School 5	.35
School 6	.41
School 7	.38
School 8	.44

Note: All correlations were significant at the .01 level.

3. *The school social climate contributes significantly to the pupils' self-concept.*

The finding on the relationship between self-concept and school social climate needs to be highlighted. The correlation between overall climate and pupils' academic self-concept was positive and relatively high. The overall climate was correlated at above 0.60 with academic self-concept in all the eight schools (Ng, 1985, p. 91).

The significance of this finding suggests that there were certain aspects in the school social climate of the sample schools which produce differences in the mean self-concept between

schools. For instance, the relatively more substantial correlation in the high achieving schools indicates that these pupils had positive self-concept which was associated with high evaluations and expectations which others held for them.

Conclusion

The finding on the differences in self-concept of academic ability among schools suggests that some of the schools in the study had the kind of school climate which produced favourable self-concept while other schools had different environments which had less positive effects on pupils' self-concept of academic ability. If teachers are able to develop factors found in the schools where the pupils had high self-concept in their own school environments, they can expect better pupil performance. For instance, such factors as pupils' feelings of mastery of their academic work and their perceptions of teachers as caring and encouraging were found to be related positively to pupils' academic achievement in the study.

Secondly, the finding on self-concept in the study supported research evidence of the positive correlation between pupils' self-concept of academic ability and academic achievement. However, "the causal direction, if any, of this relationship cannot be ascertained" (Scheirer and Kraut, 1979, p. 132) in the study I did. At best what can be said is that a positive self-concept of academic ability seemed important for educational achievement. This being so, teachers could play an important part in this direction; they could be more positive in their evaluation of their pupils' academic ability or they could provide more opportunities for success in the school environment. In so doing, teachers can improve pupils' self-concept thus resulting in higher academic achievement.

In the context of the recent changes in the education system in Singapore which provides for different courses for pupils of different abilities, the finding that school social climate does contribute to the pupils' academic self-concept, is relevant and meaningful. It means that schools in general, and principals and teachers in particular, should not merely look for academic factors to improve the learning ability and achievement of pupils. The answer to better academic performance for the low-achieving pupils may lie in improving the pupils' academic self-concept.

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Self-Concept in Relation to the Academic Achievement of Polytechnic Students

Khoo Pee Ying

ABSTRACT

Four variables were studied in relation to the academic achievement of students from a polytechnic in Singapore. These were locus of control, self-concept, past performance and socio-economic status. The subjects were 406 first year students from five departments, comprising 270 males and 136 females.

The four variables together accounted for about 28% of the variance in academic achievement but only self-concept and past performance were found to correlate positively and significantly with academic

achievement. Males were found to have higher self-concepts than females but there were no significant sex differences in the relationship between any of these variables and academic achievement.

This study may have implications for administrators, teachers, student counsellors and parents in making educational decisions. In enhancing the academic achievement of students, due consideration must be given to personality and motivational development.

Introduction

The Ngee Ann Polytechnic offers courses in engineering, business and computer studies at the diploma level. Admission to the polytechnic is based on the academic results obtained at the General Certificate of Education (GCE) "O" or "A" level examinations. Competition for places especially to the more popular courses, is keen. Although students are stringently pre-selected, variations in academic performance at the polytechnic still exist particularly in the first year of a course. The question arises — what factors account for variations in the academic performance of students?

In an exploratory study carried out in September 1984, it was found that the students' past performance was a good predictor of future performance — the aggregate of the candi-

date's performance on his best five "O" level subjects accounted for about 25% of the variance in the first year polytechnic examination performance in 1984. This finding appears to be in line with those in the United States where it has been found that generally high school grade performance is one of the best predictors of success in college (Thomas et al., 1977).

The literature review shows that prior to the 1950s, the focus of school performance was primarily on the intellectual basis of educability and intelligence measurement. "Home background, social class, child-rearing practices, motivation, personality, cognitive style, etc. were not considered until well after the Second World War." (Burns, 1982, p. 206). It is only

in recent years that personality, attitude variables and motivational development have gained importance and are of as much concern to educators as intellectual development in the study of academic performance (Lefcourt, 1982). Students' perception of the locus of control and their academic self-concept are regarded among such variables.

Locus of control is a personality construct which divides individuals into "internals" (i.e. those who perceive that they control the events in their lives) and "externals" (i.e. those who perceive that they are controlled by external forces such as luck, fate, powerful others, etc.). According to social learning theory, a person with an internal as opposed to an external locus of control will show greater achievement effort and because of this effort, greater achievement. Evidence suggests that an internal locus of control tends to be positively correlated with academic achievement (Rotter, 1966; Coleman, 1966; Lefcourt, 1982).

