

**PRINCIPALS' MANAGEMENT OF LOWEST STREAM
(NORMAL TECHNICAL) STUDENTS IN SINGAPORE
SECONDARY SCHOOLS**

**Thesis submitted for the degree of
Doctor of Education
at the University of Leicester**

by

**ONG Chye Hin MSc (UW-Madison)
Department of Education
University of Leicester**

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Declaration

This thesis is my own work and no part of it has been submitted for a degree at this, or any other, university.

A handwritten signature in black ink, appearing to be 'ONG Chye Hin', written in a cursive style.

ONG Chye Hin

Abstract

This thesis investigates how principals in neighbourhood secondary schools in Singapore manage their lowest stream, the Normal Technical (NT) students, in their schools. The study was guided by three research questions: (1) What are principals' perceptions of streaming as a way of organising students in secondary schools?; (2) What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?; and (3) Do the principals' perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes?

The aim of the study and the research questions made the use of the interpretivist paradigm and qualitative research methods most appropriate. The study also adopted a symbolic interactionist perspective, realising that people make sense of their lives and experiences through interaction with others around them. The study exemplifies the methods proposed by grounded theorists (Glaser, 1992; Strauss & Corbin, 1990).

Participants were principals of neighbourhood secondary schools. Data were collected using semi-structured interviews and documents over a period of approximately 36 months. Through the series of interviews a picture emerged of principals' management approaches of their NT students. The grounded theory that emerged – the theory of 'selective engagement' – comprises a threefold typology of principals and three categories. The three categories are respectively: (1) Paradigms; (2) Conceptions; and (3) Management. The theory proposes that principals can be classified as 'realists/pragmatists', 'innovators/improvisers' and 'nurturers' according to the extent they selectively engage their students in the eight management areas: (1) Streaming/Lateral Movement; (2) Monitoring; (3) Deployment of Resources; (4) Subject Offerings; (5) Enrichment Programmes; (6) Managing Discipline; (7) Leadership Opportunities; and (8) Treatment of Students. The study shows how participants manage their NT students selectively in answer to the third research question. This gives rise to three discernible patterns of responses forming the basis of the threefold typology.

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Doing a degree part-time is challenging. Doing a Doctoral degree on a part-time basis and having to lead a school at the same time is extremely challenging. There were many times when I felt like giving up and times when I just did not do anything for months. The fact that I have finally managed to complete the programme and the writing of the thesis is due in no small measure to the following:

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LIST OF ABBREVIATIONS

AS	Autonomous School
AWOL	Absence without Official Leave
CCA	Co-Curricular Activities
CPA	Computer Application
EM	Elective Modules
EM1	English, Mother Tongue at First Language Level
EM2	English, Mother Tongue at Second Language Level
EM3	English, Mother Tongue at the most Basic Level
EOA	Elements of Office Administration
FTSC	Full Time School Counsellor
GCE	General Certificate of Education
HOD	Head of Department
IS	Independent Schools
ITE	Institute of Technical Education
JC	Junior College
MOE	Ministry of Education
NA	Normal Academic Stream
NT	Normal Technical Stream
PSLE	Primary School Leaving Examinations
SAP	Special Assistance Plan
SHATEC	Singapore Hotel and Tourism Education Centre
TESA	Teacher Expectations Student Achievement

CHAPTER ONE

THE RESEARCH PROBLEM

AIMS AND PURPOSES OF THE RESEARCH

This study investigates how principals in neighbourhood secondary schools in Singapore manage their academically weakest students. Its major purpose is to develop a theory inductively, based on grounded theory methods, of how the perceptions of a small group of principals influence, in turn, their management of students in the Normal Technical (NT) Streams of their schools.

The research aims, first, to provide a clearer picture of the perceptions of streaming in Singapore schools, from the point of view of the principals themselves. It is not known whether all principals support the Ministry's policy on streaming and whether their - the principals' - paradigms of streaming affect the way they manage the NT students.

The second aim of this study is to gain a better understanding of the principals' perceptions regarding the NT students' characteristics and their expectations of these students. Do their perceptions and expectations influence or affect the way they manage these students? To-date, the researcher is unaware of any systematic research on this.

The third aim of this study – given that little, if any, previous research has led to an existing theory - is to generate a new theory of how principals handle the issues associated with students in the lowest streams, which is the Normal Technical stream, of Singapore secondary schools. Management of issues related to academic, discipline and social aspects of the students will also be explored.

There has been no attempt to develop a theory about how Singaporean principals manage Normal Technical (NT) students in their schools. There is currently not a theory to test in this case, so this study aims to generate a theory rather than test one. The development of

a theory in this area of research should serve to inform the practice of school principals and help them to manage these students more effectively.

Finally it is hoped that this study will help policy-makers in refining ways of helping these lowest stream students achieve their greatest potential and provide them with greater and wider opportunities.

INTRODUCTION

The research area and central phenomenon of this study focuses on principals' management of Normal Technical (NT) students who are placed in the lowest streams in neighbourhood secondary schools in Singapore. The proposed study attempts to develop an understanding of how secondary school principals manage students in the Normal Technical (NT) Stream in their schools.

The following explains the systemic context to the position of school principals in Singapore neighbourhood schools. The hierarchical structures of the Ministry of Education, Schools Division and the school leadership organisation are shown in Figures 1 and 2, respectively. Recruitment and appointment of staff is done centrally by the Ministry of Education (MOE) and staff are then allocated to the schools. It is a very centrally controlled system. Independent Schools have more discretion as they can decide who to hire or fire. The Ministry of Education is the governing body that is the sole authority that screens and selects applicants for teacher training at the National Institute of Education (NIE) which is the only teacher training institution in Singapore. The NIE provides pre-service and in-service training for potential teachers as well as further professional development for teachers and school leaders. Every school receives funding direct from the MOE based on their student enrolment. There are different funds for different purposes and the principal is held accountable for all expenditures. The principals have full authority on the use of the fund as they are also the 'financial controllers'. Staff salary is paid centrally by the MOE but the principal determines the performance bonus of the teaching staff.

Figure 1
Ministry of Education, Singapore
Schools Division Organisational Structure

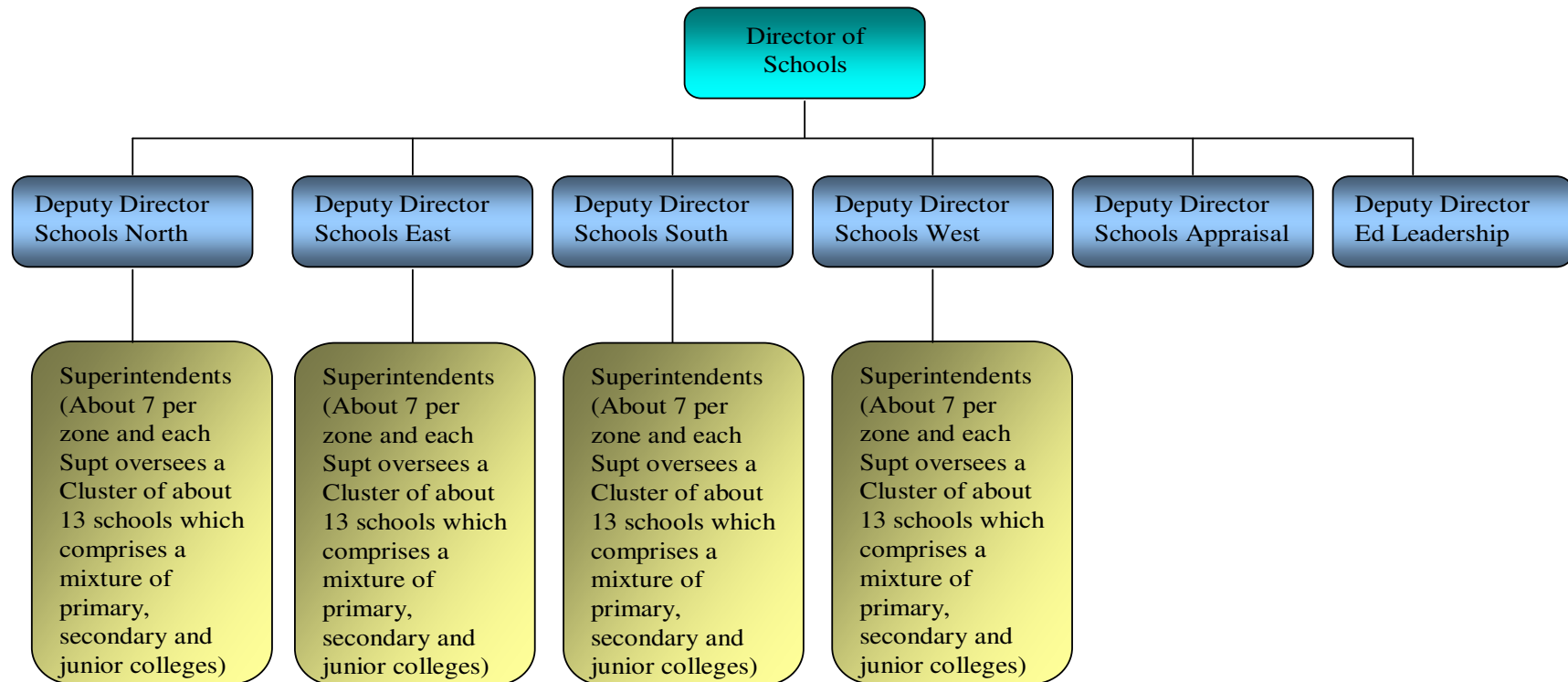
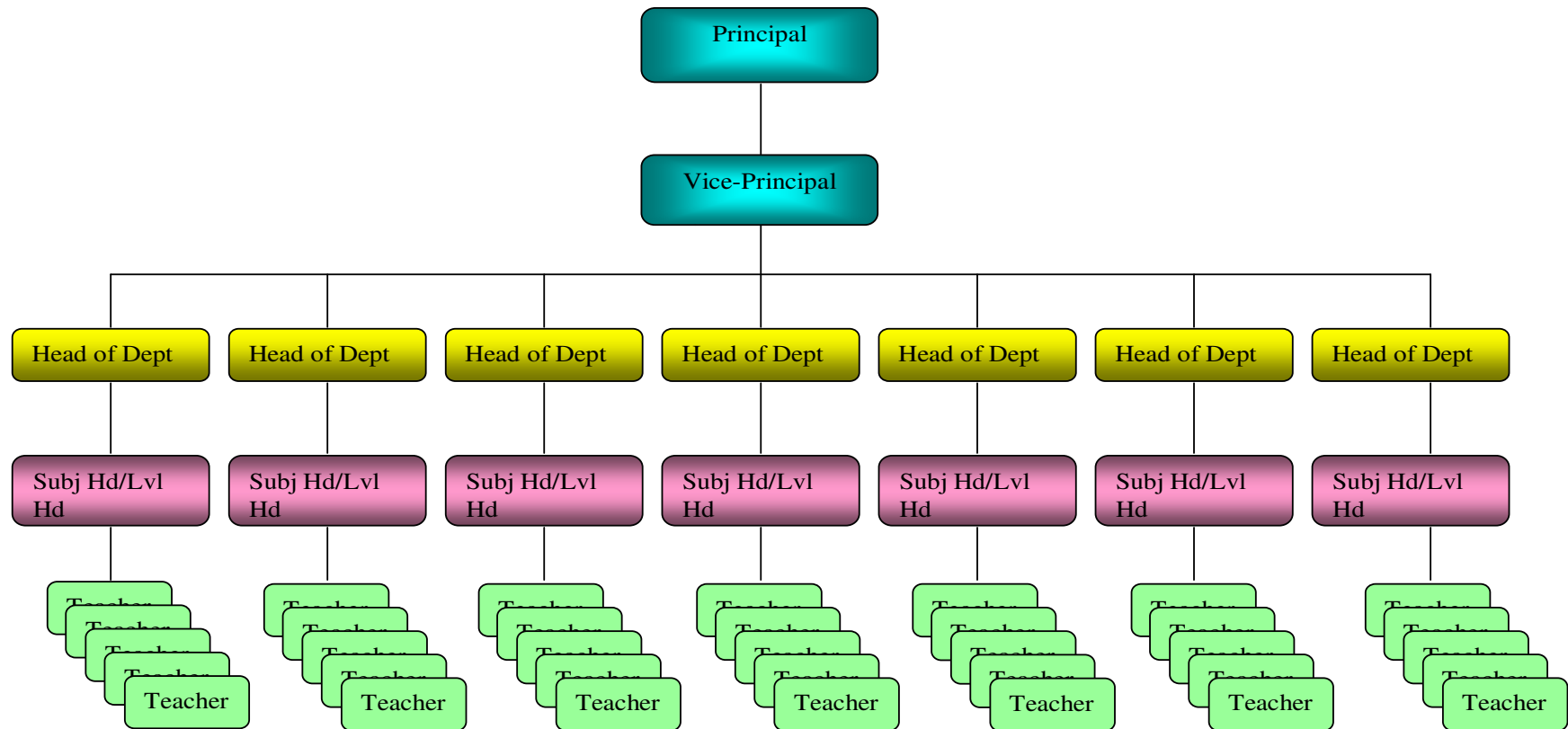


Figure 2
Typical School Leadership Organisational Structure



Schools in Singapore are grouped into four zones. Within each zone, schools are grouped into Clusters based mainly on proximity and a mixture of Primary and Secondary schools with one or two Junior Colleges. Each Cluster is under the charge of a Cluster Superintendent and the Clusters within each zone come under a Deputy Director of Schools. These Deputy Directors are themselves under the charge of the Director of Schools.

Although the Cluster Superintendent appraises the principals, provides advice, guidance and some financial resources to the schools, they do not tell the principals what to do. Schools are autonomous to a certain extent in that principals are vested with the responsibility and authority by the Ministry of Education to manage and run the schools: and they alone are fully accountable, although they have a team of key personnel working with them. Each year in December, the Ministry of Education holds a Principals' Appointment Ceremony for school principals in a five-star hotel, for principals who are newly appointed or who have been rotated to another school. This symbolic act is meant to raise the profile and emphasise the important roles that the school principals play in "Moulding the Future of Our Nation" as one of the Singaporean slogans goes. The Ministry views principals as the key:

to shaping and strengthening the traditions and ethos of our schools. They lead and inspire teachers, and work with parents and the community to prepare our young for the future. As we move towards a quality-focused education system, Principals play a critical role in providing our students with the opportunities to discover their strengths and follow their passions. With schools driving the initiatives to achieve this, we need Principals to steer our schools towards peaks of excellence.

(MOE, 2007a)

When it comes to making decisions relating to students within the school, the school principals alone have full authority and the final say. They alone have the authority over staff to promote, retain, laterally transfer, determine the subject options available or even expel a student. The Cluster Superintendent does not interfere with the decision of the principals. In all matters pertaining to management of students within the school, the principals have the final say. Usually, their key personnel and teachers would let them

make the final decision in all matters out of deference to them as the school principal. This is not to say that principals are authoritarian or non-consultative in their management approaches. In a Confucianistic culture like that of Singapore, subordinates are usually not only very respectful and usually defer the final decision to the person in charge but also because the principals ultimately have responsibility for the organisation. They are fully accountable to the MOE. Principals' leadership styles do vary. In this study, the focus is specifically on Singaporean school principals' leadership actions with regards to the approaches they adopt in managing the NT students within their schools.

Streaming is a Ministry of Education mandated policy and practice in Singapore. Providing alternatives to this is out of the question for Singapore schools, unlike schools in some western countries. Therefore within this context, how do secondary school principals in Singapore manage the situation in their schools? Through a series of interviews with secondary school principals a picture emerged of principals' management strategies.

Tracking or streaming as it is known in Singapore schools has been around for about three decades in Singapore. The introduction of streaming was partly to address the problem of student attrition – premature dropouts - in both the primary as well as the secondary schools. It was also the intention of the government to ensure that students are kept in school for the required duration of formal schooling, so that they do not unnecessarily enter the work force prematurely without the necessary qualifications or skills. An additional factor was to provide the students with different streams to enable them to progress at their own pace.

Having a large proportion of students leaving school at an early age because they cannot cope with the demands of the education system would also pose a social problem as they would be susceptible and exposed to unhealthy influences. Singapore could not afford to have a sizeable proportion of the workforce without the necessary skills if the country is to stay ahead of its competitors.

Streaming was thus proposed to alleviate and in fact to solve all of the above problems. In a country like Singapore with a small population and landmass and no natural resources, the country has to rely on having a world-class human resource. Thus, it was important to ensure that everyone in the population is equipped with the appropriate skills and training for a knowledge-based economy.

To Singapore's political leaders, streaming is an effective tool and has proven to be very effective in selecting the best and most capable, and then training them to be the future leaders of the nation. Streaming may have solved or mitigated a number of problems. However, it poses some problems of its own.

In the last few elections where the incumbent ruling party was challenged, streaming has been a bone of contention and has always been used as a launching pad of unhappiness among the masses. The government, has, however, stuck vehemently to the policy of streaming and has refused to budge (Quek, 2006; Lee, 2006).

According to Hallam (2002) policy decisions about pupil grouping have often been based on ideological principles rather than educational ones. This is especially true in the case of Singapore where the culture is based on an elitist model and where the smartest and brightest, based on academic test scores, are fast-tracked to a promising career in the administrative service and the civil service as a whole. The nature of intelligence, viewed as more nature than nurture, is a fundamental assumption to tracking or streaming in Singapore.

In the past two years the government has introduced more changes to the education system. On the one hand it realizes the need to develop and provide for the differing abilities of students, such as the setting up of a Sports School, a third university – the Singapore Management University, and an Arts School, the last two of which are privately run, yet it still maintains the need for the three streams - the Express, the Normal Academic (NA) and the Normal Technical (NT) - in the neighbourhood secondary schools. In 2004 the government decided to do away with Primary school

streaming based on the students' ability to do Higher Mother Tongue Language and the performance in English Language and Mathematics, but it still held on to its decision to keep the slowest stream, the EM3 stream – where the students are academically weak and do the Mother Tongue Language at the simplest level. The government also refused to change the label despite numerous pleas from parents and educationists.

Evidence from reviews (Slavin, 1987a; 1990; Kulik & Kulik, 1982; 1992) indicates the degree of access to the curriculum or 'opportunity to learn' (Carroll, 1963) affects the degree of achievement related to pupil grouping procedures. Where pupils are taught in mixed-ability classes, the overall differentiation of the curriculum is less, and lower-ability pupils tend to perform better (Hallam, Ireson, Mortimore, Hack, & Clark, 1999; Hallam, Ireson & Hurley, 2001b).

The question of ability grouping is controversial. Structured ability grouping, of itself, does not appear to lead to consistently better or worse performance in any group of pupils. Pupils' performance is related to access to the curriculum and the quality of teaching on offer. In some circumstances, where the curriculum is differentiated, allowing faster progress and more in-depth work, structured ability grouping can be beneficial in raising the attainment of those who are more able (Hallam, 2002). This is where the Ministry of Education's stand is, and what it sees as providing the different streams to meet the different abilities of the different groups of pupils. The problem is that in doing so, the grouping structures lead to low expectations, an inferior curriculum and teaching is focused on control rather than learning which leads to the lower ability groups being more likely to do worse (Hallam, 2002).

As a principal managing a neighbourhood secondary school, the researcher observes issues in the schools he has managed which are similar to the findings from research done overseas in these areas. For example, the NT syllabus has a very much reduced content coverage, compared to the Express and the Normal Academic (NA) streams, resulting in teachers not stretching the NT students to do more. Also because these NT students are more restless and active, many teachers would prefer to have a tighter control over them.

Thus between the NT and the Express curriculum the gap is just too wide for students to bridge. So although theoretically there exists a possibility for the NT students to cross over to the NA stream in either Secondary One or Two, it is just not possible for the NT students to cross over to the Express stream even if they are late developers. Less than three students per cohort from Secondary One from the schools studied actually made it to the next higher stream each year. In most years hardly any student ever crosses over. Crossing over to the NA stream for the next higher grade exists only in Secondary One after which the window of opportunity is closed.

It has been argued that schools - in their present forms - were designed for the industrial age (Bayliss, 1998). They have been remarkably stable in their structure over the last hundred years and most changes made have been relatively superficial (Cuban, 1990; Sarason, 1990). During that time, society has changed. One hundred years ago it was more rigid in its structures – class, gender roles, religious identity – and working practices. Most societies are now multicultural and gender roles have changed considerably. The nature of work has also changed. Working practices have generally become less rigid with flexible working hours, more part-time and hourly paid work and more working from home. These changes in working patterns have not been reflected in contemporary school structures and practices. Schools are attempting to provide education for the changing needs of the twenty-first century with structures designed for the greater rigidity of the nineteenth century (Bayliss, 1998). In Singapore, despite the buzz words of greater flexibility and ability-driven education, certain policies just seem too sacred to be dispensed with in spite of the objections of the public and parents. In August 2005, the Minister announced a series of changes: Normal Academic students who are deemed capable of obtaining 5 ‘O’ level passes in the ‘O’ Level Cambridge Examinations need not sit for the less demanding ‘N’ Level Cambridge Examinations. Schools can now have the flexibility to introduce more Elective Modules (EM) for the NT students which will provide them with credits which they can use when they enrol in the Institute of Technical Education (ITE) after their ‘N’ Level Examinations in Secondary Four. Furthermore, schools can have more flexibility to allow NA students to

do more subjects at the 'O' level or Express standard if they are deemed capable. With all this said, the fact is that the three streams still remain intact. The streaming policy, although intended to maximise the potential of Singapore's young people, may in actual fact serve to defeat the aims which it sets out to achieve.

BACKGROUND OF THE STUDY AND RESEARCH CONTEXT

Streaming in Singapore

The major policy initiatives in Singapore that have been introduced in the past three decades have altered the shape of the education system. One of these is the introduction of ability-based streaming as proposed in the *Report on the Ministry of Education* (1979) - which became known as the Goh Report. Moreover, the educational response to pluralism in Singapore has always been the policy of bilingualism, with English as the common link language and ethnic languages - Malay, Tamil and Mandarin - as second languages. According to the Goh Report (MOE, 1979), it became apparent that in the 1970s about 20 to 30 percent of students were unable to meet the bilingualism requirement, but because the policy was "sensitive" few spoke up (Gopinathan, 2001).

It took the efforts of the then Deputy Prime Minister and Minister for Defence, Goh Keng Swee, to declare that many students were being pushed out of the system at the end of year Primary Six due to failure in one or the other language, leading to wastage, and that secondary school leavers were not sufficiently bilingual. As a result of the Goh Report (MOE, 1979), the New Education System (NES) was introduced in February 1979, which resulted in a radical restructuring of the education system around ability-based streaming at both the primary and secondary levels of education. The Report (MOE, 1979) proposed the introduction of ability-based streaming at the end of Primary Three and the introduction of an ability-differentiated curriculum and extensions to length of schooling for the weaker students (Gopinathan, 2001). These students would be placed in the Normal Stream and they would have to do five years of secondary education instead of the four years, which the academically stronger students, known as the Express, take.

In the words of the Goh report (1979), streaming would “provide an opportunity for less capable pupils to develop at a pace slower than for the more capable pupils”. In addition, it would “allow a child every opportunity to go as far as he can”. Thus, for a child who is not meant for academic endeavours, streaming would help to ensure that he acquires basic literacy and numeracy, as well as preparation in training for a skill.

(Yip, Eng, & Yap, 1997, p. 17)

Nine years after the recommendations of the Goh Report (MOE, 1979) were implemented, another report, *Towards Excellence in Schools* (MOE, 1987), was published with the intention of providing an education to cater to the best students that would enable them to provide leadership to meet the challenges of an emerging service and knowledge-based economy. As a result, independent schools and subsequently autonomous schools were set up. The policy was considered elitist (Gopinathan, 2001). Even with the introduction of these two policies the school system did not provide the broadly educated workforce that would be needed to support the new service and knowledge-oriented industries. The system was still pushing up to 20 per cent of each cohort of students into early vocational training. Vocational trainers found these students ill-prepared and poorly motivated for a labour-short economy that provided ample jobs. As a result of this, another report, *Improving Primary School Education* (MOE, 1991) was presented. The principal recommendations were: to postpone streaming by one year, that is, to Primary Four; to alter the Primary School Leaving Examination (PSLE) from a pass-fail to a placement examination; and to allow almost all students to go on to secondary schools to complete an additional four to five years of secondary education. The report accepted the notion of ability differences and proposed that a new track, Normal Technical (NT), be introduced with a separate curriculum for these students. It also proposed that the Institute of Technical Education be established to cater to post-secondary school leavers (Gopinathan, 2001).

The rationalization in the Goh (MOE, 1979) and the *Improving Primary School Education* (MOE, 1991) reports was the avoidance of “wastage” and the need to educate manpower better to service the economy. Although the demands of the bilingual policy

on less able students were identified as the cause of school failure, the policy response was streaming rather than an abandonment of the bilingual policy. In fact there was much public debate and controversy on the moral issues inherent in the NES (Yip, Eng, & Yap, 1997). Policy-makers, on the other hand, claimed that streaming drastically reduced the dropout rate (Gopinathan, 2001).

Although streaming starts in Primary Four in the primary schools, the situation is very different from that in the secondary schools. In Singapore all Primary Six students sit for the Primary School Leaving Examination (PSLE). The PSLE results are released soon after the last day of the school year. Thereafter, parents and students can make their choice (except for those admitted to secondary schools under discretionary admission) and posting results are released before 25 December of each year. Posting of students to particular schools is based on merit and parent-student choice.

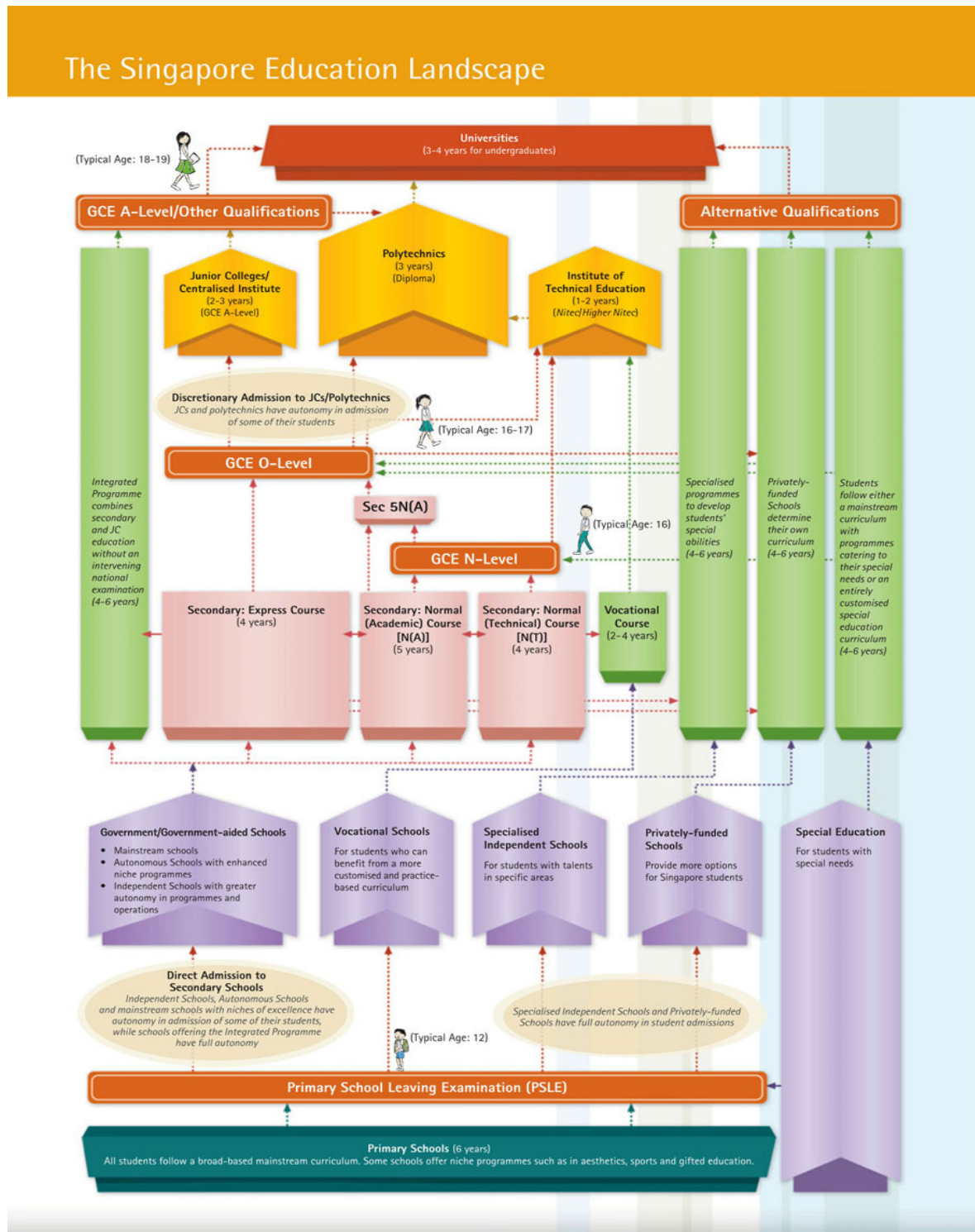
Students entering Secondary One are streamed into the Special, Express, Normal Academic or Normal Technical course according to how they perform at the PSLE (Figure 3). The different curricular emphases are designed to match their learning abilities and interests. The *crème de la crème* are mostly taken in by the Independent Schools (IS), Special Assistance Plan (SAP) schools, and the Autonomous Schools (AS), while the rest end up in the neighbourhood schools.

All neighbourhood secondary schools as well as some autonomous schools have one or two classes of NT students given to them each year, each comprising of forty students per class. The Normal Technical (NT) Course as defined by the Ministry of Education (MOE, 2007b) is a 4 to 5 year course for the technically inclined pupils. The course is intended to strengthen pupils' proficiency in English and Mathematics with the objective of preparing them for technical-vocational education and training at the Institute of Technical Education (ITE). Those who are able may study an additional year and sit the 'O' Level Examination. The Normal Technical students are the slowest academically and their average Primary School Leaving Examination (PSLE) aggregate scores range from 50 to 199. These comprise mainly of EM3 pupils and a mixture of EM1 and EM2 pupils from the primary schools. EM1 pupils do Mother Tongue at first language level, EM2

pupils do Mother Tongue at second language level and EM3 pupils do the Mother Tongue at the most basic level. The EM3 are the academically weakest students in terms of English, Mathematics and Mother Tongue Language. This is a vast difference from that of the aggregate scores of students in the best independent schools where the scores range from 262 to 285. According to the then Minister of State for Education, Dr Tay (1993), "These different courses are designed to meet the needs, abilities and aptitudes of the different PSLE school leavers. ... Those who have the least aptitude for the academic subjects but are better in practical subjects will go to the Normal (Tech) stream."

On 29 September 2004, the Minister of Education at the MOE Work Plan Seminar announced that in line with the MOE's emphasis to broaden the educational experiences of students, give them greater choice, and to provide for their varied learning needs and styles, schools may offer Elective Modules (EMs) to the NT students in addition to the NT curriculum. He mentioned that the EMs could be developed in collaboration with the Institute of Technical Education (ITE). The design of the EM should serve to extend and build on the learning objectives of existing NT subjects; introduce students to courses of study in ITE; and/or to expose NT students to possible career paths. Schools may offer up to two EMs in their upper secondary years, when they are more mature and clearer of their post-secondary aspirations. Schools which are ready to offer EMs to their NT students may do so from 2005 (MOE, 2004).

Figure 3: The Singapore Education Landscape



Source. (n.d.) Ministry of Education, Singapore: Education System.
(<http://www.moe.gov.sg/education/>)

However, the solution to the negative effects of streaming on students in the NT stream lies not in providing these students with a few more choices when the choices in themselves lead them to where they were identified to go in the first place, which is to the Institute of Technical Education (ITE). This realisation, coupled with the changes in the NA stream of allowing the NA students to do Mathematics and Mother tongue at the Express level, and the discontinuation of streaming in primary four to the EM1 stream indicates a backtrack and an indirect admission of the inadequacies of some of the streaming policies. Even Mr. Lee Kuan Yew, the then Senior Minister in his speech (MICA, 2004) finally admitted that:

I have reluctantly concluded that very few people can be fluent in two languages. I once thought that a person's ability to learn languages corresponded to his IQ or intelligence. I have learnt that students of the same IQ have different linguistic skills. As a government we tried to get every student to achieve as high a standard in Mandarin as possible, to be near the standard of their English as possible. This proved counter-productive. Students and parents put up with the system because they had no choice, but significant numbers had their interest and enthusiasm killed by the drudgery of memorising words, phrases and proverbs that they did not have a use for other than to score in examinations. And doing well in exams is not the same as using the language fluently after leaving school.

This was precisely what was identified as the cause of school failure in the first place back in 1979 (MOE, 1979; Yip, Eng & Yap, 1997). As a consequence many students who did well in Maths and Science but were weak in their Mother Tongue language were streamed to the Normal Academic and the Normal Technical streams and thus had their future decided for them.

One of the main effects is the negative labelling that goes with streaming which stigmatises the students for life and the negative effects these have on their self-esteem. In this regard, literature abounds with evidence, although controversial at times, to show that streaming does have unwarranted effects on the students. There is clear evidence that the low streams tend to include disproportionate numbers of pupils of low socio-economic status (Douglas, 1964; Peak & Morrison, 1988) and some ethnic minorities (Troyna & Siraj-Blatchford, 1993; Gillborn & Youdell, 2000). The structure of

stratification in schools, its permanence and relative inflexibility can lead to a marked restriction of future options (Hargreaves, 1967; Boaler, William & Brown, 2000). There appears to be a hierarchy of subjects considered suitable for the less able (Tomlinson, 1987; Smith & Tomlinson, 1989; Gillborn & Youdell, 2000). Some other negative effects are on students' expectations (Berends, 1995), effects on their social mixing (Berends, 1995), pupils' attitudes towards school (Ireson, Hallam & Hurley, 2001), and impact on pupils' self-perceptions (Oakes, 1985; Byrne, 1988; Chapman, 1988; Ireson, Hallam & Plewis, 2001). The personal experience of the researcher as a principal of a school with NT students, confirms the evidence from other countries.

THE SIGNIFICANCE AND OUTCOMES OF THE STUDY

A review of the literature reveals very little research in the area of streaming in Singapore schools. A few of these were on the Normal Technical students: Chang (1990); Goh Chang and Chen (1996); Chang, Goh, Moo and Chen (1997); Quek (1988); Ng (1999); and Rahma (2003). There has been no research on the effects of streaming on students either in the primary or secondary schools in Singapore. There is also very little knowledge and no explanatory theory about the perceptions of the NT students in Singapore on streaming and its relationship to how the principals manage the situation in their schools. Students' perceptions and experiences of being in the Normal Technical stream could be influenced by the principals' perceptions and management of the students. Is this a consequence of social interaction (encapsulated in the theory of symbolic interactionism) and therefore, a self-fulfilling prophecy? References will be made to the labelling theory as proposed by Knutsson (1977) as well as to the social theory of symbolic interactionism as developed by Blumer (1969). The findings from the present study may give rise to implications for principals' management strategies of these students in Singapore schools. An extensive search of the literature has failed to identify studies that have examined this phenomenon.

Second, there appear to be no research studies that have used grounded theory method - which is the proposed method in this study - to examine the way principals manage NT

students in their school. This study is therefore uniquely placed to generate theory, grounded in data collected from secondary schools in Singapore, about this particular phenomenon. It is anticipated that the theory that emerges from this study will be comprehensible and conceptually as well as practically useful, to those principals who will be studied.

Third, the nature of grounded theory is such that the emergent theory ‘will be abstract enough and include sufficient variation to make it applicable to a variety of contexts related to that phenomenon’ (Strauss & Corbin, 1990, p.23). In other words, the theory developed from this research will be of use to other principals with NT students, educational policy-makers and members of the wider educational research community. Grounded theory has been used extensively as a research methodology in sociology and in nursing and related fields. It has been used less widely in education. This study will provide an opportunity for observations to be made about the applicability of this mode of research in education and more specifically in the field of management in relation to tracked/streamed students.

Finally, for the teachers, principals and educationists involved in the education of NT students, the findings of this study will enable them to be constantly aware of how they can manage these students better. For the policy-makers, this study hopes to shed light and perhaps lead to an evaluation of how they can better provide alternatives to develop the potential of every child in the school system without the effects of labelling or stigmatising.

STATEMENT OF THE PROBLEM AND THE RESEARCH QUESTIONS

The central question of the present study is “How do principals in neighbourhood secondary schools in Singapore manage Normal Technical (NT) students who form the lowest ability stream in their schools?”

The study and especially the data-gathering process will be guided by the following key *specific research questions*:

1. What are principals' perceptions of streaming as a way of organising students in secondary schools?
2. What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students? and
3. Do the principals' perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes?

LIMITATIONS OF THE STUDY

The researcher has been a principal of a neighbourhood secondary school with three streams of students for fourteen years, and is currently still a school principal. As a principal, he was concerned about the negative labelling associated with streaming, particularly the Normal Technical (NT) label; the negative perceptions about these students, both by educationists and society; the undemanding curriculum available; and the educational and career prospects of these students. This prompted the researcher to embark on this study.

This study is limited to the NT students and principals of the neighbourhood schools in the Singapore context. Being a principal and having my own ideas about streaming may influence the slant of questioning, the manner in which I report the findings and the bias that may arise. To avoid these as much as possible, and to prevent it from influencing the research process, I have consciously focused on the data collected and followed strictly the interview schedule.

A second problem is that in interviewing principals, there will exist a certain tendency on the part of the participant principals to project to me, the interviewer, the expected role of principals. This may not accurately reflect their true standpoints or their normal day-to-

day operational relationship with their students. The fact that I am also a fellow principal may prevent the participants from sharing their own weaknesses with me. This is a high possibility. However, as explained in Chapter Three, the researcher endeavoured throughout to limit such bias – from both his own viewpoint and that of participants.

Another problem is the hierarchical nature of Singaporean society. The fact that streaming has been practised for so many years may have affected the mindset of the majority of students in terms of accepting it as only beneficial. They may thus have been immunised to the disadvantageous effects of streaming. Students may have taken streaming for granted and have accepted it as good for them since they have been identified as the “slower learners”.

Finally, the small size of the sample of principals affects the generalisability of the findings. However, the aim of this study is not to generalise. Rather, the aim of this study is to generate a theory that understands and explains the phenomenon of principals’ management of NT students in Singaporean neighbourhood secondary schools. According to Rossman and Rallis (2003), “no studies are perfect; that findings are tentative and conditional; that knowledge is elusive and approximate; and that our claims should be humble, given the extraordinary complexity of the social world we want to learn more about”.

OUTLINE OF THE THESIS

This thesis consists of seven chapters. The initial introduction and abstract provides a preview of the whole thesis. Chapter Two is a review of the relevant literature covering all the pertinent aspects of the study. Chapter Three defines and justifies the methodology underpinning the study. Chapter Four, Five and Six report and discuss on the findings of the study and Chapter Seven consists of a summary and conclusion.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

The focus of the literature review for this study is on ability grouping and streaming rather than the educational leadership and management of the principal. That is, the study explores the axial relationship between principals and their Normal Technical (NT) students.

There is a wealth of material on principalship and student learning outcomes – much of it complex, inconclusive and contradictory (Hallinger, Bickman & Davis, 1996; Witziers, Bosker, & Kruger, 2003). There are claims that school leadership behaviours have an indirect albeit statistically significant effect on student outcomes (Hallinger & Heck, 1998; Barker, 2005; 2007) whereas others claim that “significant relationships have been identified between selected school leadership practices and student learning, indicating that evidence exists for certain principal behaviours to produce a direct relationship with student achievement” (Nettles & Herrington, 2007, p. 724).

However, this study is not about that relationship, as important as it may be. Rather the study targets school principals’ actions, focusing specifically on their management of the Normal Technical (NT) students. Consequently, it is primarily concerned with how principals organise and arrange the schooling of the students who have been streamed and labelled in the context of the Singaporean school system. Furthermore, the study is not concerned with the issue of whether the management actions of the principal had direct or indirect effects on the students’ achievements. Finally, in justifying the emphasis of the literature research, it has to be admitted that there is a very limited body of existing literature on the relationship in question. Despite the burgeoning literature on educational leadership and management, the territory of principals and their relationship to streaming

in schools seems a somewhat neglected research area. The scarcity of literature applies even more to the Singaporean context.

The literature review aligns itself neatly to the first two research questions: (1) what are principals' perceptions of streaming as a way of organising students in neighbourhood secondary schools, and (2) what perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?

There is a substantial amount of research on ability grouping of students and their effects especially in the Anglo-American context. A review of this research did not identify any studies specifically in relation to how principals manage their lower ability students. The formation of the Normal Technical (NT) stream in Singapore secondary schools started only in 1994 and to date there has been no attempt to develop a theory about how principals manage the Normal Technical (NT) students in their schools. Therefore, there is currently no theory to test in this case, so this study aims to generate a theory rather than test one. This present research sets out to investigate how principals in neighbourhood secondary schools in Singapore manage their academically weakest students with the major purpose of developing a theory inductively, based on grounded theory methods. A similar grounded theory study by Chalmers (1998) in Western Australia - on how teachers manage their classroom work when they are placed in a position of having a student with a severe or profound intellectual disability placed in their classroom (the antithesis of ability grouping), proposes that teachers can be classified as technicians, strategists or improvisers according to the extent to which they selectively adapt their classroom work and with respect to the impact it has on their lives. The development of a theory in this area of research will serve to inform the practice of school principals. Principals may then be able to manage more effectively. Eight areas of student management – streaming/lateral movement, monitoring, deployment of resources, subject offerings, enrichment, discipline, leadership opportunities and treatment of students – gleaned from literature reviews and the pilot interviews with principals, will be explored.

Ireson and Hallam (2001) and Hallam (2002) provide a very comprehensive overview of ability grouping, both in the United Kingdom and other parts of the world. The literature review looks at some of the more salient aspects, which are relevant to the current study such as: controversy over ability grouping; the conceptual and methodological issues of past research associated with ability grouping, their limitations; the effects of structured ability grouping on attainment from international studies; the effects of within-school grouping structures on academic achievement; and the social and personal outcomes of different kinds of grouping. The review also looks at their linkage to labelling theory.

This literature review serves as a basis for the direction of the current research and provides a background to which the findings of this study can be compared. This will be the first study, as far as the researcher knows, to offer findings that can be compared to those in the Anglo-American world.

A search of the research literature revealed little on streaming, the Normal Technical stream and Normal Technical students in Singapore schools. The only research on streaming and learning behaviour was by Chang (1990), the bulk of whose work was done on the Normal Academic Course. Quek (1988) studied the influence of school climate on the academic self-concept of Secondary Three Normal course students. This was before the introduction of the Normal Technical stream in 1994. Another study, by Tan (1995), on the “differences in school-related attitudes among low and high achieving students in the Normal and Express Streams” was a quantitative study.

Research on Normal Technical students has attracted some attention. Goh, Chang and Chen (1996), for example, studied the Normal Technical students’ perceptions of their classroom environment and found that they viewed their classroom environments somewhat positively. In addition the boys appeared to view their classroom climate as more competitive than the girls. Chang, Goh, Moo and Chen (1997) completed a study on the motivation and classroom behaviours of the Normal Technical students. They found that slightly more than half of the teachers rated the students as having low motivation and poor attention spans. By comparison, the common offences committed by the NT

students were no worse than the general offences committed by other students. Also, they found that the most commonly cited reasons by teachers for poor behaviour were: immaturity, low self-esteem, low expectations, poor English language competency, poor learning skills and poor family support. Ng (1999) studied the learning styles of the NT students. His study showed that even in a group like the Normal Technical students, the preferred learning style is as varied as the total of styles available (p. 73). He concluded that the belief that a standard set of instructional approaches to enhance learning can be implemented for this 'streamed' group has to be re-addressed. Much as teachers like to believe that the group is homogeneous in their approach towards learning, his study showed that this was far from it. Rahma's (2003) study was on the meanings Secondary One NT students attach to the letters used in algebra.

The lack of research on streaming in Singapore might be accounted for by the very sensitive nature of the topic. Most of the work on streaming or tracking has been produced in the United States of America and in Great Britain (Hallam, 2002). This study would therefore be a much needed contribution to the knowledge on streaming and particularly, the Normal Technical students, in the Asian setting of Singapore secondary schools.

CONTROVERSY OVER ABILITY GROUPING

The issue of ability grouping has been an ever-present concern and contention both in Singapore as well as in the developed countries. Ability grouping rests on certain assumptions about the nature of ability and its measurement and relates to the ways scarce educational resources in schools are distributed. Ability grouping is also central to the students' esteem and struggle for access to successful roles and routes in schools. The impact of and consequences for those students deemed 'low ability' as well as the academic, social and personal outcomes of grouping by ability, are usually deemed to be disadvantageous.

Ability grouping has been the subject of research for most of the 20th century, since Whipple (1919) carried out a study of the effects of special class placement on a group of high-aptitude fifth and sixth graders in the USA in 1919. Since then hundreds of studies have been undertaken and there have been many literature reviews and syntheses of research findings.

Despite this ever-increasing body of evidence, the field has been characterized by controversy and polemic. According to Hallam (2002) there are several reasons for this. Firstly, there has been no clear definition of the meaning of 'effective' in relation to educational outcomes. Effectiveness may be judged in relation to academic, social and personal outcomes for pupils. Contrasting types of grouping can therefore be judged as effective by the adoption of different criteria of effectiveness (Bartholomew, 2001). Secondly, the research undertaken has rarely been able to consider the various consequences of different types of grouping together. Conclusions have thus had to be drawn across studies adopting different methodologies, which has made definitive comparison difficult (Ireson & Hallam, 2001). Thirdly, and perhaps most importantly, different types of grouping seem to benefit different groups of pupils. Streaming and setting tend to benefit the more able, whereas mixed-ability structures tend to benefit the less able. The type of pupil grouping which is adopted is therefore underpinned by different philosophical values. Because of this, policy decisions about pupil grouping have often been based on ideological principles rather than educational ones (Ireson & Hallam, 2001; Marsh, Chessor, Craven & Roche, 1995; Slavin, 1987a).

Moreover, underlying policies of selective education, streaming, banding and setting are fundamental assumptions relating to the nature of intelligence. Recently, Goleman (1996) has suggested that what he describes as emotional intelligence is more important than measures of cognitive ability in predicting success in life. Overall, intelligence as traditionally conceived is now believed to play a relatively small part in an individual's success in life.

Current thinking about the nature of intelligence, the many factors which affect learning outcomes and the evidence indicating the importance of effort indicate a need for grouping structures within schools which increase pupil motivation and are sufficiently flexible to meet pupil's ever-changing needs. As early as 1931, Turney (1931, p. 23) listed the theoretical advantages and disadvantages of ability grouping. The list, tabulated below (Table 1), while not exhaustive, includes most of the claims made for and against ability grouping:

TABLE 1: Theoretical Advantages and Disadvantages of Structured Ability Grouping
Turney (1931, p. 23)

Advantages	Disadvantages
<ul style="list-style-type: none"> • Permits pupils to make progress commensurate with their abilities • Makes possible an adaptation of the technique of instruction to the needs of the group • Makes possible an adaptation of materials of instruction to the needs of the group • Reduces failure • Reduces elimination • Helps to maintain interest and incentive, because bright students are not bored by the participation of the dull • Encourages slow pupils to participate more because they are not eclipsed by those who are much brighter – restores the confidence of slow pupils • May make competition operative as an incentive • Makes teaching easier • Makes possible individual instruction to small, slow groups 	<ul style="list-style-type: none"> • Slow pupils need the presence of the able students to stimulate them and encourage them • Ambitious pupils overwork • Bright pupils graduate too young • A stigma is attached to low sections, discouraging the pupils in these sections • Teachers are unable, or do not have the time, to differentiate the work for different levels of ability • Teachers object to the slower groups • Parents complain when their children are placed in the slower sections • Programme construction is rendered more difficult • Frequent transfers necessitate more efficient office help

The advantages and disadvantages of streaming as a consequence of policy decisions at the higher state level do not take into account the beliefs, perceptions and actions of the principal. It is assumed that school principals follow very closely the mandates that are

passed down. This, however, may not be the case. So how do principals translate this to their management of such groups of students? This is precisely what the current study explores.

CONCEPTUAL AND METHODOLOGICAL ISSUES

Which types of pupil grouping are the most effective? Whether alternative forms of grouping are seen as effective or not depend on the definition of effectiveness adopted and the criteria against which they are assessed (Hallam, 2002). These are rightly the subject of public and political debate. Views of 'effectiveness' change over time in relation to national priorities and for this reason research undertaken in countries with different educational systems and differing attitudes to and expectations of education, may have limited applicability.