Self-concept is a person's perception of himself. Academic self-concept or self-concept as a learner refers specifically to how one views oneself as a student in an academic setting. It has been shown that high achievers tend to have positive self-concept and research evidence reveals a significant relationship between self-concept and academic achievement. (See reviews by Purkey, 1970; Lynch et al., 1981; Burns, 1982.)

It has also been claimed that academic performance is closely related to students' socio-economic status (SES); those from a higher SES background tend to perform better academically (Coleman et al., 1966; Marjoribanks, 1979, 1983).

Traditionally, there are relatively fewer female students opting for engineering as compared to business studies. The ratio of females to males is on the average, 2:8 in the engineering departments, but it is 7:3 in the business studies department. The effects of sex differences on perceptions of locus of control and self-concept and their relationships with academic achievement in the different departments would also make an interesting area for study especially when there are rather mixed reports in the literature concerning sex differences in locus of control research (e.g.

Frieze, 1975; Feather, 1969) and self-concept (Brown et al, 1984; Harris, 1971).

Most of the research done on the relationships of achievement-related variables has been conducted in the Western countries. Hopefully, this study will throw some light on the learning situation of young adults in an Eastern context like Singapore.

Purpose of the Study

The purpose of this study was to investigate:-

- (1) the relationships between academic achievement and locus of control, self-concept, past performance and socio-economic status of polytechnic students; and
- (2) whether these variables and their relationships with academic achievement differ between males and females.

Research Questions

1. How do students' locus of control, self-concept, past performance and socio-economic status relate to their academic achievement?
2. Are there sex differences in these variables and in their relationships with academic achievement?
3. Do locus of control, self-concept, past performance and socio-economic status have different degrees of influence on academic achievement?

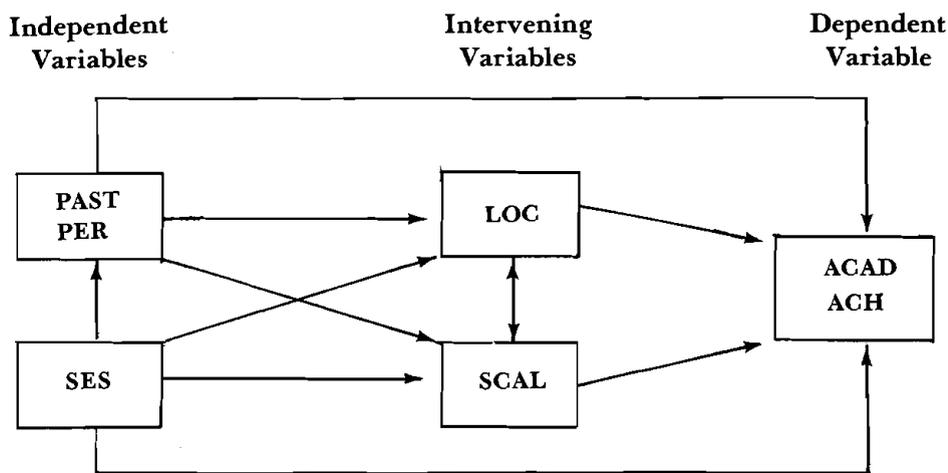
Conceptual Framework

Academic achievement was the dependent variable. Past performance and socio-economic status were the independent variables. Locus of control and self-concept as a learner were intervening variables. (See Fig. 1 on the next page.)

Hypotheses

The following hypotheses were tested:

- H₁. There will be a positive and significant relationship between academic achievement and each of the variables, locus of control, self-concept as a learner, past performance and socio-economic status in the direction that:-
- (1) students with a more internal locus of control will have a higher academic



ACADACH = Academic achievement
 LOC = Locus of control
 SCAL = Self-concept as a learner
 PASTPER = Past performance
 SES = Socio-economic status

Fig. 1 — Conceptual framework of study

achievement than students with a more external locus of control.

- (2) students with a higher self-concept as a learner will have higher academic achievement than students with a lower self-concept;
- (3) students with a better past performance will have higher academic achievement than students with a poorer past performance; and
- (4) students from a higher socio-economic background will have higher academic achievement than students from a lower socio-economic background.

H2. There will be significant sex differences in students' locus of control, academic self-concept, past performance and socio-economic status and in their relationships with academic achievement.