Limitations of the Research and Methodological Issues

Although much research has been undertaken in relation to ability grouping, it is of variable quality and interpreting the findings can be problematic for a number of reasons (Hallam, 2002). Firstly, pupils can be grouped, by ability, through selective schooling, streaming, banding, setting or within classrooms. Often, different types of grouping operate simultaneously at different levels within the same school (Rutter, Maughan, Mortimore, & Ouston, 1979; van Laarhoven & de Vries, 1987; Slavin, 1987a; Hallam & Toutounji, 1996a; 1996b). American research is often based on students classifying themselves as being in vocational, general or academic tracks, creating further difficulties (Gamoran & Berends, 1987). Even where a school has a policy of mixed-ability grouping, individual teachers may be grouping by ability within their classes. It is therefore difficult for researchers to establish with any clarity the nature of pupil grouping as it is practiced within a school (Codling, 1975). The validity of research where comparisons are made between pupils in mixed-ability and streamed, setted or banded groups is therefore called into question.

The second problem concerns the nature of the educational outcomes that are considered. Two major groups of outcomes have been studied, those relating to social and personal development and those relating to academic achievement. There may be a trade-off between these; few research projects have focused on both simultaneously, however. In addition, different studies have adopted different measuring procedures, making comparison across studies difficult.

Academic outcomes have been assessed by a range of different standardized tests, examination performance and course completion. Examinations and courses vary across time, between countries, between different locations within countries and between schools. These are often not comparable. Generally, a narrow range of learning outcomes has been researched with little concern for critical thinking, degree of understanding, creativity and meta-cognitive and transferable skills. Personal and social outcomes have also been assessed in a variety of ways, using different measures of self-esteem, motivation and alienation or interview techniques. Drawing conclusions across studies is therefore problematic.

Thirdly, the research has been limited in its time scale. Very few studies have followed up the long-term effects of selection, streaming, banding and setting on individual personal development and career prospects.

Fourthly, interpretation of findings is difficult because within any single school, the academic and affective outcomes of grouping are not consistent in size, over time, across subject domains, or between teachers (Newbold, 1977). Teacher behaviour appears to be crucial in mediating the effects of grouping (Barker Lunn, 1970; Newbold, 1977; Gamoran, 1986). There appear to be complex interactions between grouping, teaching methods, teacher attitudes, the pacing of lessons (Burns, 1987) and the ethos of the school (Dar, 1985; Ireson & Hallam, 2001). The grouping of pupils is only one of several factors affecting the learning environment of the classroom; the quality of instruction and the curriculum are central (Creemers, 1994) and both may mediate the effects of pupil

grouping (Gamoran, 1986; Passow, 1988). These contextual issues, in particular those relating to the way that grouping is embedded in the ethos of a school and may affect relationships with the wider school community, have largely been ignored. Every school is unique and 'has its own characteristics which are shaped by such factors as its location, pupil intake, size, resources and most important the quality of its staff' (Reid, Hopkins & Holly, 1987). For this reason, the effects of the same system of pupil grouping may be different between schools and even within the same school as it is implemented differently by individual teachers. Studies conducted to date do not indicate how principals manage the learning and other outcomes of such groupings.

A final problem is that the effects of grouping are not consistent across different groups of pupils. To date, the research suggests that more able pupils benefit from structured ability-grouping procedures while the personal and social outcomes of the less able pupils are adversely affected by streaming, banding or setting (Gamoran, 1986; Kerckhoff, 1986; Boaler, Willian & Brown, 2000; Ireson & Hallam, 2001; Hallam, Ireson & Hurley, 2001a; Ireson, Hallam & Plewis, 2001). The issue is not merely whether ability grouping is effective, but for whom it is effective, in what ways and whether anyone else suffers as a result.

Linkage to Labelling Theory

Labelling Theory

Slee (1993, p. 353) claims, "Schooling remains a critical agent in defining, labelling and treating disability." Indeed, social construction of the disability hinges on assigning labels of deviance and the construction of an Other. Christiansen (1992) highlights problematic aspects of the assignment of labels, thus:

1. Labels are negative in their depiction of deficits;
2. The labels become the defining characteristic of the person, denying their complex whole; and

3. The use of labels for identifying 'special education needs' fails to properly locate failure in the education system (Christiansen in Slee, 1993, p. 358).

Labelling is believed to be detrimental to self-esteem and self-concept (McDermitt, 1993). The deficits of these students are diagnosed and labelled and they are treated accordingly.

The use of binarisms and the development of labels in the construction of subjectivity have been explored by Marks (1994), who states: "People with disabilities have always been constructed in terms of binarisms ... To speak of disabilities is to acknowledge the existence of people without disabilities" (Marks, 1994, p.73). Moreover, one of the dichotomous pair is "valorised, and given status, at the expense of the other". With resultant dichotomisation into "us" and "them", persons with a disability, the "undesirable half of a binary pair" (Marks, 1994, p.73), are Othered - devalued, given deviant status and believed to be in need of normalisation. According to Marks (Marks, 1994, p.76) "new labels and new disabilities ... are constantly being created ... and students continue to be blamed for their disabilities". Through the use of labels some students are viewed as acceptable, whereas some become Other. Inherent in the language used to label and inscribe the disabled, then, is the ideology that marginalises, silences and constructs subjectivities as devalued and demoralised. Is not streaming students with different abilities and then classifying them as slow learners in the Normal Technical stream tantamount to treating kids with a form of 'disability'?

The problem that ensues with streaming is that it creates this "Other" in the minds of the students, teachers, parents and the wider community. Labelling students and constructing them as deviant is alive and well. The term label is derived from social labelling theory. Gove (1980) outlines two stages in the labelling model: the process that results in labelling, and the consequences of labelling. Related to the labelling process is the definition of deviance, which, according to Gove (1980), can be used to analyse and explain the experiences of disabled persons. Here, labelling is defined as "the attachment

of a deviant name to some action or attribute(s) of an individual" (Perusin, 1994, p. 83).

Gove (1980) states:

As with other deviants, it is not so much their actual disability that is the key, but rather society's reaction to it ... The resulting [label] ... attached renders an individual ... deviant. (p. 234)

When the individual does not fit into what most society consider normal, they are perceived as deviant (Perusin, 1994). Deviance, then, is largely socially constructed - determined by the judgements of others.

Once labelled as a deviant, the individual suffers the often debilitating consequences of the label. Knutsson (1977) observes that the label imposes a negative status on an individual:

Labelling entails that the identity assigned to an individual is in some respect altered to his/her discredit. When an individual is publicly labelled, certain negative qualities are assigned to them and s/he is forced into the deviant role. The labelled individual is treated as if s/he possessed certain characteristics which are stigmatising. (p. 9).

The deviant's social situation is changed as is his/her self image - the negative label has a destructive impact on the individual who conceived him/her self as a deviant; "s/he has become what people said" and acts accordingly to the new status as deviant (Knutsson, 1977, p.10). Both society and the individual view her/him as "Other".

In a similar vein, Sacco (1992) proposes three ways in which the imposition of a negative label on an individual alters his/her behaviour: a) when labels are assigned, patterns of social interaction are changed; b) the labelling of deviance pushes people into the periphery or margins into the company of others in a similar subculture; and c) an individual who has acquired the classification of deviant gradually conforms to characteristics of the label (or society's expectations), resulting in a "self-fulfilling prophecy" (Sacco, 1992 in Perusin, 1994, p.84).

Fairbanks (1992) acknowledges that schooling becomes an agent in impeding intellectual and social growth for the labelled student. Bak, Cooper, Dobroth and Siperstein (1987) observe that special class placements can act as *de facto* labels. Indeed, most labels associated with Special education “can be used in demeaning ways ... are imprecise descriptions of need, ... sometimes are assigned wrongly, ... may not result in the student's getting appropriate services and ... are difficult to remove or forget” (Kauffman & Pullen, 1996, p.10).

Hallahan and Kauffman's (1994) observation that labelling damages self-concept and motivation to learn, as well as resulting in others (teachers and peers) viewing the student differently - negatively - is echoed in Stainback and Stainback's (1987, p.67) assertion that labelling is "detrimental and leads to the individualisation and stereotyping of students". Will (1986, p. 412) argues that the language and terminology employed is "full of the language of separation, or fragmentation, of removal", functioning to alienate and make passive parents and students. Belief that labelling students is a negative process is characteristic of many researchers and educators in the field.

EFFECTS OF STRUCTURED ABILITY GROUPING ON ATTAINMENT

Comparisons of School Systems

The evidence from research of selective systems of education suggests that they affect opportunity to learn; that is, they deny some students access to aspects of the curriculum (Ireson & Hallam, 2001; Hallam, 2002). Internationally, variations in opportunity to learn are large and related to the age of selection and the degree of streaming, banding, setting or tracking. Lughart, Roeders, Bosker and Bos (1989) present an overview of studies examining the relationship between opportunity to learn and student achievement. They demonstrate the importance of selective systems in accounting for variation in academic achievement between countries, schools and in the classroom. Scheerens, Nanninga, and

Pellgrum (1989) conclude that variations in academic attainment between schools are smaller in countries with comprehensive systems where tracking is absent.

In the school effectiveness studies, Rutter, Maughan, Mortimore and Ouston (1979) argue that one important factor in school effectiveness is the balance of intellectually able and less able children in a school. When too many children are unlikely to achieve academic success, an anti-academic or anti-authority peer group culture is more likely to be in evidence. Evidence from the USA, in schools where the catchment area consists predominantly of low income and minority group families, suggests that school populations can become bottom heavy, with smaller academic tracks and larger remedial and vocational tracks (Oakes, 1990). Willms (1986) notes that students of average ability in high-ability schools scored more than a full examination grade higher than comparable students in schools where the majority were pupils of lower ability. Recent research on performance in mathematics (Opdenakker & Van Damme, 2001) suggests that there are important relationships between school composition and school process variables which have important joint effects on achievement independent of initial pupil ability. This has clear implications for selective schooling systems, where ‘creaming off’ academically able pupils may leave other schools with an inappropriate balance of pupils.

Singapore’s streaming policy is unlike any in the world. It explicitly streams the students into various streams and labels the different groups. Students are convinced that they are only suited for the stream they qualified for after their Primary School Leaving Examination and many have come to accept and believe that is where they should be. The literature review tells us the effects of streaming but falls short of telling us how the views of principals in such schools, where streaming takes place, affect their management of these students in such groupings.

Findings from School Effectiveness Studies

Early research on effective schools suggested that they were equally effective or ineffective for all of their pupils (Rutter, Maughan, Mortimore & Ouston, 1979;

Reynolds, 1982). It has now been demonstrated that schools can differ in their relative effectiveness for different groups of pupils (Aitken & Longford, 1986). Some work suggests that pupils from homes of high socio-economic status (Cuttance, 1992) and of high ability (Gray, Jesson & Jones, 1986; Opdenakker & Van Damme, 2001) are more affected by their schools than pupils of lower socio-economic status or lower ability. Schools can be differentially effective for high- or low-ability children (Willms & Cuttance, 1985).

There are also different patterns of achievement in different subject domains within a school (Levine, 1992) and evidence that departments differ in their levels of effectiveness (Harris, 2000; 2001). Schools can also be effective in relation to different educational outcomes, academic and social (Galloway, 1983; Gray, McPherson & Raffe, 1983; Steedman, 1980; Mortimore, Sammons, Ecob, Stoll & Lewis, 1988; Sammons, Thomas & Mortimore, 1997). Taken together, this research suggests that ability grouping in schools is only one of many factors which impact on the academic performance and social and personal development of pupils (Hallam, 2002).

EFFECTS OF WITHIN-SCHOOL GROUPING STRUCTURES ON ACADEMIC ACHIEVEMENTS

International Studies – Secondary School

Examining the effects of tracking on performance on standardized tests, Slavin (1990) concludes that comprehensive between-class ability grouping structures had little or no effect on attainment. Twenty-nine studies were included in the review; each compared ability-grouped with heterogeneous groups. Across the studies the effects of ability-grouping on student achievement were zero. This was strongly supported by evidence from Grades 7-9 and, in so far as the evidence was available, in Grades 10-12. The different forms of ability grouping led to similar outcomes in all subjects except social studies, where there appeared to be negative effects. When the effects on pupils of different ability are considered, Slavin (1990) concludes that assigning students to

different levels of the same course had no consistent positive or negative effects on students of high, average or low-ability.

It might be that differential effects of streaming build up over time and that longitudinal studies would show greater differences. One multi-year randomized study by Marascuilo and McSweeney (1972) found that over two years, students in the top social studies classes improved more, but only slightly more, than similar students in heterogeneous groups, whereas middle- and low-ability groups improved significantly less. However, across multi-year correlational studies of up to five years' duration, not one found a clear pattern of differential effects.

Slavin (1990) concludes that grouping procedures *per se* had little effect on high achievers, although he fails to discuss programmes for 'gifted' pupils. Effects on achievement were only in evidence where programmes were accelerated and materials were taught at a higher level. Overall, he concludes that research did not support the view that high achievers gained from ability grouping whereas low achievers were disadvantaged. However, in most of the studies that were compared, the groups of tracked students took different levels for the same courses and much of the impact of tracking, particularly at the senior high school level, is related to determining the nature and number of courses taken in a given area. These studies only considered between-class grouping within the same course. They did not consider the effects of tracking on course selection and course requirements.

The findings from studies which examined progress and course-taking by students in academic, general and vocational tracks differed from those described earlier (Slavin, 1990). After controlling for IQ, socio-economic status, pre-tests, and other measures, students in high tracks gained significantly more in achievement than did students in low tracks, especially in mathematics (Gamoran & Berends, 1987). The data used in these correlational studies included the effects of being in a high-, average- or low-ability class and also the effects of differential course-taking; students in academic tracks may score

better than those in general or vocational tracks because they take more courses or more advanced courses.

The confounding of tracking and course-taking makes it very difficult to draw conclusions. A number of studies support the view that tracking widens the gap between high and low achievers, but this is in part because of differential course-taking.

Kulik and Kulik (1992) considered five distinct programmes: multi-level classes, cross-grade grouping, within-class grouping, enriched classes and accelerated classes in both primary and secondary schools. Multi-level classes are similar to setting in that students in the same grade are divided into groups based on ability, often high, middle and low. The groups are instructed in separate classrooms for either a full day or a single subject. Most multi-level classes attempt to make life easier for teachers by reducing the level of pupil variation in their class. In cross-grade grouping, children from different grades are formed into groups on the basis of their level of achievement in a particular subject.

When classes are enriched for the gifted and talented, the pupils receive richer, more varied educational experiences than would be available to them from the regular curriculum for their age. Such classes are usually characterized by a challenging educational programme with distinctive methods and materials. Accelerated classes for the gifted and talented provide instruction that allows pupils to proceed more rapidly through their schooling or to finish schooling at an earlier age.

Kulik and Kulik (1992) conclude that the differences in curriculum enabled differences in attainment. Multi-level classes, which usually entailed little adjustment of course content for ability groups, typically had no effect on student achievement. Where the curriculum was adjusted, in cross-grade and within-class programmes, there were clear positive effects. Programmes of enrichment or acceleration which involved the greatest degree of curricular change had the largest effects on student learning. The effects of pupil grouping depended on the type of programme. Generally, the higher ability groups

benefited, but in these cases there did not appear to be negative effects on the achievement levels of middle and low-ability groups.

Taken together, the evidence from the reviews of Slavin (1987a; 1990) and Kulik and Kulik (1982; 1992) indicates that where there are differential effects on achievement related to pupil grouping procedures, they depend mainly on degree of access to the curriculum or, as Carroll (1963) first described it, 'opportunity to learn'. Where pupils are given greater access or opportunity to proceed through the curriculum more quickly, they achieve more. This is supported by research in the United Kingdom (Hallam, 2002) which has observed positive improvement in performance when schools changed to mixed-ability systems and more pupils were entered for a wider range of examinations. Evidence also shows that increased differentiation in performance when setting enables pupils to proceed at different speeds through the curriculum, the higher ability groups making greater progress and the lower ability falling behind. Where pupils are taught in mixed-ability classes, the overall differentiation of the curriculum is less, and lower-ability pupils tend to perform better (Hallam, Ireson, Mortimore, Hack, & Clark, 1999; Hallam, Ireson & Hurley, 2001b).

The evidence set out above goes some way to explaining why the question of ability grouping is so controversial. Structured ability grouping, of itself, does not appear to lead to consistently better or worse performance in any group of pupils. Pupil performance is related to access to the curriculum and the quality of teaching on offer. In some circumstances, where the curriculum is differentiated, allowing faster progress and more in-depth work, structured ability grouping can be beneficial in raising the attainment of those who are more able. Where the grouping structures lead to low expectations, a reduced curriculum and teaching is focused on control rather than learning, lower ability groups are likely to do worse.

Neither of these scenarios is inevitable (Hallam, 2002). Teaching in the top sets may be too time pressured and competitive to enable in-depth understanding for some pupils, leading to poor performance. In the bottom sets, teachers with high expectations who

have positive relationships with the pupils, engender high levels of motivation and set interesting, challenging work are likely to improve performance. However, grouping structures themselves have a powerful influence on teachers' attitudes, expectations and pedagogy, and on the way that pupils view themselves and interact with teachers. There is therefore a tendency for structured ability grouping to increase differences in performance between the more and less able. In contrast, in mixed-ability classes, there is less extreme differentiation of the curriculum and pupils' experiences of pedagogy are more similar. This is likely to lead to a reduction in differences in performance between the more and less able, although the quality of the teaching is likely to determine whether there is levelling up or down. If the work is challenging, stimulating and appropriately differentiated, where necessary, the performance of the high-ability pupils is likely to be maintained and that of the lower-ability pupils raised. The research to date does not provide us with an understanding of how the school principal manages the grouping of students, provides access to the curriculum as well as enhances the opportunity to learn for students in the lower ability grouping.

SOCIAL AND PERSONAL OUTCOMES OF DIFFERENT KINDS OF GROUPING

Effects on Particular Groups of Pupils

Hallam (2002) points out that historically, the most serious criticisms of selection, streaming and tracking are derived from their perceived social consequences. There is clear evidence that the low streams tend to include disproportionate numbers of pupils of low socio-economic status (Douglas, 1964; Sandven, 1971; 1972; Winn & Wilson, 1983; Oakes, 1985; Burgess, 1986; Vanfossen, Jones & Spade, 1987; Peak & Morrison, 1988).

According to Hallam (2002) when selective education and streaming was the norm in the UK, it dictated the course of study in all areas. Those in the higher streams and grammar schools were oriented towards university, while those in the lower streams and at

secondary modern schools were targeted towards the job market. The structure of stratification in schools, its permanence and relative inflexibility can lead to a marked restriction of future options (Hargreaves, 1967; Lacey, 1970; Ball, 1981; Boaler, William & Brown, 2000). In the USA, Oakes (1992) sets out similar arguments in relation to the effects of tracking on the opportunities of low-income, African-American and Latino students. College-track students enjoy better prospects for high school completion, college attendance, grades and graduation and, indirectly, high-status occupations than non-college track peers (Vanfossen, Jones & Spade, 1987; Gamoran & Mare, 1989). The College Board in America has also criticized tracking for posing barriers to minorities' access to college (Goodlad, 1989). Moreover, there appears to be a hierarchy of subjects considered suitable for the less able (Tomlinson, 1987; Smith & Tomlinson, 1989; Gillborn & Youdell, 2000).

The current study attempts to investigate the perceptions of principals regarding their NT students – that is, student characteristics, background and their future orientation. It seems likely that different school principals have different perceptions and beliefs about their NT students' abilities, potential and what they believe is good for them. The study also examines how the principals manage these students by making available the various subject options.

Expectations

Another perceived negative effect of structured ability grouping highlighted by previous research is its influence on the expectations of pupils regarding their prospects (Gamoran, 1986; Kerckhoff, 1986). Low-stream pupils have low expectations of themselves, a perception which is reinforced by their parents and teachers, leading to self-fulfilling prophecies. Tuckman and Bierman (1971) showed that moving black pupils to a different school and placing them in a different ability group resulted in changed expectations and improved academic progress (cited in Winn & Wilson, 1983). Reuman (1989) also found that early tracking not only shaped expectations of performance but predicted later

success because of the system itself. The quality of instruction differed between groups, as did resources. This led to a widening of the gap between groups.

In the USA, students in college tracks are expected to enter college, while others are expected to enter the workforce immediately on leaving school. Students in the lower vocational tracks generally hold lower expectations (Berends, 1995). In the UK, when streaming was common place, those in high streams received more encouragement to stay on at school (Hargreaves, 1967; Lacey, 1970). Hallam, Ireson and Hurley (2001a) found that pupils had clear conceptions of the way that their set placement would affect future examination success and ultimately their career prospects.

Gamoran and Berends (1987) argue that because of the symbolic importance of track and stream positions, students and others hold these differential expectations regardless of actual performance or potential. However, not all of the research supports this view. The National Child Development Study showed no differences between streamed and non-streamed schools in their pupils' self-ratings, motivation, or plans for the future (Essen, Fogelman & Tibbenham, 1978; Fogelman, 1983). Nevertheless, high- and low-set or – track students view the top ability groups as offering a better education and more prestige (Rosenbaum, 1976; Hallam, Ireson & Hurley, 2001a). In the UK, setting not only affects expectations but sets very real limits on examination entry and possible attainment (Boaler, Willian & Brown, 2000; Ireson & Hallam, 2001; Hallam, Ireson & Hurley, 2001a).

The current study will investigate the principals' expectations of their NT students in neighbourhood Singapore secondary schools and how these expectations affect their management of these students.

Pupils' Attitudes toward School

The evidence regarding the effects of different kinds of grouping on pupils' attitudes towards school is equivocal. Rudd (1956) found no differences related to ability grouping

but reported that streamed children made fewer contributions and paid less attention in lessons. Their behaviour was also more aggressive than that of non-streamed children. Newbold (1977) found that pupils of early secondary school age were more socially integrated if they were in mixed-ability classes, but that it was only the low-ability children who tended to have a more positive attitude to school life when they were in mixed-ability systems. The differences in attitudes towards school within one system were as great as the differences between systems.

In a follow-up study, Postlethwaite and Denton (1978) showed that pupils in the mixed-ability system had more positive attitudes towards the school as a social community. However, the National Child Development Study showed no differences between streamed and non-streamed schools in their pupils' self-ratings, motivation, or behaviour at school (Essen, Fogelman & Tibbenham, 1978; Fogelman, 1983). Similarly, Hargreaves (1967), Lacey (1970) and Ball (1981) found that some pupils were more pro-school than others even within the same stream.

In the USA, Vanfossen, Jones and Spade (1987) noted that students from academic tracks reported fewer disciplinary problems in their schools and were more likely to describe their teachers as patient, respectful, clear in their presentations and enjoying their work. They suggest that these ethos differences may have contributed to differences in achievement and other outcomes and may be related to the proportion of students in the school in academic rather than vocational programmes.

There is evidence that setting tends to have a detrimental effect on the attitudes towards school of those pupils who find themselves in the low sets (DES, 1989; Devine, 1993; Taylor, 1993; Boaler, 1997a; 1997b; 1997c; Ireson, Hallam & Hurley, 2001) although responses tend to be mediated to some extent by relationships with teachers and the perceived quality of the teaching.

The current study will research how principals manage the attitudes and behavioural problems of students streamed to the lowest ability groups.

Alienation from School

Much early research on structured ability grouping focuses on the way that streaming or tracking engendered anti-school attitudes and alienation from school (Hallam, 2002). Where whole peer groups felt alienated, anti-school cultures developed. Streaming, it was argued, played a major role in polarizing students' attitudes into pro- and anti-school camps (Hargreaves, 1967; Lacey, 1970; Ball, 1981; Schwartz, 1981; Gamoran & Berends, 1987; Abraham, 1989). High-ability pupils in high streams tended to accept the school's demands as the normative definition of behaviour, whereas low-stream students resisted the school's rules and attempted to subvert them. Over time, streaming fostered friendship groups (Hallinan & Sorensen, 1985; Hallinan & Williams, 1989), which contributed to polarized stream-related attitudes, the high-stream pupils tending to be more enthusiastic, those in the low-stream alienated (Oakes, Gamoran & Page, 1991). Recent research suggests that this may not have changed. Some groups of students in lower sets are perceived negatively by teachers who find those sets difficult to manage (Bartholomew, 2001). There is also evidence that a substantial minority of pupils do not view the top set as being the 'best', indicating a lack of shared values with teachers in relation to academic attainment (Hallam, Ireson & Hurley, 2001a). Those in the lower sets also have less positive relationships with school (Ireson & Hallam, 2001). A major question, as yet unresolved, is whether negative school attitudes result from streaming, setting and tracking or whether grouping procedures merely reflect existing pupil attitudes.

The findings from the literature have highlighted the possible linkage of teachers' perceptions, attitudes, the quality of their teaching and their response to these students to student attainment but nowhere does the literature offer findings on the part played by school principals in managing the lower ability streamed students in the various cases studied.

The Effects of Different Forms of Grouping

The findings of Ireson and Hallam (2001) reveal that pupils generally accepted and settled into the grouping structures operating within their school. A small number of pupils wished to move down a set to improve their understanding and receive work which they perceived to be better suited to their needs. Teachers were important in pupils' desire to move classes – their teaching skills and personal characteristics were both cited. Some pupils indicated wanting to change set to be with friends. This review of the literature does not reveal any information that students want to move up to a more demanding stream. Where there were requests for movement up a set these were generally from parents who believed that their child should be placed in a higher set (Ireson, Clark & Hallam, 2002). In these schools, members of staff face pressure from parents to move pupils into higher sets. There was a tendency for those in the top and bottom sets to experience some stigmatization as a result of their set placement. However, within these overall trends, there were substantial differences between the experiences of pupils in individual schools (Ireson & Hallam, 2001).

Where structured ability groupings were adopted, they were seen to legitimize and make more transparent differences in pupils' attainment, which was perceived to lead to teasing of high- and low-ability pupils. The negative connotations of the language adopted – 'thick', 'dumb' – were viewed as particularly stigmatizing for those of lower ability. Some pupils perceived that they were in a lower set because of their behaviour rather than their ability (Hallam, Ireson & Hurley, 2001a). The evidence suggests that this is more likely to be the case for boys (Tomlinson, 1987; Boaler, 1997b), particularly those of African Caribbean origins (Wright, 1987; Wright, Weekes & McGlaughlin, 2000). Lack of fluency in English among ethnic minority pupils is often perceived as indicating learning difficulties, which may mean that these pupils are consigned to a lower set than they would have been based on general ability (Troyna & Siraj-Blatchford, 1993; Gilborn & Youdell, 2000).

Most research has examined the effects of pupil grouping in the short term, although there has been some follow-up of career paths through further/higher education and work. Postlethwaite and Denton (1978) showed that mixed-ability and streamed systems showed few differences in connection with the number and quality of pupils who opted to stay on at school, go on to further education or work. Career aspirations were also similar. Essen, Fogelman and Tibbenham (1978) found negligible association between school leavers' future plans and their school's ability grouping policy, although aspirations differed according to whether pupils were in the top, middle or lowest range of ability. The proportions choosing each kind of job were broadly similar in spite of different grouping procedures.

Evidence from research considering motivation and training indicates that the long-term effects of negative school experiences include a reluctance to take up training opportunities (McGivney, 1992; Maguire, Maguire & Felstead, 1993). Pupils' experiences in their school years have a lasting impact on their lives: negative attitudes to learning inculcated during the school years can impact on each individual's motivation to continue or return to education later in life. The way that pupils are grouped within and between schools has effects which go beyond academic attainment (Ireson & Hallam, 2001). Where pupils do not feel valued by the school they will seek other ways of maintaining their self-esteem. This may be through subcultures which hold anti-education values, where it is 'cool' to be disaffected. While schools may be able to 'contain' such behaviour in the short term, in the long term, the alienation of disaffected young people has substantial costs to society as a whole.

CONCLUSION

Considerable research has been carried out on ability grouping in Western countries. The literature review provides us the findings on the advantages and disadvantages of ability grouping, the effects of ability grouping on attainment, and the social and personal outcomes of different kinds of groupings. However, there seems to be two areas where

little or no previous research exists: - (1) How do principals view streaming and how this may influence the way they act towards certain students, and (2) The absence of previous study on streaming in Secondary Schools in Singapore. The present study is possibly unique in that it seeks to provide new knowledge on how principals manage the lowest ability students in their schools. Such management includes how they stream students, allow movement across streams, monitor students, deploy resources, provide subject offerings and enrichment programmes, manage discipline, provide leadership opportunities and how they treat their NT students. Not only will this produce new knowledge, but the data gained from this study is probably the first such data conducted in Singapore. This study also aims to ascertain the perceptions and expectations these principals hold about their students and how these perceptions and expectations affect their management of the students. Moreover, the present study attempts to classify the principals studied into certain ideal 'types' with regard to their management approaches. This has not been done before.

Finally it is hoped that this study will serve to aid policy-makers in refining ways of helping these students achieve their peak potential and provide them with greater and wider opportunities.

CHAPTER THREE

METHODOLOGY

INTRODUCTION

This research employs a qualitative approach, namely an inductive grounded theory method of inquiry, based on the meta-theory of symbolic interactionism to study principals' management of Normal Technical students in Singapore neighbourhood secondary schools.

The central question of the study is, “How do principals in neighbourhood secondary schools in Singapore manage Normal Technical (NT) students who form the lowest ability stream in their schools?”

The study - especially the data-gathering process - was guided by the following key *specific research questions*:

1. What are principals' perceptions of streaming as a way of organising students in secondary schools?
2. What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?, and
3. Do the principals' perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes?

This chapter discusses the justification for a qualitative research approach using the grounded theory method and the assumptions underpinning the theoretical perspective of symbolic interactionism. In addition, it details the research methods used for data collection and analysis in the investigation process. The chapter is divided into seven

parts: first, a justification for a qualitative approach; second, linkage to symbolic interactionism and the central research question; third, an outline of the grounded theory method; fourth, an explanation of the study criteria and sampling methods; fifth, detail of the data collection method; sixth, detail of the analysis and recording of data; and seventh, an account of the trustworthiness of the research method.

JUSTIFICATION FOR A QUALITATIVE APPROACH

Location of the study within the Positivist (Quantitative) and Post-positivist/Interpretive (Qualitative) Paradigms of Research

Paradigms are sets of assumptions and philosophical approaches on which research methods are based. A paradigm may be defined as “the entire constellation of beliefs, values and techniques shared by members of a given scientific community” (Kuhn, 1970, p. 75). Usher (1996) defines paradigms as:

Frameworks that function as maps or guides for scientific communities, determining important problems or issues for its members to address and defining acceptable theories or explanations, methods and techniques to solve defined problems. (p. 15)

The positivist paradigm is based on the scientific method and aims at objectivity, standard procedures and replicability (Johnson, 1994). Gall, Gall and Borg (2003, p. 14) define positivism as “the epistemological doctrine that physical and social reality is independent of those who observe it, and that observations of this reality, if unbiased, constitute scientific knowledge”.

The opposing epistemological position to positivism, namely, interpretivism, is based on the assumption that social reality is constructed by the individuals who participate in it and that aspects of social reality have no existence apart from the meanings that individuals construct for them. These “constructions” take the form of interpretations, that is, the ascription of meanings to the social environment (Gall, Gall & Borg, 2003).

Erickson (1986) defines interpretive research as the study of the immediate and local meanings of social actions for the actors involved in them. Interpretivists believe that there is no objective truth and that:

All human life is experienced and indeed constructed from a subjective point of view, and that social research should seek to elicit the 'meaning' of events and phenomena from the point of view of participants.
(Johnson, 1994, p.7)

They believe that scientific inquiry must focus on the study of multiple social realities created by different individuals interacting in a social environment and that these realities cannot be studied by the analytic methods of positivist research. Lincoln and Guba (1985) state that there are multiple constructed realities that can only be studied holistically. The constructivist approach was developed in large part subsequent to and as a reaction to the positivist approach and is sometimes called post-positivism. Gall, Gall and Borg (2003) define post-positivism as the epistemological doctrine that social reality is constructed and that it is constructed differently by different individuals.

Post-positivist researchers attempt to avoid the problems created by the quantification of features of the social environment by focusing their investigations on the study of individual cases and by emphasising verbal descriptions of what they observe. The data analysis, too, is primarily verbal rather than statistical. The researcher searches for the appropriate words to represent the themes and patterns discovered in the data.

Positivist researchers hold to a mechanical view of causation while post-positivist researchers view causation differently. They assume that people develop interpretations of the social environment that affect their subsequent actions. Therefore to discover causal patterns in social phenomena, post-positivist researchers investigate individuals' interpretations of social reality.

Whilst quantitative research tends to address the 'what?' question, qualitative research seeks insight into the context, to better understand social behaviour (Ary, Jacobs &

Razavieh, 2002) and because it focuses on understandings and meanings, it takes seriously lay accounts and concepts that basically answer the 'why?' question.

Qualitative research thus involves an interpretive, naturalistic approach to the world. It is rooted in phenomenology, of which symbolic interactionism is a kind, and is concerned with understanding human behaviour from the actor's own frame of reference. This perspective results in qualitative methods such as open-ended interviews, participant observation and document analysis. The phenomenological approach sees the individual and his or her world as so interconnected that essentially the one has no existence without the other. Thus the researcher can only understand human behaviour by focusing on the meanings that events have for the people involved. The researcher must look not only at what people do, but also at how they think and feel, and should try to 'experience' what happens to them. The result of a phenomenologic qualitative study is a narrative report so comprehensive that the reader can understand the social reality experienced by the participants.

Furthermore, because researchers do not know in advance how events will naturally unfold or what variables may be important, they do not begin a study with hypotheses (Ary, Jacobs & Razavieh, 2002). Accordingly, qualitative researchers deploy a wide range of interconnected interpretive practices, hoping always to get a better understanding of the subject matter at hand.

The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasise the value-laden nature of inquiry. In contrast, quantitative studies emphasise the measurement and analysis of causal relationships between variables, not processes.

Qualitative research differs from quantitative research in five significant ways (Becker, 1996): uses of positivism and postpositivism, post-modernism, capturing the individual's

point of view, examining the constraints of everyday life, and the securing of rich descriptions. Qualitative researchers also accept and acknowledge their own role in constructing the social realities that they describe in their research reports (Gall, Gall & Borg, 1999). For this reason they often include their own experiences in what they report.

These two terms – quantitative (mainly numerical/statistical expression of data) and qualitative (mainly literary descriptive expression of data), highlight the differences in the kinds of data that typically are collected by researchers and the ways in which the data are analysed (Gall, Gall & Borg, 1999; Ary, Jacobs & Razavieh, 2002). Is one approach better than the other? Do they complement each other in some way? Do they produce conflicting findings? Some researchers argue that quantitative and qualitative researches are incompatible because they are based on different epistemological assumptions. Walker (1985, p. 16) wrote, “Certain questions cannot be answered by quantitative methods, while others cannot be answered by qualitative ones.” Others (e.g., Biddle & Anderson, 1986) believe that the methods of qualitative research and quantitative research are complementary and that researchers who use a combination of both types of methods can give the fullest picture of the nature of educational phenomena:

It is inappropriate to compare the relative efficacy of these two traditions [qualitative and quantitative research] since each has different purposes; broadly these are the generation of insights on the one hand and the testing of hypotheses on the other. Although advocates for discovery [qualitative researchers] decry the arid tautologies of confirmationists [quantitative researchers], and the latter express disdain for the sloppy subjectivism of discovery research, the two perspectives have complementary goals. We need them both. (p. 239)

Gall, Gall and Borg (1999) hold the view that both approaches have helped educational researchers make important discoveries. Clearly the review shows that both methods and approaches are valid and can be used either singly or in combination depending on the research embarked upon. While it is possible, and in some cases desirable, to use the two approaches together (Fielding & Fielding, 1986), attempting to carry out a sophisticated quantitative study while doing an in depth qualitative study simultaneously is very difficult – especially given the limitations of time and other resources for doctoral study.

Choice of Interpretivism for this Study

The different approaches to research are based on the different epistemologies. Both approaches have their merits. One would therefore have to carefully consider the research study and the research questions to determine what would be the best approach to use. The methods used will also be determined by the research aims. In view of the above, the present study on the principals' management of Normal Technical students in neighbourhood secondary schools is best suited to a qualitative approach for the following reasons: First, perceptions of principals are both complex and subjective, the essence and richness of the concepts would be lost if quantitative methods (which assume reality as objective and tangible) were to be used. Readers' deeper understanding of the complex and subjectively constructed nature of principals' experience would also be sacrificed. Second, as the present study aims at examining the phenomenon of principals' perceptions and their management of students, a qualitative method is justified. Third, a major purpose of the investigation is the building of a theory which is inductively derived, and grounded in the data obtained. Consequently, a qualitative approach which facilitates the exploration of theory is justified. Lincoln and Guba (1985) argue that grounded theory researchers prefer that substantive theory emerges from (grounded in) the data because *a priori* theory could not possibly include the multiple realities that are likely to be encountered.

In this study, data are gathered on feelings, perceptions and experiences of the participant principals. Feelings, perceptions and experiences are very subjective. To determine these by numerical measurements from survey instruments would not give one a complete understanding as to why the principals feel and behave the way they do. These data lend themselves more appropriately to a qualitative approach than a quantitative approach. As such, this research is qualitative in nature and the epistemological orientation lies in the interpretive paradigm.

LINKAGE TO SYMBOLIC INTERACTIONISM

Principals' perceptions and their resultant management of the students could influence the students' perceptions and experiences of being in the Normal Technical stream. These are possible consequences of symbolic interactionism as well as that of a self-fulfilling prophecy. References will be made to symbolic interactionism as developed by Blumer (1969). The findings from this study might generate more general implications for principals' management strategies of these students in other Singapore schools, besides those included in this study.

Symbolic Interactionism

Definitions of Symbolic Interactionism

Symbolic Interaction is a perspective that has been developed in the fields of social psychology and sociology. While there is no one definitive explanation of this paradigm, the following definitions help to illustrate symbolic interaction:

The Online Dictionary of the Social Sciences, Athabasca University, Canada, (<http://bitbucket.icaap.org/dict.pl>) defines symbolic interaction as a sociological perspective that stresses the way societies are created through the interactions of individuals. Unlike both the consensus (structural functionalist) and conflict perspectives, it does not stress the idea of a social system possessing structure and regularity, but focuses on the way that individuals, through their interpretations of social situations and behavioural negotiation with others, give meaning to social interaction. George Herbert Mead (1863-1931), a founder of symbolic interactionism, saw interaction as creating and recreating the patterns and structures that bring society to life, but more recently there has been a tendency to argue that society has no objective reality aside from individual interaction. This latter view has been criticized for ignoring the role of culture and social structure in giving shape, direction and meaning to social interaction.

A Brief Explanation of the Paradigm

Herbert Blumer (1969) first coined the phrase "Symbolic Interactionism" to define the theoretical perspective that has grown to be one of the most significant sociological perspectives. Symbolic Interactionists focus on the subjective experience of an individual as the basis for understanding and studying society. When interacting socially, people constantly adjust their behaviour to the actions of others. We represent various actions and actors symbolically, creating meaning, which allows us to interpret these actions and adjust our own behaviour accordingly. Underlying this micro approach is the belief that we, as individuals, do not simply drift through life as passive objects of socialization. Instead, we actively engage in constructing our social world, thus creating our own social reality.

Blumer (1969) furthered the development of Symbolic Interactionism by theorizing that there was more to human behaviour than influences on it by outside forces or uncontrollable psychological factors. He held that these theories ignored the importance of meaning and the social construction of reality (Ritzer, 1996).

Blumer (1969) identified three core principles of Symbolic Interactionism:

- 1) Humans act towards things on the basis of meanings individuals have for them.
- 2) Meaning is created through interaction between people - more specifically, the meaning for any one thing comes from the ways other people act toward the person, with regard to the thing.
- 3) Meanings are modified through an interpretive process. In this interpretive process, an actor first indicates to herself the things she is acting towards that have meaning for her. Next, she must distinguish and manage the various different meanings the thing could have in order to create the actual meaning of that thing for her.

Blumer's (1969) Symbolic Interactionism is grounded in the following "root images" which make up and explain human action:

1) Nature of human society or human group life: Humans are constantly engaging in action, whether individually, collectively, or as representatives of other individuals or groups. Blumer (1969) believed that this must be the starting point for any theory about society.

2) Nature of social interaction: There are two types of social interaction. Non-symbolic interaction occurs when a person responds directly to another's actions without having to interpret the action, like a reflex. This interaction does not involve thinking. Symbolic interaction, on the other hand, does involve thinking, in that the individual must interpret and create meaning for the actions or gestures of others and respond based on those interpretations.

Social interaction is not just a medium through which the determinants of behaviour pass to produce the behaviour (Blumer, 1969, p. 7). Instead, the actions humans engage in are responses to the actions of other humans. Human society is based on social interaction, which occurs predominantly at the symbolic level.

3) Nature of objects: The world is made up of objects (physical and social, such as people, and abstract such as ideas or principles) which have no fixed status except as their meaning is sustained through indications and definitions that people make of the objects (Blumer, 1969, p. 12). An object's meaning for a person arises out of the way others, with whom the person is symbolically interacting, act towards and define the object. The lives and actions of people change along with changes in their world of objects.

4) The human being as an acting organism: We each become objects of our own actions, meaning that we each come to possess a Self that allows us to communicate and interact with ourselves. This is known as making indications to the Self. We indicate to ourselves the meaning of the actions we intend to take and we role-take in order to understand the indications that other people make about us. In other words, when we role-take, we are able to understand how our own actions will be perceived and interpreted by others. While one's Self is a determinant of the course of action one will take, it is also shaped by one's internalization of the perceptions of others. Humans come to truly interpret their

social world by making indications to the self, making them acting organisms, as opposed to responding organisms, or organisms who simply automatically respond to environmental cues. Blumer (1969) stated that human beings interpret or 'define' each other's actions instead of merely reacting to each other's actions.

5) Nature of human action: Through self-indication, one can interpret their social world and construct one's own actions. We cannot understand one person's actions until we can "get inside of the defining process of the actor" (Blumer, 1969, p. 16). It is through the human process of aligning actions, when individuals join their line of action with others, and make indications to each other, that group or joint action emerges.

6) Interlinkage of action: Human action begins at the individual's interpretive process and the interlinkages of human action are the building blocks of human group life. It is this conceptualization of collective action that allows Symbolic Interactionism to account for macro-level phenomena. Group and joint action gives rise to the collective action evident in our society. In collective action, we, as individuals, must fit our actions to each other, and it is through this process that we learn what actions are expected of us, which further pushes the interpretative process.

Blumer (1969) disagreed with sociological theories that believe large-scale, external forces determine individual action. As Blumer (1969) explained, "Structural features, such as 'culture,' 'social systems,' 'social stratification,' or 'social roles,' set conditions for [human] action but do not determine [human] action" (Blumer 1969, p. 88). People, then, do not act towards culture itself, or social stratification itself. They instead act towards situations that are shaped by structural features like culture and social stratification. Social action, for a symbolic interactionist, is not an expression of social structure or organization. It is a framework in which humans develop their actions

The following discusses why the central question of this research is best explored through adopting the perspective of symbolic interactionism. To recapitulate, the central question of the present study is: ***How do principals in neighbourhood secondary schools in***

Singapore manage the Normal Technical students, who form the lowest stream? The specific questions that help address the above question are:

1. What are principals' perceptions of streaming as a way of organising students in secondary schools?
2. What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?, and
3. Do the principals' perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes?

The research questions are in line with Blumer's (1969) three principles in that they assume principals decide what is meaningful or valuable to them and the school, and prioritise their problems or make responses to them accordingly. Principals allow their perceptions and their feelings to guide their actions in managing the students. Research question 3 is based on the first and third principles.

Secondly, regarding the principle that social interaction is the source from which meanings are derived, the present researcher believes that the actions of the principals are shaped by their perceptions, and reinforced by the actions of, the students themselves. Research questions 2 and 3 are related specifically to this principle.

The third principle implies that the actor communicates or interacts with himself/herself and goes through an interpretive process of handling, suspending, regrouping and transforming meaning. This means that interpretation is a formative and constantly changing process. The present study is based on the assumption that principals adjust the meanings and importance they attach to problems from time to time. Management of students or problems can be seen as a reflective process in which meanings and goals are regrouped, reinforced or discarded. It is assumed that in the process of managing, principals' perceptions may change. Research question 3 is associated more with the third principle.

THE GROUNDED THEORY APPROACH

The research approach adopted in this study is grounded theory, which is congruent with the principles underlying the symbolic interactionist paradigm described above. Grounded theory is a research approach that offers a comprehensive and systematic framework for inductively building theory. A grounded theory is one that is discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to a particular phenomenon (Strauss & Corbin, 1990). The careful and precise application of this method will ensure that the theory to emerge from this study will meet the criteria of good science, generalisability, reproducibility, precision, rigour and verification (Corbin & Strauss, 1990).

If a satisfactory theory already exists on a particular topic, there is little point in mounting a study to generate a new theory about that topic (Punch, 1998). The rationale for doing a grounded theory study is that there does not seem to be a satisfactory theory on the topic and that we do not understand enough about it to begin theorising. In that case, we will want to approach the data as open-mindedly as possible, guided by the research questions. There is currently no theory in this area of study.

A number of the basic features of grounded theory make it an appropriate method for this research. These include:

- 1) Grounded theory methodology specifically includes the analysis of process. Within grounded theory methodology the term process is used to describe ‘the linking of sequences of action/interaction as they pertain to the management of, control over or response to, a phenomenon’ (Strauss & Corbin, 1990, p. 143).
- 2) Grounded theory methodology directly links macroscopic issues to the phenomenon under investigation. This mode of research requires that broader, contextual issues, that are shown to influence the phenomenon under study, be given appropriate recognition in the development of the theory. Rather than

focusing the investigation by disregarding these broader conditions, every effort will be made to acknowledge and account for them.

- 3) Grounded theory makes its greatest contribution in areas in which little research has been done. As stated previously, no known published research has been conducted specifically into aspects of the management of Normal Technical students in neighbourhood secondary schools in Singapore. This means that many of the variables relevant to the concepts of this phenomenon are yet to be identified. Grounded theory is an appropriate methodology for this study, as it aims to generate theory that can be used as a precursor for further investigation of this phenomenon and related issues. Other qualitative research techniques, quantitative methods or a combination of both can then be used in subsequent studies to test, verify or extend the qualitative hypotheses that emerge from this initial research.

Grounded theory methodology would be appropriate in the exploration of labelling theory as it lies in the realm of the interpretive paradigm. Moreover, labelling theory is strongly linked to symbolic interactionism where people make sense of their experiences through interaction using symbols. Social psychological factors are perhaps the most relevant factors in human behaviour. For this research, grounded theory offers a systematic method by which to study the richness and diversity of human experience and to generate relevant, plausible theory which can be used to understand the contextual reality of social behaviour. With such understanding, educators can assess what is happening in the groups studied and plan interventions to improve the quality of education.

The stages in the grounded theory method which this study adopts consist of the process of data collection, coding and memoing. Data collection in this case involves interviews of principals. This is coupled with document analysis. However, the relationship between these three stages is not a linear one. Rather, a triadic relationship is envisaged, in which the researcher moves back and forth between collecting data, coding and memoing

(Strauss, 1987). In other words, data gathering and data analysis are tightly interwoven, with data analysis guiding future data collection.

The steps involved in coding in the present study are subdivided into open, axial and selective coding. Open coding is the process of breaking down, examining, comparing, conceptualising and categorising data. It aims at the development of categories or concepts. Axial coding seeks to re-build data by putting data back together in new ways and by making connections between categories. Selective coding is the process of selecting the core category, systematically relating it to other categories and verifying their relationships (Strauss & Corbin, 1990).

Throughout the research, the constant comparative method of analysis was employed. This refers to two analytic procedures basic to the coding process, that is, of making comparisons and of asking questions so as to give precision and specificity to the concepts. Comparisons were made between principals of different schools with regard to their perceptions and management actions. If differences were detected, questions of how and why were asked to facilitate the analysis. In fact, comparison was done at the end of each interview so as to shape the interview with the next principal. This sequence of “interview followed by analysis” enabled the emergent interpretations to be cross-checked constantly.

Another concept frequently associated with grounded theory is theoretical sensitivity, that is, an awareness of the subtleties of the meanings of the data and their ability to enhance theory development. In this research, theoretical sensitivity was heightened through the review of literature, personal experience as well as the rigour of the analytic process. The literature helped to sensitise the researcher to possible kinds of concepts and categories. Through the researcher’s interactions with the data, making comparisons and developing frameworks about concepts and their relationships, insights and understanding about the phenomenon were gained.