H3. Locus of control, self-concept of a learner, past performance and socio-economic status will have different degrees of influence on academic achievement.

The Sample

The survey was administered to 20% of the total Singapore-Cambridge GCE "O" level first year student population (540 out of 2655) with proportionate representation of males and females from each of the five departments. Mean age was 19 years, ranging from 18 to 24 years and the sample was confined only to Singaporeans who took English as their first

language. However, out of the 540 survey forms distributed, only 406 (or 75%) were usable returns. The sample therefore comprises only 15% of the total first year population.

Instruments Used

1. *Locus of Control*: Measured by a modified form of Rotter's (1966) Internal-External (I-E) Scale. Reliability coefficient (Cronbach's alpha) = 0.70.
2. *Self-concept*: Measured by Waetjen's (1963) Self-Concept as a Learner scale (Argyle & Lee, 1972). (The instrument has 4 sub-components — Motivation, Task orientation, Problem solving, Class membership.) Reliability coefficient (Cronbach's alpha) = 0.84.
3. *Past performance*: Measured by the aggregate score of the candidate's performance on his best five subjects at the Singapore-Cambridge GCE "O" level examination.
4. *Socio-economic status*: Measured by the father's occupation and the type of housing. (There are six occupational groupings based on the Ministry of Labour's classification — professional, managerial, paraprofessional, skilled workers, trade/commerce and semi-skilled. Type of housing is categorised into 4 broad types — HDB flats, HUDC flats, Private houses and Others.)
5. *Academic achievement*: Measured by the overall average score of the student's first

year sessional examinations, taken about nine months after admission to the institution.

Statistical Analysis

The following statistical techniques were used:

1. Pearson's product-moment correlation (r) to find the intercorrelations between all the variables.
2. t-tests for significance of difference in means in academic achievement between the high and low groups in terms of each variable and between males and females.
3. Stepwise multiple regression to find the percentage of explained variance contributed by each variable.

The level of significance for accepting or rejecting the hypotheses was set at 0.05.

Results

The results are summarised in Tables 1 — 8.

Table 1: Except in two departments, the correlations between locus of control and academic achievement fail to reach the level of significance set. Overall, there is no significant correlation between locus of control and academic achievement.

Table 2: The correlation coefficients between self-concept as a learner and academic achievement are positive and reach the level of significance for all departments except two. Overall, the correlation is positive and significant ($r = 0.23$, $p < 0.0001$), indicating that self-concept is positively and significantly related to academic achievement.

Table 3: The correlations between past performance and academic achievement are positive and significant in all departments but one. Overall, the correlation is positive and highly significant ($r = 0.48$, $p < 0.0001$). This shows that past performance is positively and significantly related to academic achievement.

Table 4: The correlations are all negative; they do not reach the level of significance set. Hence, there is no statistically significant rela-

tionship between socio-economic status and academic achievement.

Table 5: This shows that for locus of control and socio-economic status, there is no significant difference in means between the high and low groups in their academic achievement scores. Hence Hypotheses 1(a) and (d) have to be rejected. In the case of self-concept as a learner and past performance, both the t-values for differences in means of academic achievement between the high and low groups are significant. Thus, Hypotheses 1(b) and (c) are confirmed.

Table 6: t-tests for significance of difference in means between males and females show that the differences in means are significant for locus of control, self-concept as a learner and past performance but not for academic achievement and socio-economic status. Thus, males are more internal and have a higher self-concept than females. Females, on the other hand, have a better past performance than males. There are no sex differences in academic achievement and socio-economic status.

Table 7: Significance of the differences in coefficients of correlation between males and females shows that all the critical ratios are not significant, indicating that there are no significant sex differences in the relationship between academic achievement and locus of control, self-concept as a learner, past performance and socio-economic status. Thus, Hypothesis 2 is only partially confirmed.