STUDY CRITERIA AND SAMPLING METHODS

Study Criteria – schools

According to the latest figures (MOE, 2007b) there are 161 secondary schools in Singapore. Of these, 128 have the three streams, Express, Normal Academic (NA) and the Normal Technical (NT). The intakes of some of these schools also vary in terms of their Primary School Leaving Examination (PSLE) scores. Autonomous schools which have ‘cut-off’ scores of 240 and Independent Schools which have intakes of above 250 were not included. Only neighbourhood secondary schools which have low intake scores of less than 220 for the Express intake in Secondary One were considered for this study. The ‘cut-off’ score for schools A, B, G, H, S, T, and Y was 188; school K was 195; school Q was 207 and that for school C was 218 (MOE, 2005). These schools were generally considered academically weak. These schools therefore will also have the weakest NT student intake. The unit of analysis for the cases was therefore the school and by association, the school principal.

The participants consisted of principals of neighbourhood secondary schools. Initially the schools to be selected were chosen on a convenience sampling basis. This was then followed by snowball sampling in choosing other schools with the aim being to achieve maximum variation sampling, as further explained below.

Sampling Methods

In general, different kinds of sampling are associated with the three stages of coding. In the present research, purposive sampling was employed in the open coding stage to ensure that the principals of schools with different school cultures and characteristics were included. Openness rather than specificity guided the sampling. After purposively selecting three principals for the initial pilot study – from schools with three streams and at least five Normal Technical classes - the three principals were asked to recommend other principals whom they knew to be rich in information and who would be likely to

offer different perspectives of the Normal Technical students. In other words, snowball or chain sampling was used after the initial three interviews in order to maximise differences at the dimensional level. Since the researcher's experience over the past 25 years as a teacher and then a principal has shown that there is diversity of quality of student intake as well as school performance results, a maximum variation sample of schools and their principals, was sought. It was deemed that the number of respondents required to provide the diverse viewpoints was about 12, and this was considered a sufficiently large number for the researcher to manage. Altogether, 10 school/principal cases were selected for interview. The principals' years of experience ranged between 3 years to more than 10 years. Three were males and seven were females and their ages range from 45 to 59 years. Moreover, their principalship in their current school ranged from 1 year to 10 years (Appendix A).

According to Strauss and Corbin (1990), with the grounded theory method of inquiry, the researcher samples events and incidents that are indicative of theoretically relevant concepts. The investigation does not aim to capture a representative sample of the population. Rather, sampling is on the basis of concepts that have proven theoretically relevant to the evolving theory and that illuminate the phenomenon under study. It is thus called "theoretical sampling". Strauss and Corbin (1990, p. 178) believe that "unlike the sampling done in quantitative investigations, theoretical sampling cannot be planned before embarking on a grounded theory study. The specific sampling decisions evolve during the research process itself". Thus during the progression of the study, theoretical sampling was adopted because sampling and analysis go in tandem.

In selective coding, discriminate sampling is employed. The aim here is to integrate categories discovered along the dimensional level to form a theory and to supply more data to categories that require further development. Here the researcher chooses subjects that will maximise opportunities for verifying the story line. After the first few interviews, it became clear that the participants' management practices could be categorised under three management approaches. The researcher, therefore, subsequently focused on drawing the unique characteristics of these out from the participants. For the

last few participants, sampling was done purposively bearing in mind the 'reputed' inclinations of the participants

DATA COLLECTION

Instruments and Procedures

The methods used for data collection comprised of one face-to-face interview with principals lasting between an hour and an hour and a half. My role as a researcher was that of a "human instrument" (Lincoln & Guba, 1985; Creswell, 1994) meaning that I functioned as the main instrument in carrying out data collection of the phenomenon (principals' management of Normal Technical students) being studied.

Stage 1 - The Pilot Study

Questions for the initial interview schedule/guide were formulated from the research literature as well as from personal experiences of the researcher in his interactions with the Normal Technical students (students in the lowest stream). One set of interview schedule/guide for principals (Appendix B) was piloted with three principals. The following are examples of the interview questions:

Pilot interview questions for principals (see Appendix B for full schedule)

1. Is there a perception of inequality in the way your Normal Technical students see themselves being treated compared to students in the other streams? If so, how do you manage this perception in your school?
2. In practice do you allow your top NT student to sit for the 'O' level exams? Please explain.

At the completion of the pilot interviews, the interview schedule and survey questionnaire were further revised:

The improved questions for principals (see Appendix C for full schedule)

1. Do the Normal Technical students in your school feel that you treat them unequally compared to the other streams? If so, how do you manage this perception in your school?
2. Have any Normal Technical students been promoted to take the 'O' Levels as provided for in the MOE's publicly expressed movement of students up the educational ladder i.e. from 4NT to 5NA?

The pilot interviews were also intended to maximise opportunities for principals to air subtleties of their perception and management strategies in regard to the NT students. Furthermore, the pilot study was designed to refine the data gathering methods and to enhance the researcher's theoretical sensitivity towards the topic.

Data were gathered from the initial sample group of principals in a linear process as outlined below (also see Appendix D):

- Crafting of questions for the initial interview schedule/guide
- Piloting of questions in interview schedule/guide with three principals in stage 1
- Finalisation and construction of semi-structured interview questions to be used with principals in stage 2
- Semi-structured interviews with principals starting with convenience sampling and following through using snowball sampling, June 2004 to August 2007
- Semi-structured interviews with principals until theoretical saturation, June 2004 to August 2007

In grounded theory studies, data gathering and analysis are tightly interwoven processes and data analysis guides future data collection.

Stage 2: The Main Study

From the pilot I was able to sharpen the questions and clarify aspects of principals' management - from the principals' perspectives. From the responses to the pilot interviews with principals, certain themes, issues and areas such as *gaps in perceptions, movement across streams, allocation of resources, achievement versus ability and real opportunities* of the Normal Technical students, rather than solely the perception of streaming, were identified and these formed the basis for refining the questions for the interviews with the principals in the main study. Examples include the following:

The improved questions for principals (see Appendix C for full schedule)

1. Do the Normal Technical students in your school feel that you treat them unequally compared to the other streams? If so, how do you manage this perception in your school?
2. Have any Normal Technical students been promoted to take the 'O' Levels as provided for in the MOE's publicly expressed movement of students up the educational ladder i.e. from 4NT to 5NA?

This process heightened the researcher's 'theoretical sensitivity' towards the phenomenon. Theoretical sensitivity refers to the "attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't" (Strauss & Corbin, 1990, p. 42).

Purposive sampling methods were used to identify the principals for the study. In purposive sampling the goal is to select cases that are likely to be "information-rich" with respect to the purposes of the study (Patton, 2001). While the neighbourhood schools were 'typical' of their kind, selection of principals as participants was based on maximum variation sampling in order to develop a theory that is as all embracing as possible. That is, a theory which embodies a range of perceptions and management responses. In addition, snowball sampling of principals was employed, using semi-structured interviews. After the ninth and tenth interviews the data collected showed a consistent

picture of the different management approaches as practiced by the participants and thus the researcher concluded that data saturation had been reached.

In qualitative research, determining sample size is entirely a matter of judgment as there are no set rules. Patton (2001) suggests that selecting an appropriate sample size involves a trade-off between breadth and depth:

With the same fixed resources and limited time, a researcher could study a specific set of experiences for a larger number of people (seeking breadth) or a more open range of experiences for a smaller number of people (seeking depth). In-depth information from a smaller number of people can be very valuable, especially if the cases are information-rich. Less depth from a larger number of people can be especially helpful in exploring a phenomenon and trying to document diversity or understand variation. (p. 184)

A key factor in determining sample size is data saturation. When principals started repeating the views of earlier principals sampled and no new information was forthcoming, then it is an indication that the sample size is satisfactory. When the interview came to the seventh principal, signs of theoretical saturation were beginning to appear.

Interview

The interview method was used to gather evidence from principals that it was felt would lead to some general conclusions about their perceptions of streaming. Why interview? Interviews are used to gather data on participants' opinions, beliefs and feelings about the situation in their own words (Ary, Jacobs & Razavieh, 2002). The interview provides an avenue of inquiry although it may not always be completely sufficient. According to Seidman (1998, p. 5), "If the researcher is interested, however, in what it is like for students to be in the classroom, what their experience is, and what meaning they make out of that experience - if the interest is in what Schutz (1967) calls their 'subjective understanding' - then it seems to me that interviewing, in most cases, may be the best

avenue of inquiry". This applied to the principals as the researcher sought to understand the 'why' behind their management.

The semi-structured interview method was used extensively in this research. Semi-structured interviewing lies between the structured and the unstructured interview approaches. The term 'semi-structured' means that the interviewer sets up a general structure by deciding in advance what ground is to be covered and the main questions to be asked. This leaves the detailed structure and sequence to be worked out during the interview and at the same time affords participants latitude in expressing their own viewpoints. The interviewee can answer at some length in his or her own words and the interviewer responds using prompts, probes and follow-up questions to get the interviewee to clarify or expand on the answers (Drever, 1995). Therefore, the semi-structured interview consists of a carefully worded interview schedule and involves asking a series of structured questions and then probing more deeply using open-form questions to obtain additional information. The schedule may contain spaces for the interviewer to record notes, or a tape recorder may be used. As much as possible, the interview is conducted more on the basis of a conversation than an interrogation.

According to Drever (1995) the semi-structured interview can yield a variety of kinds of information. Even with one interview it is possible to gather factual information about people's circumstances; collect statements of their preferences and opinions; and explore in some depth their experiences, motivations and reasoning. The semi-structured interview schedule tends to be the most favoured by educational researchers as it allows respondents to express themselves at length, but offers enough shape to prevent aimless rambling (Wragg, 1994). This interview approach has the advantage of providing reasonably standard data across respondents, but of greater depth than can be obtained from a structured interview (Gall, Gall & Borg, 2003). Although with semi-structured interviews one is confident of getting comparable data across subjects, one may lose the opportunity to understand how the subjects themselves structure the topic at hand (Bogdan & Biklen, 1998). Drever (1995) summarises semi-structured interviewing as follows:

- is a very flexible technique, suitable for getting information and opinions and exploring people's thinking and motivations
- yields rich information and guarantees good coverage
- takes time to do and analyse and so requires realistic planning
- cannot cover large numbers
- requires a degree of skill
- is useful in mini-surveys and case studies
- can be used along with other methods (p. 8)

Interview schedules were used for the semi-structured interviews. According to Patton (1990), the interview schedule has many merits, such as providing topics within which the researcher can probe that will clarify a particular subject and flexibility allowing for individual perspectives to surface, while ensuring the best use of the limited time given.

All the interviews were audio taped in full allowing the researcher opportunity to probe for clarification in uncertain areas in follow-up interviews which were done through emails or telephone. Also, if the interviews are recorded in full, they can be used as direct quotations later on in the thesis and distortions in meanings by the interviewer are reduced to a minimum.

The Interview Schedule

The precise timing of interviews was dependent on events in the individual schools. The first round of interviews was structured to gather data about the widest possible range of issues associated with the phenomenon under study. The research questions guided the interview questions and data gathering process. The structure and content of subsequent interviews were determined after the data analysis process had commenced. The second round of interviews was used to: (a) gather new data about known concepts and categories that have been developed about the phenomenon, (b) gather new data about the phenomenon, and (c) involve the principals in a process of testing and verifying data and the emerging theory. It was anticipated that data from each of the interviews would highlight categories that would provide a degree of focus. The following are sample questions from Appendix C:

A Principals' Perceptions of NT Students

1. In your opinion, what are the characteristics of the NT students and students in the other streams in terms of academic ability, non-academic ability, motivation, behaviour, and other aspects?

E Movement of pupils across streams

10. Once allocated to the stream, the pupils often remain there and movement although possible, in practice it occurs rather infrequently. Please comment.

H Behavioural, social and motivational factors

21. Do most of your disciplinary cases come from the NT classes? Please give examples?

Immediately preceding the first interview, the principals were asked to fill out a brief factual questionnaire on both their personal (Appendix E) and the school's backgrounds (Appendix F), such as the number of years as principal and the student quality.

Follow-up email and telephone interviews with the principals were used to supplement data collection, especially in cases where lack of clarity, ambiguity or contradictions in meanings or missing information was apparent. These interviews had the benefits of relative cost-effectiveness, immediacy and the reduction of threat to the respondent on sensitive topics by removing the physical presence of the researcher (Borg & Gall, 1983).

To add to the credibility of the study, member checks were conducted by emailing the transcripts of the interviews to the respondents as soon as they were ready. This was followed up by email interviews to check if amendments were needed. According to Lincoln and Guba (1985), a member check is the process of asking the respondents to test and react to the data, analytic categories, interpretations and conclusions of the findings arrived at the interviews. It can take both a formal or informal form, but the essential point is to "play back" the main contents to the interviewees and provide them with an opportunity for feedback.

Document Analysis

The second data collection method used was school document analysis. The documents collected included class subject combinations for the upper secondary classes and records of enrichment programmes planned for the students. It was hoped that the data provided by these documents would serve to validate and expand the verbal data provided by the principals themselves. These materials were collected as much as possible in the interview, so that early checks on the consistency and credibility of the findings which emerged in the interview could be made (Appendices I and J). The documents were analysed to verify and confirm the information such as subject offerings and enrichment programmes offered to the NT students as well as to the other streams. They were also coded (Figure 6 & 7).

ANALYSIS AND RECORDING OF THE DATA

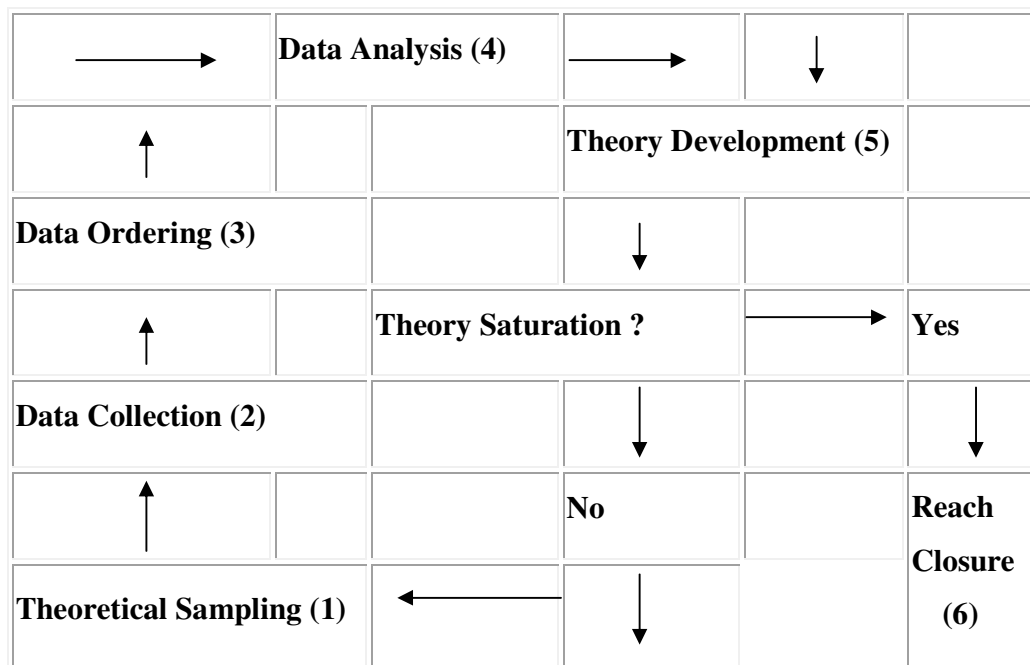
Within the meta-theoretical of symbolic interaction, Blumer's (1969) three principles already outlined are an attempt to unravel strands in the symbolic interactionist's central notion of the interdependency between the individual and society; one cannot be understood without an understanding of the other. This is a view of the individual as somebody who makes sense of their situations through social interaction, as a consequence of which, they attempt to 'manage' their environment. The task of the researcher using this approach is to uncover the "patterns of action and interaction" between and among the "actors" (Strauss & Corbin, 1998) in relation to the particular phenomenon which is the focus of the study. A variety of terms have been coined to characterise the totality of these action-interaction strategies. These include 'handle', 'manage', 'cope with', and 'deal with'. Of these 'manage' was considered to be the most appropriate term to use in this study.

The Use of 'Grounded Theory' Methods of Data Analysis

This study utilised ‘grounded theory’ methods of data analysis as outlined in the work of Strauss and Corbin (1990) to develop ‘substantive theory’ regarding how principals ‘manage’ the Normal Technical students in their schools. These methods are consistent with symbolic interaction. Their use involves “an intricate process of reducing raw data into concepts” (Corbin, 1986, p. 102) which are then developed into categories and related sub-categories as the basis of a theory. This, in turn, involves the use of explicit coding and analytic procedures which are designed to equip the researcher to generate a theory that is integrated, consistent, close to the data and plausible (Glaser & Strauss, 1967, p. 105).

Data analysis is central to grounded theory building. Data collection, data ordering, and data analysis are *interrelated* as depicted in Figure 4 (the attached numbers indicate the activity's analytic sequence), as used by Pandit (1996).

Figure 4
**The Interrelated Processes of Data Collection,
Data Ordering, and Data Analysis to Build Grounded Theory**



Source. Figure 1 on p.7 in: Pandit, N. R. (1996). The Creation of Theory: A Recent Application of the Grounded Theory Method. *The Qualitative Report*. 2(4). (<http://www.nova.edu/ssss/QR/QR2-4/pandit.html>)

Within this general framework, data analysis for each case involved generating concepts through the process of *coding* which,

... represents the operations by which data are broken down, conceptualised, and put back together in new ways. It is the central process by which theories are built from data.

(Strauss & Corbin, 1990, p. 57)

The analysis of data in this study involved three major types of coding – each of which is typical of grounded theory research:

- open coding,
- axial coding, and
- selective coding (Glaser, 1992; Strauss & Corbin, 1990)

While each of these is a distinct analytic procedure, it is often the case that the researcher alternates between these three modes of analysis, a practice which was followed within the present study. At the same time, from the early days of the data gathering and analysis phase of this study, cognisance was taken of the fact that, despite the explicit nature of these coding procedures, they are not mechanical or automatic. Accordingly, the coding procedures were applied flexibly and in accordance with the changing circumstances throughout the three year period of data gathering, analysis and theory formulation. This procedure then led to producing the core category, which is essential in formulating the theory (Punch, 1998, pp. 213-215). The following section illustrates how the coding was executed in this study.

Open Coding

Open coding is the process of “breaking down, examining, comparing, conceptualising and categorising data” (Strauss & Corbin, 1990, p. 61). It is the process whereby concepts, drawn from the data, are identified and developed in terms of their properties and dimensions. During open coding, the data are broken down or “fractured” (Strauss, 1987, p. 55; Strauss & Corbin, 1990, p. 97) into concepts “to be closely examined and

compared for similarities and differences, while constantly asking of the data the following question: What category of property of a category does this incident indicate?” (Glaser, 1992, p. 39) Through the process of open coding, one’s own and others’ assumptions about a phenomenon are analysed, questioned or explored, which in turn, leads to new discoveries (Strauss & Corbin, 1990, p. 62).

In this study, open coding continued throughout the school year. Each of the transcripts from all of the principal interviews was coded on a line-by-line basis. Code words were written in the right hand margins of the interview transcript sheets as illustrated in Figure 5, taken from the first transcribed interview from the first round of semi-structured interviews:

Figure 5

Open Coding of Interview Transcript (School a – int 1 – 21/5/2004) Extract

Interview Transcript	Coding
<p>I: How are pupils with special needs in the NT classes looked after?</p> <p>P: So far we have the facilities to manage emotions. We have fulltime counsellors from MOE and the professional side. This is because we notice most of our students come from disadvantaged homes so they come in angry so we have to manage that part for them and at the same time we have to make our curriculum exciting for them so that they can experience success almost every week. In fact in our curriculum, one week one day is an outing day – the outing may be within the school but not in the classroom, could be a picnic but they have to plan it. Could be a day to ITE that how we manage them. With regards to particular needs like ADHD we refer them to whoever have been handling them and liaise with them. So we don't have much we can help in this area.</p> <p>I: Factors affecting the size and number of pupil groups, what would be your preference for the NT class sizes?</p> <p>P: The usual will be the smaller the better. The average size is 40. Very frankly there is no ideal size because it is very much dependent on the capability of the teacher. So size is something I do not talk about with the teacher at this stage because it is something we have to live with first. So within the structure that is given we have then to tackle other areas like the curriculum, how we deliver, how we teach the learning experience such that it becomes meaningful and gainful for the students. The other thing is to equip our teachers, and also composition within the staff, about the child and the children, and us with the children.</p>	<p>Resources employed - full-time counsellors to assist NT students with emotional needs Students' background - most NT students come from disadvantaged homes Characteristics of NT students - NT students are angry Curriculum modification – make curriculum exciting, customised curriculum with a day outing per week Experience success - enable students to experience success Students with emotional disorders are handled by trained professionals</p> <p>Class size - smaller class size preferred but not a major consideration; teacher has to live with it</p> <p>Teaching and learning - curriculum and lesson delivery</p> <p>Teacher competency - equipping teachers Staff composition</p>

Documents provided by the principals were also the subject of open coding procedures. Figures 6 and 7 provide examples of open coding of school documents made available during the research.

Figure 6

Open Coding of School Document - Enrichment Programmes of School C

ENRICHMENT PROGRAMMES

YEAR	NAME OF PROGRAMME	LEVEL	STREAM	CODING
2004	HERITAGE TOUR-LABRADOR PARK AND JURONG HILL	1	EXPRESS	Number of Prog
2004	HERITAGE-SARIMBUN BEACH, KRANJI WAR MEMORAIL	1	NT	
2004	SOCIAL STUDIES WORKSHOP	3	EXPRESS	
2004	LEARNING JOURNEY-URA, CHINA TOWN	2	NA-EXP	Subject area
2004	UNSW MATHS COMPETITON	2	EXPRESS	
2004	ORAL SKILLS ENRICHMENT	3	EXPRESS	Focus - acad vs non-acad
2004	EL: PRESENTATION SKILLS	1	NT	
2004	EL: PRESENTATION SKILLS	2	NT-EXP	Learning journeys
2004	MATHS : PROBLEM SOLVING	2	NA-EXP	
2004	VISIT TO OMNIMAX THEATRE	3	NT & NA	Levels
2004	PORT DISCOVERY TOUR	3	EXPRESS	
2004	DNA WORKSHOP	1	NA-EXP	Streams
2004	DNA WORKSHOP	2	EXPRESS	
				Objectives
2005	CIVIL DISTRICT TOUR	1	NT	
2005	EL : PRESEENTATION SKILLS	1	NT	Enrichment
2005	MATHS GEOMETRY WORKSHOP	1	EXPRESS	
2005	MATHS TRAIL	2	EXPRESS	Competition
2005	GEOGRAPHY WORKSHOP	2	NA-EXP	
2005	UNSW SCIENCE COMPETITION	2	EXPRESS	
2005	UNSW ENGLISH COMPETITION	2	EXPRESS	
2006	PORT TOUR	3	EXP	
2006	MATHS : NUMBER SEQUENCES	4 & 5		
2006	UNSW SCIENCE COMPETITION	2	EXP	
2006	HCL REPORTERS CAMP	3	EXP	
2006	AUSTRALIAN MATHS COMPETITION	2	EXP	
2006	ACRYLIC PAINTING WORKSHOP	4 & 5		
2006	TOUR OF PULAU SEMAKU	4	NA	
2006	TRIP TO TANJONG KARANG MALAYSIA	3	EXP	
2006	D & T PRODUCT DESIGN WORKSHOP	4	NT	
2006	CHINESE COMPOSITION COURSE	4 & 5		

Figure 7

Open Coding of School Document - Subject Combinations of School B

**2004 SEC 3 SUBJECT COMBINATION
Express Stream**

Option 1	Option 2	Option 3
1. EL	1. EL	1. EL
2. MT	2. MT	2. MT/ART
3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/HT
5. CHEMISTRY	5. PHY/CHEM	5. CHEM/BIO
6. PHYSICS	6. DT/FN	6. POA
7. A MATH	7. A MATH/POA	

Normal (Acad) Stream

Option 1	Option 2	Option 3
1. EL	1. EL	1. EL
2. MT/CPA	2. MT/CPA	2. MT/CPA
3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/GEO
5. PHY/CHEM	5. PHY/CHEM	5. PHY/CHEM
6. POA	6. DT/FN	6. DT/FN

Normal (Tech) Stream

Option 1	Option 2
1. EL	1. EL
2. MT/EOA	2. MT/EOA
3. MATH	3. MATH
4. CPA	4. CPA
5. SC	5. DT

CODING

Number of subjects

Category of subjects – academic or practical

Variety or range of subjects

Number of options

Throughout the coding process two basic analytic procedures were used: asking questions of the emerging categories of data (Strauss & Corbin, 1990) and making comparisons between the data, concepts and categories (Glaser, 1978). These two procedures help to give the concepts in grounded theory their precision and specificity (Strauss & Corbin, 1990). Code notes and memos were also prepared to represent the questions asked of the data and the comparisons and relationships between concepts and categories as they emerged from the data.

Code notes and theoretical memos were written throughout the data analysis and theory development phases of the study. Code notes are a specific type of memo prepared to describe and explain the conceptual labels which emerged from the data (Strauss & Corbin, 1990). An example of a code note written in the early stages of data analysis is presented below in Figure 8.

Figure 8
Sample of Code Note

Code name : Customising

Related codes : Providing

: Catering

: Guiding

: Differentiating

Code note : The principal in deciding the subject combinations and options for the NT students has to take into account various factors such as the abilities of the students, their inclinations and also their most likely future career orientation. As a result the principal has to customise all that he does to meet the needs of the students according to what he feels is the best.

Questions : What are the constraints the principals face?

How willing is the principal to stretch the students?

Are the needs of the students being met?

Extent : Within stream

What study are these data pertinent to?

Needs analysis

Potential realisation

Social Emotional Learning

Theoretical memos are developed to keep track of coding results and to stimulate further coding (Strauss, 1987). They contain the researcher's inductive and deductive thoughts about each created category, their properties, dimensions, relationships, variations, processes, and conditional matrix (Strauss, 1987). A sample of this is found in Figure 9.

Axial Coding

While the primary purpose of open coding is to identify categories of data and their related properties and dimensions, in axial coding the aim is to make connections between each of the identified categories and its sub-categories. According to Strauss and Corbin (1990), the focus in axial coding is on:

...specifying a category (phenomenon) in terms of the conditions that give rise to it; the context (its specific set of properties) in which it is embedded; the action/interactional strategies by which it is handled, managed, carried out; and the consequences of those strategies. (p. 97)

In this study of principals' 'management', axial coding was engaged by constantly moving between inductive and deductive analysis in an attempt to build up a "dense texture of relationships around the axis" (Strauss, 1987, p. 64) of categories which were generated from the data analysed through open coding. Hypotheses were made about the relationships between each category and its sub-categories. These were then tested by re-examining data previously gathered or by analysing new data about the phenomena represented by the categories and sub-categories. Throughout this process of axial coding, code notes and memos were prepared to represent the relationships between categories and their sub-categories. Figure 9 is an example of an axial coding memo which pertains to the category entitled 'conceptions', which emerged as a major process in the theory of 'selective engagement':

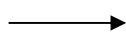
Figure 9

Sample of AXIAL CODING (THEORETICAL MEMO) – focuses on relationships between categories and their sub-categories

CATEGORY 2: CONCEPTIONS

Causal conditions

Experiences and Observations



Phenomenon

Conceptions

Properties of Experiences and Observations

Specific dimensions of Conceptions

<ul style="list-style-type: none"> • Primary school streaming • inclinations of students • students' home background • entry scores • academic performance • different expectations • students' characteristics 	<ul style="list-style-type: none"> • degree - deep • extent – wide • potential for consequences – high • boundaries – nation wide
--	---

Context for Conceptions

Under conditions of Conceptions the degree of perception of the NT students runs deep. This perception is due in large part to the streaming done after the PSLE and then posting to the schools. The extent of perception of the NT students is rather wide and pervasive. The result and the subsequent expectations that are held of these students lead to rather highly unfavourable outcomes such as negative labelling. The boundary is nation wide and the stigma lingers through the life of the student within the country.

Action/Interaction Strategies for Conceptions

Principals through their experiences and observations form certain conceptions of the NT students and they then respond to these conceptions by adjusting their responses to them based on their beliefs and expectations.

Intervening Conditions

Students' interests, number of NT classes, racial composition, students' behaviour, performance and potential affects how they are perceived and whether they cross stream after the first two years.

Consequences

The conceptions of the NT students result in a certain mental stereotyping which is also a result of symbolic interactionism. Consequences can be both negative e.g. labelling or even positive e.g. additional time and attention provided.

The coding model utilised in this research is recommended by Strauss and Corbin (1990) and is very much based on symbolic interaction, the social theory underlying the study.

Selective Coding

During the months of research, the task of integrating the categories generated and developed through open and axial coding, into a theory about how principals ‘manage’ the Normal Technical students, was on-going. This process of integrating categories, with particular reference to a central or “core category” (Strauss, 1987, p. 69) is known as “selective coding” (Glaser, 1978, p. 61). According to Strauss and Corbin (1990), selective coding is the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development.

The process of selective coding was commenced by developing a “general descriptive overview of the story” (Strauss and Corbin, 1990, p. 119) which represented the emerging theory.

In answering the three research questions, the axial coding generated three specific categories, which were: (1) Paradigms, (2) Conceptions, and (3) Management. Each of these is briefly explained below.

Paradigms is a category relating to the principals’ varied views on streaming. The personal values and belief systems of the principals with regards to the effects of labelling influence the way they see streaming and its consequential effects. It is linked to the resulting positions of acceptance, rejection or modification held by the principals.

Conceptions relates to the way the principals perceive the characteristics of NT students, their home background, their inclinations and aptitudes. This also refers to how principals perceive the students’ academic, and non-academic abilities and potentials, their

motivation as to being forthcoming, their behavioural tendencies and the NT students' future intended career paths.

Management refers to aspects of principal-student relationships which encompass a multitude of processes, such as assessing their interests, behaviour, potential and capabilities, and then deciding on actions to take to address their needs, development and progression within the school. This category shows how principals 'selectively engage' their NT students through their day-to-day interactions.

In this study, the main story is about:

...how principals in neighbourhood secondary schools, with the three streams of students, manage the students in the lowest streams when placed in such schools. In general such students impact the way the principal manages them in terms of their in-school life. In the areas of allocation of students to classes, movement of students across streams, allocation of resources, managing students' behaviour and motivation, they "selectively engage" the NT students within their school.

While all principals initially focus on aspects of their school organisation and curriculum as instructional leaders, they inevitably differentiate the way they manage this group of students. Chalmers and O'Donoghue (2002, p. 42) identified three types of teachers when referring to their handling of students with disability: the 'technician', the 'strategist' and the 'improviser'. Principals' management of streamed students can be compared to the way these teachers handle their disabled students although there are some differences – the 'realist/pragmatist', the 'innovator/improviser', and the 'nurturer'.

This 'story' was used as the basis for developing the fully integrated theory about how principals 'manage' their Normal Technical students in neighbourhood secondary schools in Singapore.

Throughout the process of selective coding theoretical coding notes of ever-increasing theoretical abstraction were prepared. The aim was to ensure that the integrity of the theoretical framework would withstand close scrutiny and at the same time provide a high level of conceptual density and conceptual specificity. An example of a theoretical coding note written at the selective coding level is provided in Figure 10:

Figure 10
Sample of Selective Coding Theoretical Memo

Processes and sub-processes of the category: “Paradigms”

Selective Engagement is a complex theory which is constructed of three distinct categories and three typologies. This memo will only elaborate on the distinctive categories which, in essence, explain the core category in three parts.

Paradigms is the first category in which participants’ prior mental models of streaming influence the way they see streaming. Principals come from a very divergent background and their experiences of the education system when they themselves were students are very different from their experiences of the present education system that has streaming as a major government policy. Their own beliefs and values of what the education system should provide for the child will colour their thoughts and viewpoints of streaming. So even though streaming is a mandatory policy the paradigms that these principals have developed will inevitably influence the way they carry out this policy – through acceptance, rejection or modification.

Such theoretical memos were developed throughout the study to capture the “frontier of the analyst’s thinking” (Glaser, 1978, p. 83) in relation to the data, concepts, codes and categories. In this way, a substantive theory about the central research question was arrived at. According to Glasser and Strauss (1967), substantive theory is:

...theory developed for a substantive, or empirical, area of sociological inquiry, such as patient care, race relations, professional education, delinquency or research organisations. (p. 32)

This contrasts with formal theory developed for a conceptual area of inquiry such as stigma, socialisation or social mobility (Woods, 1992, p.389). Substantive theory, of course, can lead to the development of formal theory. According to Woods (1992), by making comparisons between hypotheses developed from a substantive area of study and the analytic concepts developed in other fields, it is possible to initiate formal theory which, in turn, will have greater generalisability.

TRUSTWORTHINESS OF THE GROUNDED THEORY OF ‘SELECTIVE ENGAGEMENT’

The term “trustworthiness” is used to describe the qualitative researcher’s equivalence to the quantitative researcher’s concern for validity and reliability. Given that this is an interpretivist study in the symbolic interaction tradition, it was deemed appropriate to use the criteria of trustworthiness, rather than use the more positivist criteria of validity and reliability. Four categories of techniques were used to ensure trustworthiness and are most clearly articulated by Lincoln and Guba (1985). They are checks for *credibility*, *transferability*, *dependability* and *confirmability*. They are concerned with determining the extent to which confidence can be placed in the methodology and outcomes of the study and the extent to which we believe what the researcher has reported (Maykut & Morehouse, 1994). This thesis has tried to adhere diligently to techniques of trustworthiness. However, the researcher does not claim that the finding is so foolproof that it becomes unchallengeable. As Lincoln and Guba (1985) says: “... naturalistic

criteria of trustworthiness are open-ended; they can never be satisfied to such an extent that the trustworthiness of the inquiry could be labelled as unassailable” (p. 329).

The integrity of qualitative research depends on attending to the issue of validity. Validity in qualitative research concerns the accuracy or truthfulness of the findings (Ary, Jacobs & Razavieh, 2002). **Credibility** is the term most frequently used by qualitative researchers to refer to this characteristic. Credibility in qualitative research concerns the truthfulness of the inquiry’s findings. Credibility or truth value involves how well the researcher has established confidence in the findings based on the research design, participants and context. The researcher has an obligation to represent the realities of the research participants as accurately as possible and must provide assurances in the report that this obligation was met (Ary, Jacobs & Razavieh, 2002).

Hammersley (1992, p. 69) noted that “an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain, or theorise.” Krefting (1991, p. 215) suggests that a qualitative study is considered credible when it “presents such accurate descriptions or interpretations of human experience that people who also share that experience would immediately recognize the description.” The term credibility in qualitative research is analogous to internal validity in quantitative research.

The credibility of this study was addressed with the prolonged engagement with the participants through interviews and literature study which lasted approximately 36 months. The three methods of data collection also serve as a form of triangulation. The issue of credibility is connected with member checking. This process involves showing the interview transcripts to the respective participants for their verification. The participants were also involved in critiquing the conceptual relationships and theoretical propositions as they emerged during the process of data analysis.

Transferability is the degree to which the findings of a qualitative study can be applied or generalized to other contexts or to other groups. In quantitative research, the term

external validity is used to refer to the generalisability of the findings. The problem of generalisation in qualitative research is that its statements are often made for a certain context or specific cases and based on analyses of relations, conditions, and processes in them. This attachment to contexts often allows qualitative research a specific expressiveness. However, when attempts are made at generalising the findings, this context link has to be given up in order to find out whether the findings are valid independently of and outside specific contexts. In highlighting this dilemma, Lincoln and Guba (1985) discuss this problem under the heading of ‘the only generalisation is: there is no generalisation’.

Qualitative inquirers argue that it is possible to apply qualitative findings to other people, settings and times to the extent that they are similar to the people, settings and times in the original study. According to Ary, Jacobs and Razavieh (2002) transferability of a set of findings to another context depends on the similarity or “goodness of fit” between the context of the study and other contexts.

The transfer is made by the potential user of the findings, who must compare and decide on the similarity of the two contexts. This contrasts with quantitative research, where the original researcher makes generalizations. Although the qualitative researcher does not specify transferability, it is his or her responsibility to provide sufficiently rich, detailed, thick descriptions of the context so that potential users can make the necessary comparisons and judgments about similarity and hence transferability. (p. 454)

According to Lincoln and Guba (1985), transferability, in a strict sense, is impossible in qualitative inquiry. However, it is possible when operating in this paradigm to develop theories which incorporate working hypotheses together with descriptions of the time and context in which they were found to hold. If this incorporates appropriate “thick descriptions” (Geertz, 1973; Denzin, 1989), then judgements can be made about the possibility of transfer to other situations.

Strategies used in this study to enable judgements to be made about the transferability of the findings to other contexts include the detailed analysis of the interview transcripts; the

use of theoretical and purposive sampling, for example, neighbourhood secondary schools with Normal Technical stream have been chosen based on snowball sampling; and the logical and concise presentation of theoretical propositions accompanied by relevant examples from the data. The “thick descriptions” of context and participant principals’ perspectives should provide the necessary comparisons and judgements for the reader and user of this study.

Dependability rather than reliability is the term which qualitative researchers use. However, unlike quantitative research, where tight controls enhance replicability, qualitative studies expect variability, because the context of studies changes. Thus consistency is looked at as the extent to which variation can be tracked or explained. This is referred to as dependability (Ary, Jacobs & Razavieh, 2002). Dependability was addressed by way of keeping a systematic record that would enable a reader to trace every individual record from the inception to the development of the core category in this study. Lincoln and Guba (1985) liken this to an audit trail in an accounting system. The permanent ‘audit trail’ created in this study allows one, if required, to ‘walk readers through’ the work from beginning to end so that they can understand the path taken and the trustworthiness of the outcomes. The consistent use of an interview guide will also increase the comparability of the data (Flick, 1998).

In this study, dependability was addressed by way of keeping a systematic record that would enable a reader to trace every individual record from the inception to the development of the core category. In this study, dependability is thus heavily reliant on a set of records, which shows how concepts, categories and the typologies were systematically generated from the data. This is to satisfy the ‘auditors’ that the records are internally coherent so that the ‘bottom line’ may be accepted (Lincoln & Guba, 1985, p. 318). As in accounting, the records in this study are listed in a summary of records for ‘audit trail’, an example of which is located in Appendix L.

Confirmability (or neutrality) in qualitative research is the same as the quantitative researcher’s concept of objectivity. Neutrality is the extent to which the research is free

of bias in the procedures and the interpretation of results. According to Ary, Jacobs and Razavieh (2002), because it may be impossible to achieve the levels of objectivity that quantitative studies strive for, qualitative researchers are concerned with whether the data they collect and others investigating the same situation would confirm the conclusions they draw. Thus in qualitative studies the focus shifts from neutrality of the researcher to the confirmability of the data and interpretations. Lincoln and Guba's (1985, p. 300) preference for the definition of confirmability (objectivity) is for the removal of the emphasis from the investigator but places it on the data themselves. In other words it is the extent to which the data and interpretations of the study are grounded in events rather than the inquirer's personal constructions.

In this study, confirmability is addressed with multiple data sources (triangulation), such as interviews and documents. The 'audit trail' used in the dependability criterion was similarly used to establish how or whether the theory is grounded, such as tracing back where a 'piece' of data comes from. Finally, the source of the core category can be traced back to the various stages of data analysis in open coding, axial coding and selective coding. All the labels, code notes, theoretical notes and memos are systematically kept so that an audit can be carried out in a similar systematic order, if necessary (Lincoln & Guba, 1985, p. 323). In other words, the audit trail serves to cover both the dependability and confirmability criteria. Finally, authenticity was also secured by the use of audio recording and documents.

RESEARCHER'S STANDPOINT AND POSITIONING IN RESPECT OF THE RESEARCH

I am a secondary school principal of a neighbourhood secondary school that caters to all three streams of students. My own view on the research topic as a principal is that I do not fully support streaming. This was never revealed to the participants at any time. My experience of streaming and its negative effects as well as concerns for the Normal Technical students prompted me to undertake this study. Furthermore, I was interested in how my other colleague principals in neighbourhood secondary schools manage their NT

students. As a secondary school principal I thus have an 'insider view' of the streaming phenomenon that I am researching - the opportunities and experiences in interacting with and managing these students and understanding their abilities, potentials, behaviours and attitudes. While my position enables me to understand the issues intimately, it means there is a danger of my biases unduly influencing the study. Conscious of these personal biases, I have endeavoured to undertake data collection and analysis in as unbiased a way as possible, as recorded in the foregoing section on trustworthiness.

LIMITATIONS OF THE STUDY

In the course of this research, conscious efforts to overcome researcher bias were noted. Although as a researcher, I was aware that I, like other researchers, could not be totally objective, a number of methodology mechanisms were put in place deliberately to minimise possible research bias in order to secure as fair an interpretation of the data as possible. These trustworthiness mechanisms practiced included, for example, the following: triangulation, member checks, thickness of description and the keeping of clear research notes. Above all, conscious attempts at self-reflection to see if my own beliefs had interfered too much with my interpretations of the data were resorted to. I was satisfied that as a result of these efforts, a greater understanding of the self was actually achieved. The modification of the researcher's preconceived opinions was, in fact, also witnessed in the course of this study.

Certain methods were also used to minimise the effects brought on by the respondent bias. One method was to ensure strict anonymity and confidentiality to respondents, so that the threats of revealing highly personal opinions were lessened. Another method was for the interviewer to adopt a non-judgemental yet empathetic attitude throughout (Bogdan & Biklen, 1998). Of greatest importance, though, was to inform the respondents at the very outset, that the purpose of the investigation was an academic one, which was to find out how principals in neighbourhood secondary schools manage their Normal Technical students. The purpose was not to rate their beliefs or relative success in

managing them. It was not to pass judgements or pinpoint for principals the “best” or the “most ideal” strategies in managing these students.

Data collection is inevitably affected by the relationship between the researcher and the respondents. Because of the possible presence of bias from either party, the reliability of the research could suffer. The fact that most of the respondents are known to me may lead to respondent bias because of the following reasons: first, the desire of the respondents to make good impressions with regard to acceptable standards of behaviours; second, the reluctance of the respondents to reveal highly personal information that may be damaging to them; third, the respondents’ attitude of trust and respect for the interviewer; fourth, the contents, format of the questions and the procedure of the interview. Also, respondents may feel more embarrassed in revealing highly personal information to an insider.

Researcher bias may also be present because of assumed understanding of the topic under study and personal values held. This would in turn influence the collection, selection and interpretation of data. The tacit knowledge and beliefs which I hold may intrude into the course of the investigation and cause me to make subjective assumptions about the management of the students.

Conversely, the fact that I am a principal, a manager of these students, and attempting to study how other managers in the same situations manage their students, can have certain advantages as it means I can more fully understand what the other managers are saying, feeling and doing from both sides - as an insider and an outsider. I would consider myself an outsider in the sense that I am studying schools other than my own. The respondents found it easier to express their perception and feelings towards certain problems because of the common language shared as well as my understanding of the local educational scene and the challenges experienced in handling neighbourhood secondary school students. Being fellow principals, both researcher and respondents even found a common bond and empathy that more often facilitated rather than impeded the investigation.

However, despite some advantages, the problems discussed above were addressed in the investigation. Peshkin (1988) suggests that although it is natural for the researchers to “take sides”, they must also be attentive to the problem of subjectivity. One way is to recognise and note one’s subjectivity throughout the course of the investigation by consciously subjecting the research to standards of trustworthiness (Lincoln & Guba, 1985). Ideally the researcher should engage in continuous self-reflection of his or her own values and perspectives and be prepared to modify preconceived viewpoints as objective findings unfold in the course of the research.

Other limitations include the small sample size of 10 participants. The main forms of data collection were the use of semi-structured interviews and school documents. There are a number of methodological limitations owing to the small sample. A small number of participants were chosen because the purpose of this study was to build a theory for the group of principals interviewed. There was no intention of generalising the research across the schools in Singapore. However, in describing the principals’ contexts and personal details in depth, it may be possible for other principals in similar situations to draw parallels between themselves and the participants studied in this research investigation.

A further limitation is the collection of data via interviews and documents submitted by the participants. In the case of interviews, the data can only be taken at face value and is wholly dependent on what the participants have revealed. There was also time constraint as principals are an extremely busy lot. Interviews could only be conducted during the school holidays or, if at all possible, at the end of a very busy day in the evenings. Trying to arrange for an interview session was therefore a challenge. For these reasons, the number of participants was capped at 10 to keep the study manageable.

ETHICAL CONSIDERATIONS

Although the study is a private matter between the researcher and the participants, due respect was given to both the participants as well as the institutions concerned. Emails

were sent to them requesting a date and time for the interview and to inform them about the purpose of the study. On the day of the interview, the purpose of the interview was again explained. Consistent with the policy on research in schools, approval was obtained from the principals in each of the study schools for the interviews. Principals signed a consent form before participating in the study. The consent form contained a description of the purpose of the study, details of the gathering methods and an assurance that participants' confidentiality will be upheld to encourage them to speak freely. A sample of this is located in Appendix G.

The participants were assured they could stop the interview or withdraw their participation at any point. In accordance with the confidentiality assurance given to the participants, all participants were identified only by their code in this thesis and all data were treated in a way which protected the confidentiality and anonymity of the schools and principals involved in the study.

CONCLUSION

In summary, this chapter began with the philosophical perspectives of the research and the arguments for a qualitative approach in collecting data. In addition, sampling methods, data collection and analysis are discussed. Following the grounded theory method, theoretical sampling was used, while interviews constituted the main sources of data collection. In the data analysis section, explanation is given on open, axial and selective coding and memoing. These are to facilitate the breaking of data into categories, their arrangement into new categories, and the integration of the core category with the other categories. Finally, the trustworthiness of the research as reflected in the four criteria of credibility, transferability, dependability and confirmability has also been addressed. Through these processes of analysis the core category of Selective Engagement was developed. The selective code or core category and the story line are outlined in the next chapter.

CHAPTER FOUR

THE THEORY OF ‘SELECTIVE ENGAGEMENT’

INTRODUCTION

The purpose of this chapter is to provide an overview of the theory of ‘Selective Engagement’ that finally emerged from the data collection and analysis. It presents the story line and outlines the selective code and core category before the detailed analysis and findings are presented in Chapters Five and Six. The justification in inserting it at this point in the thesis is in sketching an overview of the theory that was constructed so that the reader can better understand and locate the detailed conceptual development and data analysis and interpretation that follow in subsequent chapters.

This study investigates principals’ perceptions of streaming, Normal Technical students and their expectations of them and how these principals manage these students in neighbourhood secondary schools in Singapore. This is a case study of ten secondary school principals from different types of neighbourhood secondary schools which comprise of two Government Aided Mission schools one of which is an all girls’ single-sex school. All the other schools are co-educational. All ten schools have all three streams (Normal Technical, Normal Academic and Express) and five levels of students (secondary one to five) (Appendix K).

Data collection is guided by the process of systematic coding which determines when theoretical saturation is reached (Punch, 1998, p. 167). During data analysis, many labels were hypothetically generated during the open coding stage. This led to the formation of concepts and categories at the axial coding stage (Strauss & Corbin, 1990, pp. 61-63), which in turn led to the grounded theory of selective engagement. During the research, the task of integrating the categories generated through open and axial coding, developed into a theory about how principals ‘manage’ their NT students in a neighbourhood secondary school. This process of integrating categories, with particular reference to a central or “core category” (Strauss, 1987, p. 69) is

known as “selective coding” (Glaser, 1978, p.61). Selective coding was commenced by developing a “general descriptive overview of the story” (Strauss & Corbin, 1990, p. 119) which represents the emerging theory. The detailed story, including the processes and categories of the theory of selective engagement will be presented in Chapters Five and Six of this thesis.

The theory will be presented in two main parts. They are: (1) The participants, and (2) The story line.

THE PARTICIPANTS

The key findings of this research were based on interviews conducted with ten principals of neighbourhood secondary schools. The principals varied in age as well as their years as a principal and were identified through snowball sampling. They were enthusiastic to share their views on streaming, the characteristics of the NT students and how they manage these students within their schools. A wide spectrum of viewpoints was held within the group of ten principals. The findings, from this small population of principals, are not meant to be generalizable to all school principals in neighbourhood secondary schools in Singapore. The findings in this study may only strictly apply to the principals of these ten schools. The schools ranged from single sex Government-Aided Mission school to co-educational neighbourhood secondary schools with varying student populations from 750 to more than 1,400 students.