Table 8: Stepwise multiple regression analyses show that overall 28.48% of the variance in the dependent variable (academic achievement) is accounted for by all the four variables (past performance, self-concept as a learner, socio-economic status and locus of control) together. The single most important variable in the prediction of academic achievement is past performance which alone accounts for 24.43% of the variance in academic achievement. Self-concept as a learner accounts for an additional 3.33% of the variance while socio-economic status adds only 0.60% to the variance. Locus of control accounts for only a very negligible amount (0.12%) of the

TABLE 1 — CORRELATIONS OF ACADEMIC ACHIEVEMENT WITH LOCUS OF CONTROL BY SEX AND DEPARTMENT

Dept	Males		Females		Overall	
	n	r	n	r	n	r
Building	20	0.58*	20	0.13	40	0.35*
Business Studies	18	0.16	50	0.04	68	0.01
Electrical & Electronic Engg	96	-0.13	46	0.02	142	-0.06
Mechanical Engg	116	0.07	16	-0.15	132	0.05
Shipbuilding & Offshore Engg	19	0.37	4	0.43	23	0.40*
All depts	269	0.04	136	-0.04	405	0.01

* $p < 0.05$

TABLE 2 — CORRELATIONS OF ACADEMIC ACHIEVEMENT WITH SELF-CONCEPT AS A LEARNER BY SEX AND DEPARTMENT

Dept	Males		Females		Overall	
	n	r	n	r	n	r
Building	20	0.09	20	0.24	40	0.26
Business Studies	18	0.51*	50	0.22	68	0.21
Electrical & Electronic Engg	95	0.09	46	0.28*	141	0.20*
Mechanical Engg	116	0.32**	16	0.22	132	0.31**
Shipbuilding & Offshore Engg	19	0.39	4	0.09	23	0.37*
All depts	268	0.24***	136	0.24*	404	0.23***

* $p < 0.05$

** $p < 0.001$

*** $p < 0.0001$

TABLE 3 — CORRELATIONS OF ACADEMIC ACHIEVEMENT WITH PAST PERFORMANCE BY SEX AND DEPARTMENT

Dept	Males		Females		Overall	
	n	r	n	r	n	r
Building	20	0.45*	20	0.44*	40	0.43*
Business Studies	18	-0.11	50	0.22	68	0.21
Electrical & Electronic Engg	96	0.51***	46	0.54***	142	0.54***
Mechanical Engg	116	0.39***	16	0.40	132	0.39***
Shipbuilding & Offshore Engg	19	0.41	4	0.84	23	0.48*
All depts	269	0.49***	136	0.52***	405	0.48***

* $p < 0.05$

*** $p < 0.0001$

TABLE 4 — CORRELATIONS OF ACADEMIC ACHIEVEMENT WITH SOCIO-ECONOMIC STATUS BY SEX AND DEPARTMENT

Dept	Males		Females		Overall	
	n	r	n	r	n	r
Building	19	0.21	19	-0.22	38	-0.01
Business Studies	14	-0.39	42	-0.19	56	-0.22
Electrical & Electronic Engg	88	-0.13	43	-0.17	131	-0.14
Mechanical Engg	105	-0.07	16	-0.00	121	-0.07
Shipbuilding & Offshore Engg	19	-0.05	4	-0.42	23	-0.06
All depts	245	-0.07	124	-0.11	369	-0.08

TABLE 5 — MEANS, STANDARD DEVIATIONS AND t VALUES FOR SIGNIFICANCE OF DIFFERENCE IN MEANS IN ACADEMIC ACHIEVEMENT BETWEEN HIGH AND LOW GROUPS

Variable	Group	N	Academic Achievement		
			Mean	SD	t
Locus of control	Hi(\bar{X} = 15.69)	201	66.02	8.91	1.1260
	Lo(\bar{X} = 8.63)	167	64.92	9.76	
Self-concept as a learner	Hi(\bar{X} = 178.25)	193	67.61	8.51	4.6162***
	Lo(\bar{X} = 152.57)	196	63.43	9.33	
Past performance	Hi(\bar{X} = 32.22)	176	69.44	7.61	9.2370***
	Lo(\bar{X} = 22.23)	188	61.41	8.95	
Socio-economic status	Hi(\bar{X} = 10.00)	136	64.30	8.23	-2.1595
	Lo(\bar{X} = 5.23)	204	66.33	8.63	

*** p < 0.0001

TABLE 6 — MEANS, STANDARD DEVIATIONS AND t VALUES FOR SIGNIFICANCE OF DIFFERENCE IN MEANS BETWEEN MALES AND FEMALES

Variable	Males			Females			t
	N	\bar{X}	SD	N	\bar{X}	SD	
ACADACH	269	65.15	9.89	136	65.96	7.40	0.93
LOC	270	12.77	3.93	136	11.82	3.89	2.32*
SCAL	269	167.18	15.29	136	161.77	15.73	3.33**
PASTPER	270	25.87	5.12	136	29.36	5.55	6.30***
SES	246	7.23	2.59	124	7.45	2.55	0.78