Details of the participants are provided in Appendix A. As this section forms part of the overall investigation, all or part of the information provided earlier may be repeated as necessary to maintain the story’s continuity.

While the researcher has tried to satisfy the criterion of ‘trustworthiness’ by providing as much information as possible, the identity and interest of the participants also had to be protected. Therefore, the names of the principals and their schools are not divulged.

In order to ensure that the theory is solidly grounded in the data, much of the discussion about the participants in the story is related to how the principals selectively vary their engagement of their Normal Technical students. For example, by seeking the participants' perceptions of streaming and of the NT students and their expectations of these students in their own schools, the researcher was able to understand the circumstances that led to the way they manage these students. While they were all managing neighbourhood secondary schools, they have different views of streaming, have different expectations of the students and differed in the ways they managed them. However, all displayed traits that are captured by the theory of selective engagement.

As Appendix A shows, the participants were mainly in their forties. Each principal related their own original 'stories'. These 'stories' were carefully analysed by the researcher and then systematically presented. The characteristics of each participant were also carefully noted and used to help generate the typology. This is further supported by a detailed explanation of how the processes and categories are interlinked to form the theory of selective engagement.

THE STORY LINE UNDERPINNING THE THEORY OF SELECTIVE ENGAGEMENT

The story of selective engagement is made up of a typology consisting of three types of participants as follows: (1) "Realist/Pragmatist", (2) "Innovator/Improviser", and (3) "Nurturer" (Figure 15). The emergence of the typology and the distinct categories generated from the grounded data lead to the theory of selective engagement. All ten principals manifest some aspects of the four modes of management (Figure 13 & 14). However, certain aspects of management are found more prominently in some principals than in the others and it is this that gives rise to the typology. All three types are equalising and adapting to some extent, but not all are innovating and abiding with regard to their acceptance of streaming and the environment in which they operate.

The Realists/Pragmatists (B, Y A and Q) are practical in their approach. They know and are governed by the limits and constraints as set by the larger systemic context in which they operate. They are neither inventive nor bold, but by choice abide closely to the guidelines. This can be seen by their ready acceptance and practice in managing the NT students and the programmes within their schools. Principals C and H are pragmatists in the area of streaming/lateral movement. The strong Innovators/Improvisers (B, T, and H) on the other hand possess the courage to “bend” the rules to fit the context in which they operate so as to fully benefit the students in their schools. They are ready to come up with new ideas in their management of their NT students. Principal K is innovative only in the area of streaming/lateral movement. All ten principals exhibit some degree of nurturing qualities and they emphasise the pastoral. They have the best interest of their students at heart and they try their best to ensure that their NT students are not deprived in any way. As nurturers they explore ways to develop the NT students and provide them every opportunity.

The theory of selective engagement is in turn embellished by three distinct categories. The categories are: (1) “Paradigms”, (2) “Conceptions”, and (3) “Management”. Each category is in turn supported by its respective concepts and is presented as follows:

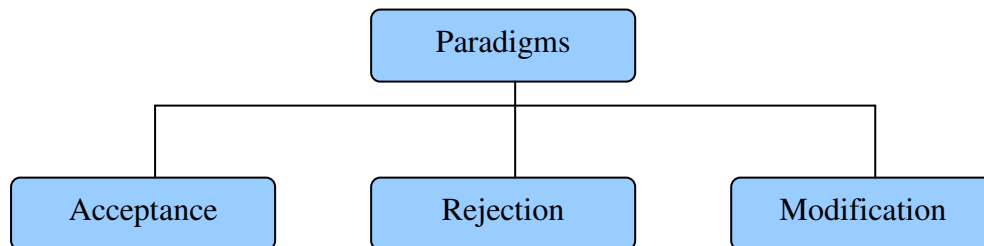
Category: Paradigms

The category Paradigms (Figure 11 and Table 2) discusses the perceptions of the principals with regard to their mental models of streaming as it is practised in Singapore. This category comprises of the concepts of *acceptance*, *rejection* and *modification*. What are the principals’ management actions when they subscribe to each of these models? The principals interviewed hold to three sets of paradigms, but to different degrees: acceptance, rejection and modification. Those accepting of streaming (7 participants) see streaming with all its inherent goodness and how it benefits not only the students but the society as well. Only one principal rejected streaming totally and this principal sees the negativity associated with streaming - such as labelling - leading to lower self-esteem, lower academic challenge, and deprivation of opportunities. On the other hand there are those who do not reject streaming outright but who would prefer some modification (2 participants) because

they do not totally agree with how it is being operated currently although they do agree that there are some benefits to streaming.

Figure 11

Paradigms Category

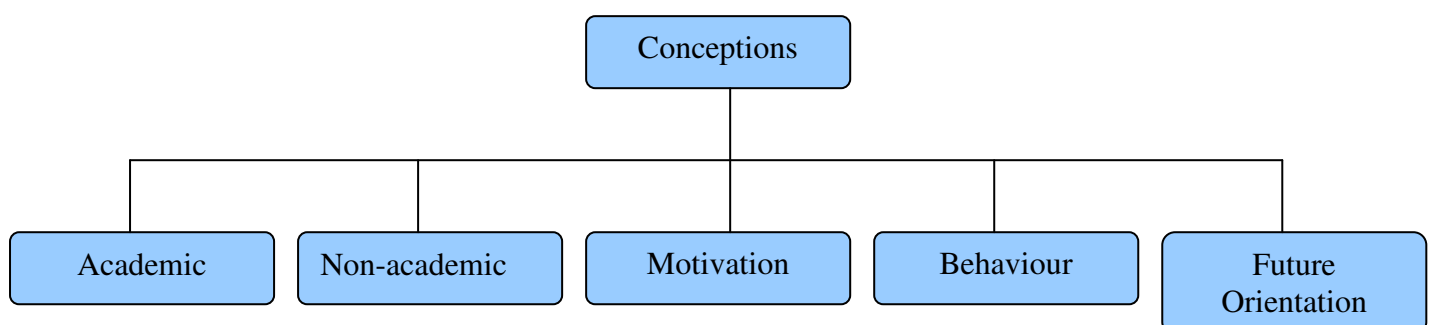


Category: Conceptions

The category Conceptions (Figure 12 and Table 2) comprises of five different areas relating to the principals' perceptions and expectations of the NT students. These are - the *academic*, *non-academic*, *motivation*, *behaviour* and *future orientation*. The academic area relates to the study and mastery of subject content; the non-academic deals with other areas outside academic content such as co-curricular and extra-curricular domains; motivation relates to the students' intrinsic impetus and desire; behaviour is linked to the attitudes and external manifestations of these; and finally future orientation is a projection of the anticipated future paths of these students as perceived by the principals.

Figure 12

Conceptions Category



Both categories - Paradigms and Conceptions - influence the way the principals manage their NT students. They are the results of the values and experiences that each principal has developed as they go through life and through education. Paradigms and Conceptions in turn impact on their management approaches towards their NT students.

Table 2
Paradigms and Conceptions of Principals

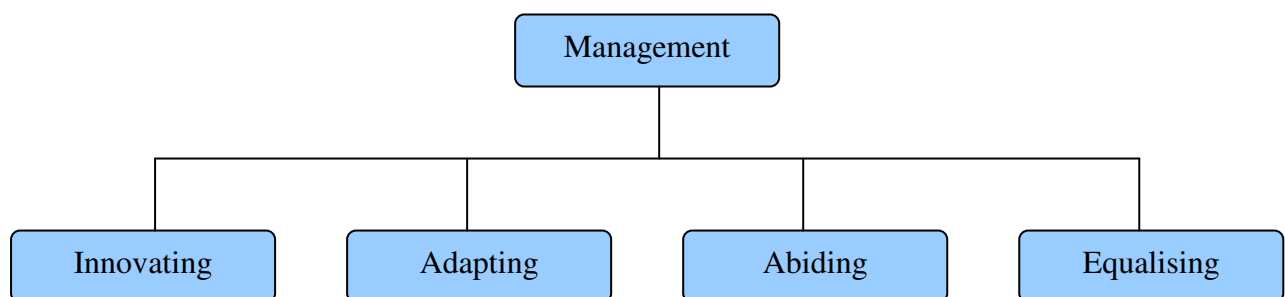
Categories	School Principals									
	B	Y	A	S	T	G	Q	K	C	H
1. Paradigms	For streaming	Against streaming	Prefers modification	For streaming	For streaming	For streaming	For streaming	Prefers modification	For streaming	For streaming
2. Conceptions										
- Perceptions										
• Academic	Slower	Slower	Slower	Slower	Slower	No diff	Slower	Slower	Slower	Slower
• Non-academic	No diff	No diff	No diff	No diff	No diff	No diff	No diff	No diff	No diff	No diff
• Motivation/Forthcoming	Less	More	No diff	More	Vary	No diff	More	More	Vary	More
• Behaviour/Discipline	No diff	Diff	Less	No diff	No diff	No diff	Diff	No diff	No diff	No diff
• Future Orientation	ITE	ITE	ITE	ITE	ITE	ITE	ITE	ITE	ITE	ITE
- Expectations	Lower	No diff	Lower	No diff	No diff	No diff	No diff	Lower	No diff	No diff

Core Category: Management

This category (Figure 13 and Table 3) captures the way principals in neighbourhood secondary schools engage the NT students as a result of their perceptions and expectations of these students coupled with their personal paradigm of streaming. Management is expressed through *innovating*, *adapting*, *abiding* and *equalising*. Each of these can be seen in the eight areas within the school context: (1) streaming/lateral movement, (2) monitoring, (3) deployment of resources, (4) subject offerings, (5) enrichment programmes, (6) managing behaviour, (7) leadership opportunities, and (8) treatment of NT students.

Figure 13

Management Category



Innovating refers to the introduction of new strategies or actions taken as well as the making of changes to the existing system to manage the NT students. This may mean adjusting their strategies within the guidelines as given by the Ministry of Education.

Adapting refers to the ways principals adjust their management strategies to suit both the students and the circumstances that are present within the school context. In adapting their way of engagement, principals customise and match their actions to the needs of their students.

Abiding relates to the way principals engage their NT students by following closely the guidelines and mandates as spelt out by the Ministry. There is no variation and rules are strictly adhered to.

Equalising refers to the ways principals “make level the ‘playing field’” for the NT students, thereby providing as many equal opportunities to the NT students as to the other students.

The figures 11 to 13 above show how each category is supported by its own set of concepts. The process of selective engagement flows through and underpins all the concepts and categories in chronological order beginning with the Paradigm Category. It shows how participants exercise selective engagement in managing the NT students.

The following section discusses the propositions of the theory of selective engagement beginning with the main proposition.

The Main Proposition of Selective Engagement

This section presents the theory of selective engagement with different sets of inter-related propositions. The first proposition discusses the general theory of selective engagement. The second set discusses the processes of the theory as influenced by the Paradigms and Conceptions of the principals. The third set discusses how the processes and categories of selective engagement are understood within the context of student Management. The fourth set discusses the proposition relating to the typology of the participants.

Proposition on the General Theory of Selective Engagement

Principals selectively vary the way they manage their NT students. Some of these management approaches are more characteristic to some than to others but generally can be grouped into four main sub-categories (Figures 13 and 14). From Table 3 it can be seen that for each of the eight different management areas - principals vary the way they manage their NT students. When it comes to monitoring, for example, only principals B, T and H can be considered as innovating. When it comes to providing leadership opportunities - all ten principals are equalising. In the area of providing subject offerings or choices, only three principals are abiding in that they offer only

those subjects as provided for by the Ministry. Therefore whether a principal is innovating, adapting, abiding or equalising will depend on the eight different areas.

Table 3
School Principals' Modes of Management

Areas of Student Management	School Principals									
	B	Y	A	S	T	G	Q	K	C	H
Streaming/Lateral Movement	AB, EQ, IN	AB, EQ, AD	AB, IN	AD, EQ, CU	IN, AD	AD,	AB, AD	IN	CU, AB, AD	AB, AD
Monitoring	IN	-	-	-	IN	-	-	-	-	IN
Deployment of Resources	MA	MA, CU	MA, CU	MA, EQ	MA, CU, EQ	MA, CU	MA	MA, CU	EQ, IN, MA	MA, CU
Subject Offerings	AB, IN	CU	AB, CU	CU	CU, IN	CU	AB	CU, IN	IN, CU	IN, CU, MA
Enrichment Programmes	CU, EQ	AD, EQ	EQ, IN	CU, EQ	CU	EQ, CU	CU	CU	EQ, CU	EQ, CU
Managing Discipline	CU, EQ, IN	AD	CU, AD	AD	CU, AD, EQ, IN	CU	CU	CU	CU	IN, CU
Leadership Opportunities	EQ, AD	EQ	EQ	EQ	EQ	EQ	AB, EQ	EQ	EQ	EQ
Treatment of Students	EQ, IN	EQ	EQ	CU	CU	CU	CU	EQ	EQ	EQ

Aspects of Engaging: **Innovating – IN**; **Adapting (Customising/Matching) – AD (CU/MA)**; **Abiding – AB**; **Equalising - EQ**

Proposition on the Paradigms and Conceptions of Selective Engagement

It is proposed that participants already have certain paradigms and conceptions regarding streaming and the NT students and that these influence the way they manage their NT students. The source of the theory therefore can be traced back to the mental models and conceptions of the principals. These influence the participants in the ways they selectively vary the way they manage their NT students within the context of the schools they manage. Thus principals selectively vary their way of managing the NT students (Table 3).

Proposition on the Processes of Selective Engagement

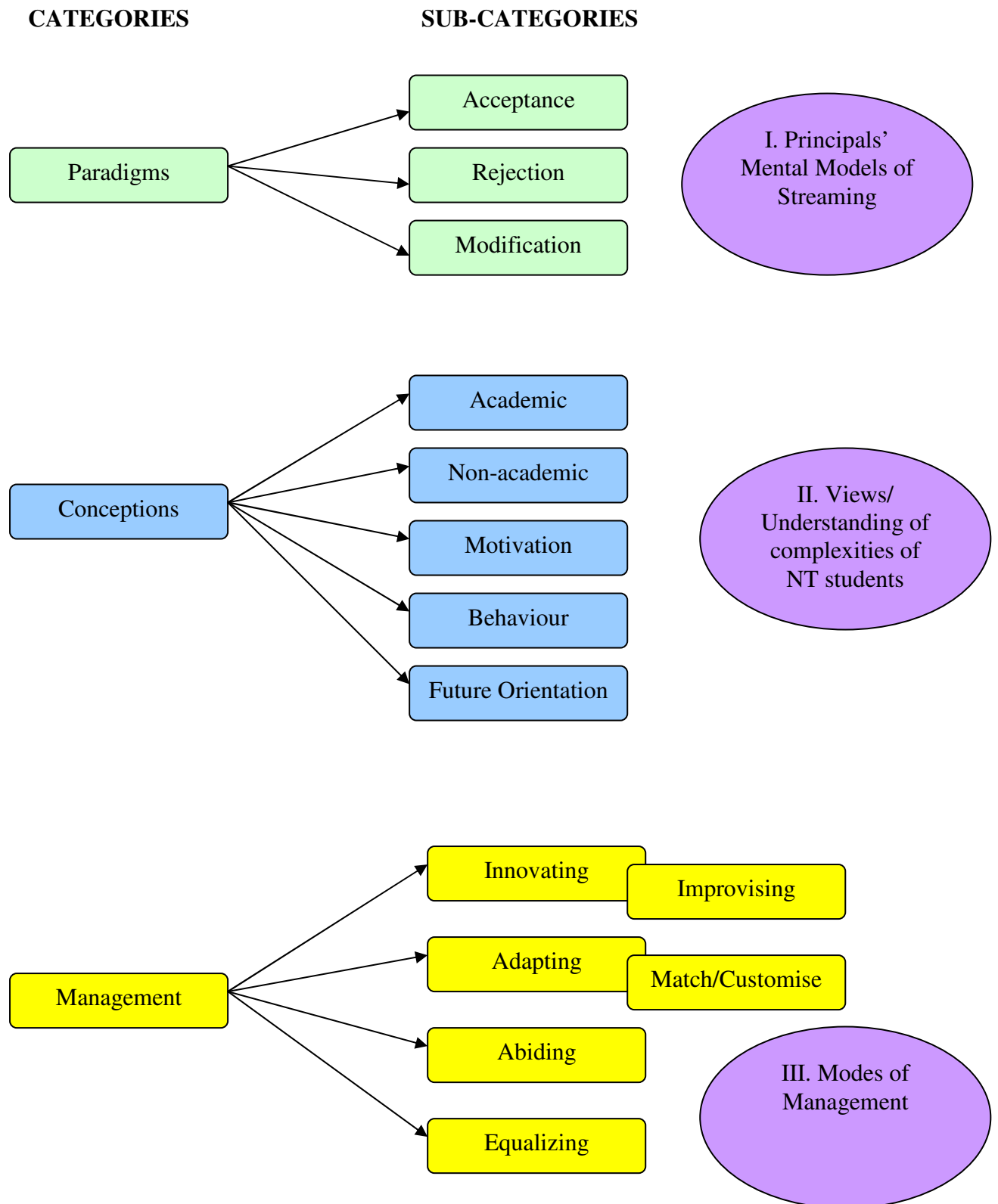
The theory of Selective Engagement emerges from the process of the three main inter-linked categories. They are: (1) Paradigms; (2) Conceptions; and (3) Management. The first category, Paradigms (Figures 11 and 14), consists of three inter-related concepts. These are the mental models which they hold on to as educational leaders. It is interesting that not all principals hold on to the same mental model.

The second category, Conceptions (Figures 12 and 14), consists of five inter-related concepts relating to the views and understandings of the complexities of the NT students that principals possess. The first and second categories can be said to influence and lead to the emergence of the third category - Management.

The third category, Management, comprises of four inter-related concepts relating to the management of the NT students as illustrated in Figures 13 and 14. This is the final category and it shows how the principals selectively vary their management of the NT students in the way they engage them in the different areas of student management within the school (Table 3).

Figure 14

Processes of Selective Engagement



Proposition in regard to the Typology of Participants

The extent of selective engagement varies amongst the principals in the different management areas. The typology of participants emerges as part of the grounded theory. It explains the participants' behaviour based on the three categories. As mentioned earlier, the participants do not always share the same paradigms and conceptions with regards to streaming, the students and their expectations of them. The principals selectively vary the way they manage the NT students in the different areas and while some may be realist who abide very closely to the Ministry's guidelines, these same principals may also be innovators/improvisers or even nurturers in the other areas. In other words each of the ten principals is capable of manifesting the different typologies - realist/pragmatist, innovator/improviser, and nurturer, with regards to the way they engage the NT students (Figure 15). But in order to 'type' them – they each need to fall into one main type – that is, they each tend to display predominance in one of the three. The emergence of the typology is presented in Chapter Six.

CONCLUSION

This chapter has outlined the theory of selective engagement and showed how the processes and the categories formed can be understood within the specific phenomenon of how principals manage the NT students in neighbourhood secondary schools in Singapore and how the typology of the participants can be related to it. Chapter Five will go on to illustrate the concepts and categories which lead to the grounded theory of selective engagement. This in turn will provide the groundwork for discussion in Chapter Six on how the typology of participants is related to the three categories.

CHAPTER FIVE

THE CONCEPTS AND CATEGORIES OF THE THEORY OF ‘SELECTIVE ENGAGEMENT’

INTRODUCTION

The theory of ‘Selective Engagement’ was summarised and presented in the preceding chapter as a ‘story line’ followed by a concise presentation of the categories and processes of ‘Selective Engagement’. This provides an outline of the structural design or ‘architecture’ of the theory (Strauss & Corbin, 1990, p. 231). The theory of “Selective Engagement” which emerged from the data represents the basic social-psychological process by which principals in neighbourhood secondary schools manage their lowest academic ability students in the Normal Technical (NT) stream. This chapter will present the full story using the categories and processes of ‘Selective Engagement’, with full reference to the data as well as provide a background to the next chapter, namely a ‘grounded typology’ of principals with regards to how they manage their students in the Normal Technical stream.

THE MEANING OF ‘SELECTIVE ENGAGEMENT’

The data indicated that principals tend not to make radical changes or transformations to their school organisation when responding to the challenges of managing their NT students in a neighbourhood secondary school. Rather, where changes are made, they tend to be carefully considered modifications of existing Ministry of Education’s policies. Principals of the schools studied believed that they were doing their best to meet the needs of the NT students in their schools. Though some of them may not be for streaming as it is being practised they generally accepted the Ministry’s policy and did their best to provide the best educational environment for these students according to what they

perceived and believed to be the best. These principals manage their NT students by 'selectively engaging' them in different ways according to the different areas of management.

The concepts in this study were derived from open coding of the labels from the interviews conducted with the principals. These concepts were subsequently refined giving rise to the three conceptual categories of Paradigms, Conceptions and Management and the identification of the core category. The Theory of 'Selective Engagement' was a result of integrating the core category 'Management' with the categories derived (selective coding). Each of these categories will now be considered in turn.

CATEGORY 1: PARADIGMS

This category addresses the research question: What are principals' perceptions of streaming as a way of organising students in secondary schools? A paradigm is basically a mental model or a pattern that one has in one's mind. The category 'paradigms' consists of the concepts *acceptance, rejection and modification* (Figures 11 and 14).

The group of principals studied varied in their perceptions of streaming. Most of them have positive views of streaming. They perceive it as a system that is best suited to the country in that the system allows for the very efficient deployment of resources. These principals feel that it is really necessary for a small country, like Singapore, where people are the only resource. They believe that streaming does in fact aid in getting the best people in the shortest possible time. To principal B, "streaming has to stay, given our limited resources, given our urgency to produce workers." This perception does not hold true for all principals, but nevertheless there is nothing that principals who disagree can do to change the system. Principals as a rule have '*accepted*' the fact that streaming is here to stay unless the change is made by the political leaders. What principals can do is

to make *modifications*, within their scope of control, to provide the new avenues or opportunities as necessary for the NT students to experience.

Seven principals (B, S, T, G, Q, C and H) were in support of streaming as it is practiced currently (Table 2). Streaming has also been perceived as an indicator of the academic ability of the students and to some it is a good predictor of academic success. Principal S believes that “streaming does help because general ability somehow is a good predictor of the academic. In fact it gives us some focus as to how to pitch for various groups and setting expectations.”

There are other implications with streaming that principals are not in favour of. ‘*Labelling*’ is one of these and it has never gone well not just with the principals but also with the general population. Although principal T supported streaming, his concern was more on how to integrate the students in the school by breaking down the *labelling* and its consequential stigmatisation. He thinks that “it is a positive move given that the Normal Technical students are generally not academically inclined” and that “it’s good to stream them there to allow them to follow at their own pace.” Generally, the principals view streaming as inevitably resulting in some form of segregation. This is a very real concern of principals and educationists as a whole. The challenge is for principals to find ways to integrate the NT students into the general student population

The findings indicate that streaming and the perception of it result in negative consequences such as in lowering the self-esteem of the NT students. Inevitably, both students in the other streams and the teachers form certain mental models of these NT students. The perception of their being slower academically is also tied to other ‘labelling’ problems such as ‘inattentiveness’, ‘slowness’, ‘short attention span’, and ‘restlessness’. This is best described by principal T as he vocalises a NT student as saying, “I am in the Normal, therefore I am not so good, I am like that.” Despite the realities of such perceptions and labelling, these principals have *accepted* streaming as a way to help students progress.

Streaming is done at the Ministry level before the child is posted to the school. Principal G has come to *accept* that streaming does have a place. She does not see streaming as equivalent to branding, but more reflective of different learning styles of students. To her the Normal Technical is just a name and nothing more. Although she was against streaming in the past she has come to *accept* it.

Principal G sees streaming more as a way to help the students. To her what are most important are the processes that are put in place to help the students, to add value to their education and learning experiences and to inculcate values in them. She feels that putting the academically slower students in a mixed ability class poses some problems for the teacher.

Principal Q is for streaming and to her one has to accept that not all children are born equally intelligent and with the same ability. For her streaming with curriculum matching would best meet the needs of the child. Without streaming it would be very difficult for the teacher to manage because “for one thing they all would have to take the same core subjects and the depth is expected of all of them because if there were no streaming the expectation is they all sit for the common exams. I would have to level up the group which is already struggling and I think it’s difficult for any teacher to handle.” With regards to *labelling*, principal Q although agreeing that streaming has negative consequences, considers it inevitable and that one just has to live with it.