* p < 0.05
 ** p < 0.001
 *** p < 0.0001

ACADACH = Academic achievement
 LOC = Locus of control
 SCAL = Self-concept as a learner
 PASTPER = Past performance
 SES = Socio-economic status

TABLE 7 — SIGNIFICANCE OF DIFFERENCES IN COEFFICIENTS OF CORRELATION BETWEEN MALES AND FEMALES

Variables	Male			Female			Critical ratio	
	N	r	Fisher's z	N	r	Fisher's z		
LOC & ACADACH	270	0.04	0.04	136	-0.04	0.04	0.73	n.s.
SCAL & ACADACH	269	0.24	0.25	136	0.24	0.25	0	n.s.
PASTPER & ACADACH	270	0.49	0.54	136	0.52	0.58	0.36	n.s.
SES & ACADACH	246	-0.07	-0.07	124	-0.11	-0.11	0.36	n.s.

(n.s. = not significant)

Notes: (1) The Fisher's z coefficient is transformed from Pearson's r by a conversion table.
 (2) The critical ratio for significance of difference is derived from the following formula:-

ACADACH = Academic achievement
 LOC = Locus of control
 SCAL = Self-concept as a learner
 PASTPER = Past performance
 SES = Socio-economic status

$$\text{Critical ratio} = \frac{z_1 - z_2}{\sigma_{d_z}}$$

$$= \frac{z_1 - z_2}{\sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}}$$

(From Guilford & Fruchter, 1973, pp. 166-168)

TABLE 8 — STEPWISE MULTIPLE REGRESSION — MAXIMUM R² IMPROVEMENT FOR DEPENDENT VARIABLE ACADEMIC ACHIEVEMENT

DEPT	b Values				R ²	% of Explained Variance
	PASTPER	SCAL	SES	LOC		
Business Studies (N = 56)	0.95*	—	—	—	0.1450*	14.50
	0.94*	0.09	—	—	0.1868*	+ 4.18
	0.84*	0.09	-0.31	—	0.2031*	+ 1.63
	0.80*	0.11	-0.27	-0.15	0.2094*	+ 0.63
Electrical & Electronic Engineering (N = 131)	1.10***	—	—	—	0.2888***	28.88
	1.07***	0.09*	—	—	0.3148***	+ 2.60
	1.07***	0.09*	-0.49	—	0.3324***	+ 1.76
	1.07***	0.11*	-0.45	-0.24	0.3423***	+ 0.99
Mechanical Engineering (N = 121)	0.97***	—	—	—	0.1547***	15.47
	0.83**	0.12*	—	—	0.1843***	+ 2.96
	0.84**	0.13*	0.21	—	0.1903***	+ 0.60
	0.84**	0.13*	-0.20	-0.08	0.1908***	+ 0.05
DEPT	b Values				R ²	% of Explained Variance
	PASTPER	LOC	SCAL	SES		
Building (N = 38)	0.63*	—	—	—	0.1826*	18.26
	0.70*	0.76*	—	—	0.3444**	+ 16.18
	0.76**	0.60*	0.11	—	0.3939**	+ 4.95
	0.76**	0.62*	0.11	0.11	0.3961**	+ 0.22
Shipbuilding & Offshore Engineering (N = 23)	1.30*	—	—	—	0.2298*	22.98
	1.34*	0.92*	—	—	0.3996***	+ 16.98
	1.31*	0.72	0.11	—	0.4288*	+ 2.92
	1.48*	0.61	0.16	0.62	0.4591*	+ 3.03
DEPT	b Values				R ²	% of Explained Variance
	PASTPER	SCAL	SES	LOC		
All depts (N = 369)	0.85***	—	—	—	0.2443***	24.43
	0.82***	0.11***	—	—	0.2776***	+ 3.33
	0.82***	0.11***	-0.28	—	0.2836***	+ 0.60
	0.82***	0.11***	-0.27	-0.09	0.2848***	+ 0.12

* p < 0.05
 ** p < 0.001
 *** p < 0.0001

ACADACH = Academic achievement
 LOC = Locus of control
 SCAL = Self-concept as a learner
 PASTPER = Past performance
 SES = Socio-economic status

variance. Thus, only past performance and self-concept as a learner account for any sizable amount of the variance in academic achievement. The regression results therefore show that locus of control, self-concept as a learner, past performance and socio-economic status have different degrees of influence on academic achievement. Thus, Hypothesis 3 is confirmed.

Discussion

The results of the study indicate that of the four variables investigated, past performance has the highest correlation with academic achievement ($r = 0.48$, $p < 0.0001$) and that it is the strongest predictor of academic achievement (accounting for 24% of the variance). The results are consistent with findings from research conducted in the United States (Holland, 1960; Whitla, 1968; Deboer, 1981; Klitgaard, 1985), in the United Kingdom (Choppin et al., 1973), New Zealand (Parkyn, 1967) and Hong Kong (Ho, 1979; Spinks & Ho, 1984), all of which concluded that prior attainment and ability as measured by either high school GPAs or GCE results were the best predictors of success at university or college. Thus it is a good selection criterion for entry to the Polytechnic.

The next most important predictor of academic achievement is self-concept which accounted for an additional 3% of the variance, though not an "overwhelming" influence. The low but significantly positive correlation lends support to findings of similar low correlations reported in the literature (correlations range from 0.21 to 0.26 or 4 to 7% of variance in academic performance in most of the studies). Rubin et al. (1976) found that the addition of self-esteem to multiple regression equations derived from socio-economic status and IQ accounted for no more than an additional 3% of the total variance explained in the prediction of school achievement. This is consistent with the findings in the present study. Burns (1982), however, commented that the low variance accounted for by self-concept is not surprising since self-concept is only one of a number of variables that affect academic performance. "But it is certainly too important to be disregarded and must be ranked alongside those other usual explanations of IQ, social class,

parental interest, etc.; all of which need to be invoked to produce an overall picture of why some children succeed while others fail" (Burns, 1982, p. 215).

Conclusion and Implications

Admission Criteria

The findings of the present study indicate that the aggregate score in past performance is positively and significantly correlated with the performance of the students in their first year sessional examinations. This shows that the selection standard based on the five best GCE "O" level results, is a good criterion and an accurate predictor of academic success in the Polytechnic.

Importance of self-concept

A positive and significant relationship exists between students' academic achievement and their self-concept. The main implication for educators, teachers and parents is that since self-concept is amenable to change, it is possible for teachers and others to effect the changes positively by helping the student form central beliefs about himself which will enhance his self-concept, e.g. seeing himself as capable of learning; by creating experiences which will help a person feel better about himself and by preventing the development of negative self-concept. Teachers need to view students in essentially positive ways and hold favourable expectations of them. They must treat their students with respect and warmth and provide an educational atmosphere of success in the classroom. Counselling and guidance, both in school and at home, should aim at encouraging and inculcating positive self-concept.

Diminishing function of locus of control and socio-economic status

Contrary to findings in the West, there is no significant correlation between achievement and locus of control in this study. This implies that the influence of locus of control diminishes as other factors become more critical in the Singapore context. It reflects perhaps the relatively "non-turbulent" state of the Singapore society in which the students are brought up.

These Singaporean students were born in the post-independence era and have not had any experience of any political class struggle based on race or language which their fathers might have experienced. They grew up in the years of good economic growth and enjoyed a fairly good quality of life. It shows that locus of control which has a lot to do with how one perceives one's environment, whether as controlling self or vice-versa, is perhaps less critical to Singaporean students as compared to the disadvantaged minority groups of some Western societies. Similarly, there is a lack of any significant correlation between academic achievement and socio-economic status. It shows that both locus of control and socio-economic status are less critical determinants of academic success in Singapore than other factors like self-concept and past performance. This further reaffirms that cultural and societal differences exist between students from the East and West. However, the lack of a significant correlation between socio-economic status and academic achievement in this study may also be attributed to the homogeneity of the sample as pre-selection took place and the majority (as is the case with 80% of Singaporeans) lived in HDB flats.

Sex differences in self-concept and locus of control

Sex differences were found to exist in students' perceptions of locus of control and self-concept. Males are more internal and have higher self-concept than females. These findings imply that the stereotyping of sex roles exists in Singapore as it does in the West, with the males perceiving themselves as more in control of the environment and displaying a higher self-image than females. This phenomenon is perhaps even more evident in a predominantly male technical institution like the Ngee Ann Polytechnic. This has implications on the approach adopted by student counsellors and lecturers who may have to exercise greater sensitivity towards female students and vary their counselling techniques accordingly when dealing with students of different sexes.

Thus, within its limitations, this study may have implications for school administrators, teachers, student counsellors and parents in

making educational decisions. It shows that in enhancing the academic achievement of students, due consideration must be given to personality and motivational development.

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