Principal C acknowledges the adverse effects of streaming but over the years she has come to accept that “sometimes we need to give them a different curriculum based on what they can do.” To her streaming does not really allow a child every opportunity to go as far as he can and she often wonders how her Normal Tech results have been improving but yet the lateral transfer is not very significant. She also wonders what would have happened if her NT students had crossed over to do the NA stream.

Principal Y does not agree with streaming and she feels that streaming in secondary school is actually a result of the streaming in primary schools. She feels that streaming in

school at an early age is detrimental to a child who is a late developer and proposes that allowing a child to opt for subjects which interest the child and who has the aptitude for it would best describe a true ability-driven education.

Principal A prefers the way students were grouped into classes in the past based on ability and without the *labelling* although he was not against streaming. He feels that *labelling* can be abused but without the *labels* Express or Normal Technical, the self-concept and self-esteem of the students would not be affected although with streaming, the teachers can go at the pace of the class. Conversely, he feels that if you have a class with a wide variety of abilities, then it is very difficult also for the teachers to teach the lessons – “if you go at the middle, pupils who are stronger, faster would feel bored and then be held back; at the same time the slower pupils who are not at the middle would be affected as it would still be too fast for them and they may lose interest and even drop out.”

Principal K is for subject banding where pupils are banded according to their strengths and interests in certain subjects. With effect from 2007, the Ministry of Education has scrapped the EM3 stream in the primary schools although the EM1 and EM2 are still in place. Principal K is for breaking down the distinctions, ‘boundaries’, as she calls it, between the different courses and to allow the students to do the subjects based on their capabilities. She would rather not have the NT stream in secondary school although she agrees that there are benefits to it. To her this is probably the best way to allow them to prepare for further studies in the ITE. She believes that if we did not have streaming but had the same kind of academic programme for the NT students we would probably lose more NT students from the school system as they would not be able to manage a complete academic programme. So with more hands-on subjects like Computer Applications (CPA), Elements of Office Administration (EOA) and more practical based subjects they are better able to cope and to manage.

When asked whether they would want NT classes in their school, most replied that there were benefits of having all streams within the school. As to the number of NT classes

they would want if given a choice, only one (principal Y), when pressed between choosing from 0 to 2 indicated that she would prefer not to have any. As for principal K, she expresses the view that for a Catholic school like hers with a specific mission, excluding the NT stream is not an option. Principal C does not mind having any number of NT classes as long as she has the teachers who can handle such classes. Principal H believes in working with any student and making them feel welcomed.

What was most interesting in the findings was that though the Ministry of Education's intent and expressed stand is that all students should benefit from the education system in Singapore, the streaming system's inability to do away with the *labelling* and the stigma assigned to certain groups run counter to what it intended to do in the first place and that is to provide equality for all. The idea of being labelled as a Normal Technical School was rejected by all the principals except principal T. Principal T would seek to have his school known as a Normal Technical School if the Ministry would allow it. He passionately feels that the challenges would be different and exciting as "we will be preparing them in such a way that they will be motivated to go to the ITE and polytechnics." To him, the curriculum can be streamlined and designed to be a better mix of practical and academic. Principal T does not see a stigma in running a Normal Technical school. In fact he sees it as a reward to run such a school.

To the ten principals, streaming does have some *negative* connotations because it can demoralise the staff particularly if the public perceives that Normal Technical schools mean under-achieving and unmotivated students which conjure up a string of negative images. The principals in this study would like their schools to be known as a school that provides a good education for all streams. Principal A expresses his concerns that being labelled as a "Normal Technical school can be quite alarming because we are discouraging even parents of Normal Technical pupils from putting their child here because there is no mixing... the parents if they can help it would not want their child to be in the Normal Technical."

Principal S would like to have the 'branding' stopped and schools to have a mixed intake, bringing them up to the next level and at least at the end of four years to give them the hope.

Principal G does not really mind the *labelling* although she prefers not to have schools labelled. Just like she felt there was no right or wrong in streaming, *labelling* a school as a Normal Technical school did not matter. To her the most important thing is that the school provides a holistic education for all children. She is not troubled by whether it is known as a Normal Technical school or a top end school. She is proud to be 'G' Secondary School and it never occurred to her whether it is a Normal Technical School. "It's just a school in the neighbourhood", she said. Principal K perceives that there would be even less opportunities for the pupils to grow as a result of it being too homogeneous and lacking the benefits of interaction among students of different abilities. To her mixing the students within the same school would allow them the opportunities for interaction and will benefit them much more. Principal C does not mind her school being known as a Normal Technical School as long as she can add value to whoever comes in.

From the findings in this study, most principals view the label 'Normal Technical' as having a negative connotation. According to Christiansen (1992), Slee (1993), McDermitt, (1993), and Marks (1994), *labelling* is believed to be detrimental to self-esteem and self-concept. The deficits of these students are diagnosed and labelled and they are treated accordingly. This is supported by Hallahan and Kauffman's (1994) observation that labelling damages self-concept and motivation to learn, as well as resulting in others (teachers, peers and community) viewing the student differently - negatively – and is also echoed in Stainback and Stainback's (1987, p.67) assertion that labelling is "detrimental and leads to the individualisation and stereotyping of students".

CATEGORY 2: CONCEPTIONS

Perceptions

The category Conceptions (Figures 12 and 14) refers to abstract or general ideas inferred or derived from specific instances; a notion or idea grasped or understood or something conceived in the mind; a concept, plan, design, idea, or thought. Thus the category conceptions has as its component, perception, which influence how the principal 'sees' a particular situation. These in-school situations comprise of the properties academic characteristics, non-academic characteristics, motivation (being forthcoming), behaviour and expectations (Figures 12 and 14; Table 2) and these address the research question: What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?

Generally NT students have been perceived to be different from the rest of the student population. According to then Minister of State for Education, Dr Tay Eng Soon, (Tay, 1993), at the launch of the Normal Technical course:

... the kind of pupils you will receive have short attention spans. Many will be restless and unable to sit through a normal classroom lesson. They prefer to use their hands and work with tangible objects. They should be regarded as the slower versions or watered-down versions of the academically-inclined pupils in the other streams. If you assume they are and you teach them as if they will pick up abstract academic concepts albeit more slowly, you will be disappointed...

(Tay, 1993)

The above speech was delivered to prepare schools for the introduction of the NT stream in 1994. The perception of NT students was therefore set. Does this perception still apply and how prevalent is this among the principals in neighbourhood secondary schools? It was interesting to discover the prevalence of such perception held by the principals.

Academic characteristics

Students streamed into the Normal Technical stream in secondary school after their Primary School Leaving Examination (PSLE) have lower aggregate examination scores. These students have scores below 160 and are assessed to be slower academically. In the subject areas of English, Maths and Science they enter the secondary schools with very weak foundations. The common perceptions among teachers and the general public is that NT students are rather rowdy and many of them are disruptive and create disciplinary problems in the school. According to principal B, Normal Tech students need more character development.

According to principal A, it is quite challenging to help the NT students because they can be easily bored if the lesson gets too academic in nature - they may need some breaks in between to help them to get focused again and they also need lots of interaction to develop their various senses, not just hearing, seeing and speaking. Principal G also concurs that the NT students have short attention span and most of them are very kinaesthetic learners, very much hands-on and “they like participation.” However, she believes that difference in learning ability does not necessarily equate to difference in intelligence.

In terms of academic ability, principal Y perceives that it is not the pace of the lesson that must be slower but rather more guidance must be given as the Normal Technical students do not have a good command of the English vocabulary.

Principal Q views the Normal Technical stream as not intellectually demanding as the Express and the Normal Academic streams, in terms of academic orientation, and to her it is a fact that their level of comprehension, in terms of depth and scope, is not as deep and as extensive as the Express and the Normal Academic streams. She finds her NT students tend to ask very simple, surface questions but their “eagerness to learn, their eagerness to want to know and to want to do better is the same as any aspirations of any thirteen year old or fifteen year old child.” She goes on to elaborate that:

It's just that, if you talk about spirit is willing and the flesh is weak they may be an example, very eager spirits but maybe when it comes to the flesh somehow or other not so determined either because their attention span, their desire to want to excel or because perhaps they are frustrated their grasp is not as quick as the child in the Express. For various reasons they do give up quite easily. When you speak to them I get the impression that given a chance they would all want to be doctors but somehow or other they don't know that they do have their limitations.

Principal K's perceptions of the characteristics of the NT students echo the other principals - NT students are not as able as the Express stream to cope with abstract concepts; they definitely learn better with more group activity as well as hands-on experiential approach; however, they can do more than is presently expected of them if given the chance:

My Normal Tech girls in this school can be stretched and can learn to love writing poetry which I have not seen in my other school. The teacher, for example, gets them to brainstorm words that they can use first. So it's the vocabulary that is a handicap but as a group they work together to brainstorm words related to the theme and then later when they write the poem, it's done as a game and they work as a team. So it's amazing what they can produce.

Principal C feels that in terms of their academic abilities, the Normal Technical students are not able to handle very academic kinds of subjects because they are more hands-on. As a result they do well in subjects like Computer Applications and Elements of Office Administration. According to principal C, NT students can do well in Science provided the teachers are able to break down the information into bite size chunks with a lot of repetition so that they can handle it.

Non-academic characteristics

Generally the principals interviewed see NT students as more hands-on, more visual, active, with short attention span compared to the Express. Principal Y's view is that these students cannot stay on task for long because some of them are emotionally affected by

home experiences, their previous experience in school, and relationships with friends, all of which affect their self-esteem. To her these students have substantial academic challenges. Their need is to have success in the non-academic areas in and out of school first, before they can face up to the academic challenges. Her approach is to engage their hearts to win them quickly. She also feels that because some of them have police cases that are still pending, character development therefore becomes a priority for the NT students.

Principal Y perceives NT students as more vocal. To her these students are more frank, spontaneous and honest and they do not think so much into a situation. She does not think there is a difference when it comes to managing students in the three different streams. She believes in the Pygmalion effect and that “it really depends on the teachers and their attitude you take towards the class”. She believes that the NT students’ discipline can be just as good as the Express students as it boils down basically to Teacher Expectation and Student Achievement (TESA).

When it comes to non-academic characteristics, all principals agree that there is no difference in the abilities of the Express and NT students. Both can be as creative or non-creative. Their ability to perform well is interest driven. Principal Y proclaimed, “If they have the interest, they would do it for you. If they do not have the interest, no matter whether they are Express or Normal Technical they just would not do it for you, and you cannot get work out of them.” Are NT students better with their hands? Principal Y thinks that it boils down to interest and if the Normal Technical students are really interested, they are capable of producing equally good work as Express students. To principal Y, it is not easy to differentiate an NT student from the other students although students in the other streams tend to be more individualistic compared to the NT stream. She finds that it is easier to generate a class spirit from the Normal Technical students than from the Express or Normal Academic. Principal S concurs that their “peer influence is very, very strong and they mix rather readily.”

All ten principals agree that in the area of sports, the NT students are just as good if not better than children in the Express or the Normal Academic streams. Principal Q sometimes wishes that they would channel their energy and motivation from the non-academic to the academic areas because they do actually excel if they are interested in the academic. Principal K concurs that in terms of non-academic ability they can be very enthusiastic and she further observes that if there is a school project that they can do they will be the first to volunteer and stay back after school to do it.

Principal B claims “most of our students come from disadvantaged homes so they come in angry.” She observes that the NT students are “very distracted, very, very angry” and that this accounts for their lack of emotional stability and love and their landing up in the NT stream. To her, these students need more help in the area of character development. She sees herself and her staff as coming in “first to do damage repair and also to strengthen them to give them a sense of purpose; give them experiences where they can feel fulfilment that they are OK, like any other teenager in this school and that they can think.” As such these students, according to her, have a deficit at home and they come to school with this deficit.

Principal A and H perceive that a number of NT students come from dysfunctional and single-parent homes where they do not receive home support. Principal A claims that quite a few boys in his school are orphans. To him, at the end of the day the characteristics that these students manifest are due to the lack of home support and/or the kind of treatment they were given at home by their overly strict parents. He feels that in terms of manners and behaviour his NT students certainly do respect the teachers and they can also be “really very pleasant, basically very simple and sincere as compared to some Express students.” Similarly, principal A concurs that, “even though many of them may not be well behaved they have a good heart inside; it’s just that they need the guidance, the support to do well, to ‘build’ their character. They are really very nice people.”

Principal S points out that when “there is a belief in them ... they can do well, in the sense that at least they are happy in what they do.” The general perception among the participants is that NT students tend to be very active. Principal T perceives that NT students are able to engage in very intelligent conversation on topics they are very interested in. To him these students have “different buttons to press” and if you can interest them and engage them it is unlikely that they will have behavioural problems. He feels strongly that behavioural problems arise, as unlike the Express students, because the NT students cannot sit and concentrate for such long periods of time, and activities need to be given in smaller dosages. However, principal T observes that even when teachers can manage the majority, there will be a minority who just cannot be managed and these are the ones who come from broken homes. He concludes that because they are treated badly at home, they reach a point where they say, “Listen, it doesn’t matter any more. I can work at McDonalds and I earn my own living and I am not interested in all this.” He observes that when students reach that point where they do not even want to listen to the school system because they do not listen to their parents in the first place, then it becomes very challenging and difficult.

Principal C previously did not see the NT students doing so well in the area of Co-curricular Activities (CCA) but now she sees a bigger proportion of NT students taking their CCAs a lot more seriously, being very motivated and doing very well and also leading in the area of CCA. To her the reason is due to their motivation level.

Motivation

All ten participants agree that most of Normal Technical students come from average and below average family income groups. Very rarely does one find a student coming from a very high family income level. They also observe that some of the NT students do not have strong motivation and they lack strong family support.

Principal G attributes NT students’ low motivational level to a lack of family support and guidance provided by their families. On the other hand, she feels that students at 13 or 14

years of age may not even have goals in mind and if they have no goal or end in mind their motivation level will be quite lacking. Principal G, however, thinks “they can be motivated. It’s not that they are not able to be motivated. Maybe they don’t see the reason to be motivated.”

According to principal T, NT students can be more forthcoming when given certain tasks especially if the tasks are more hands-on and where they can get out and do things. On the other hand he feels that if the task is something to do with more writing projects then the other streams will be more forthcoming. He concludes that it is not that they are more forthcoming than the others.

Principal G’s stand is that whether the NT student is more forthcoming will depend on the child and the culture of the school. She fondly remembers her one and only class of 4NT:

They are so sociable, so much of actors and actresses there, so many singers there, really. I tell you they participated in almost every school event and even my videoing, all my guests, my top guest, directors and Ministers’ visit, they will do all the videoing, scripting and they become commentators, they run all the show for me. They were one of my key runners for my 40th anniversary. My Normal Technical class, that class in particular. The whole class was such an interesting class. I tell you they rub into each other but I cannot say that every class is of this nature, no, but I would say the majority of them, yes. They are quite forthcoming, they are very helpful, they like to help the school.

More principals perceive the NT students rather than students in the other streams, as more forthcoming in their willingness to help in the school. Principal Q chuckled that, “They may mess things up but their eagerness to come forward and volunteer is there.” She observes that, “The better ones tend to be more selfish. Whereas my NT students may not bring away that time is a resource. But if you talk about willingness to work for the school they are more forthcoming.” Principal K offers the view that it could also be because the students in the other streams have more homework given to them and as such they have less time after school. She remembers one NT girl saying to her, “I’m very

lonely when I go home. There's nobody at home. Here there are a lot of things happening". To principal C, the NT students are not necessarily more forthcoming. To her it is the personality of the students that determines whether they are forthcoming. To principal H, NT students are definitely more forthcoming especially in the areas which have elements of fun and noise such as clapping and cheering.

Behaviour

Principal G does not think that NT students are disruptive and behave badly. She believes that they can be quite "angelic". She and some of her teachers enjoy working with them. She prefers to take the empathetic view that they are actually "very loving kids just like kids in any of my other streams. Maybe they needed more help, they may need more support from us because they are so lacking in support from family." To her, behaviour-wise, NT students are just like any children and they can be very lovable children, very kind, helpful and nice to their teachers and to their classmates. As pointed out by principal G, "We cannot equate behaviour with inability to study. The two are totally different issues, altogether."

Principal K perceives that the NT students' behaviour is a little bit more childish. She observes that they tend to get into disagreements and quarrels and they need somebody to mediate. She concludes from her observations that they are not vicious but rather simple – "They are enemies today but they are friends tomorrow. They need someone to mediate for them and they are quick to make friends again." She also observes that the younger ones do not hold it against each other although the older ones can be a bit confrontational with the teachers because the younger ones just want acceptance and love while the older ones do not want to lose face. Her experience is that if they find a teacher who is genuinely concerned about their welfare or well-being, they will do anything for that teacher. In her own words, "they will stay back to help you wholeheartedly." She observes that if these students are engaged in school, they will want to come to school because they will get themselves involved in the after-school programmes or they will

volunteer to help out. To her, their problems are more relationships oriented amongst themselves and although they “quarrel easily, they make up also pretty easily.”

Principal C perceives that the NT students are slower in doing things and that they are more relational. In her school some teachers actually prefer the NT students because they find that they are very receptive, and they do show appreciation. Principal C appreciates the fact that they are “a lot more relational. To them, I like the teacher; therefore, I like the subject I will work hard. So it is a lot of emotional aspect that you need to attend to when you are handling students from the Normal Technical.”

Expectations

Academic and non-academic

As previously stated, NT students are perceived as *academically* weaker but no different in *non-academic* areas and in discipline from other streams of students. Principals B, A, and K (Table 2) have lower expectations of their NT students. Principal B places a lower expectation on the NT students “because they have already been streamed according to their academic ability into the stream/course when they come in so we know where they are.” However, she does make provision “for those who we know we can stretch and move them to a higher more demanding course we try. But for the majority we must then see how best we can make them successful technical students of higher institutions because that is where most of them will go in – service industries, technical industries and not places like JC, A level in that path ...”

Principal A has lower expectations of his NT students citing the fact that a number of them come from financially disadvantaged homes. As a result these students have taken on part-time jobs. Nevertheless he does encourage them to work hard although academically “we do not demand too much from them.” However, in the *non-academic* areas such as CCA and behaviour, his demands and expectations are no less “because they are certainly not handicapped in the areas and we do not want to lower our expectations in these.” Moreover, his “expectation for them in the sports is equal to other streams.”

Lower *academic* expectations for the NT students could also be because of the way the curriculum is designed. Assessments are based more on course work and not the pen and paper kind of examination. Thus principal K has lower expectations of her NT students because of the easier curriculum that they take. All the other principals (Y, S, T, G, Q, C and H) (Table 2) disagree that they hold lower *academic* expectations for their NT students.

In the area of *non-academic* expectations, principal Y believes in Teacher Expectations Student Achievement (TESA) and to her “basically in terms of discipline, Normal Technical and other streams, I think it’s about the same. And they can be just as good, in fact. So in terms of expectations, we do not push them to achieve the target at GCE ‘N’ level, as much as we do for the Express and the Normal Acad.”

The most basic expectation that principal S has for his NT students is that as long as the students show up in school he will do whatever is necessary, even financially, so that they will make it to ITE and as a result, “we do have students who find that they are quite happy to come to school.”

The principals who have high expectations want their students to do well so that they can progress further. For these principals their goal is not just to have their NT students qualify for ITE but also to get into the best courses and these students are “stretched to perform as best as they can to get into the best ITE course and especially in the area of English and Maths because these are the two core subjects that they would need to get into the better courses”, as proclaimed by principal T. Principal G’s stand is that “everyone matters to us so we have to ensure that our students do their best, and we are to expect the best from them. And to expect the best from them we have to stretch them.”

For principal Q, although expectations are not lower than for the other streams, she admits that they do not push the NT students as hard as the other students. Instead she pitches the expectations as required for that particular level which she thinks they can

achieve. Although she “does not deliberately stretch them” for the very practical reason the Normal Technical is not ranked, she nevertheless “expects the best from them.”

Future Orientation - Future Education and Career Directions for NT Students

NT students sit for the GCE Normal Technical Examinations at the end of Secondary Four and they then proceed to the Institute of Technical Education (ITE). Although in the MOE’s progression of advancement NT students can be promoted to Secondary Five Normal Academic to sit for the ‘O’ level examinations, none so far has done so in the schools studied. This is because of the stringent criteria requiring them to obtain at least an A2 for all the subjects. Also, the difference in the syllabus and the subject content studied makes it nearly impossible for a student who qualifies, to bridge the difference in content within a period of less than nine months before they take the ‘O’ levels. The Ministry has since 2005 amended the criteria for moving to the ‘O’ levels for the NT student who does very well in his/her NT level at Secondary Four. If the student does extremely well to meet the standards, he/she will be given a chance to be laterally transferred to Secondary Four Normal Academic and then subsequently if he/she does well at the end of the Secondary Four Normal Academic and qualifies for Secondary Five Normal Academic, he/she will then be able to sit for the ‘O’ levels. All in all this will take the student six years from Secondary One NT to be able to do his/her ‘O’ levels. Thus, once a student is streamed to the Normal Technical the path of progression is inevitably the ITE at the end of his secondary school. There may be some who will make it to the polytechnic and university while others go straight into the workforce.

When asked to estimate how many of the current batch of NT students would end up in the polytechnic and university, consistently the answer was only a very small proportion. The perception was that not all NT students would end up in the ITE as the courses there may not interest them. This is despite the statistics showing from year to year that 100% of the Secondary Four NT students qualify for the ITE. Principals (A, S & T) estimate that between 5 to 10% progress to the polytechnics and maybe 3 to 4% can make it to the university subsequently.

With regards to career prospects, principal B feels that the “majority will be behind successful industries as IT graduands because of the particular way they grow up, the experience they go through.” And she feels “that they will be more innovative. Blue collar, factories, service lines.” There does not seem to be any difference in the perceptions of principals with respect to the next educational level and the type of career opportunities that NT students will end up with.

Principal Y thinks the NT students can make good business men and women, meeting up with people because they are better than the Express students at the human relations aspect. She also perceives them to be more technically and vocationally inclined and not deskbound. This according to her applies to both the boys and girls in the NT stream

The consensus still was that most NT students will pursue further studies at the ITE where they will get the opportunity to learn skill-based subjects which would be the basis for their future career. In fact most would encourage the NT students to go to ITE instead of stopping their education after Secondary Four NT as is expressed by principal A:

I would always encourage them to at least make it to ITE because that's where you come out as a skilled, trained worker and once you come out you are already qualified for certain jobs. ... why we encourage them to go that way and after a few years they like the job so much and have built up enough passion for it ... So he or she will go on to the polytechnic and eventually he will look to start his own business.

Principal K feels that if the NT students choose not to go to ITE and they join the workforce, they do not really have any skills that they can upgrade and so command a progressive promotion. Principal T similarly feels that in terms of career prospects, generally, most of the NT students would become blue-collar workers and some may even start up their own shop in time to become entrepreneurs. Principal G feels that as long as they have the right attitudes, and good behaviour, they will find a niche for themselves and to her this is so much more important and valuable than getting all straight As. She also believes that they have an equally good chance compared to the other streams. She feels that at the end of the day her “Normal Tech kids ... can take the

risk, take the chances and do well in life ... and they have an equally good chance to survive and to do well in society.”

In school C, the principal does remember having any students who have actually made it to the Polytechnic or to the university. To her nursing and information technology are areas the NT students very much aspire towards while hair dressing seems to have a following. Her students like subjects like Computer Maintenance and generally, she feels that is where the students’ interests lie.

The general perception is summed up by principal K that NT students will end up in ITE “because I think they do realise that that’s the only door open to them right now from secondary.”

CATEGORY 3 (CORE CATEGORY): MANAGEMENT

This category answers the research question: Do principals’ perceptions and expectations of the NT students influence their school management of the NT students? This study looked into eight management areas within the school (Table 3 and Figure 17). These eight areas: streaming/lateral movement, monitoring, deployment of resources, subject offerings, enrichment programmes, managing discipline, leadership opportunities and treatment of students were distilled from the management practices of these principals through the initial pilot interviews and further refined. Four sub-processes: *innovating/improvising*, *adapting (matching/customising)*, *abiding* and *equalizing* (Figures 14, 17 and 18) derived from the process of open coding make up the components of the category ‘**Management**’. The principals studied **selectively engage** their NT students through their paradigms and conceptions and through their management of NT students in each of the eight areas.

Streaming/Lateral Transfer

Students are streamed by the Ministry at the end of their primary school into the different streams and then posted to the secondary schools. Lateral movement for students from the NT stream to the NA stream into the next higher grade is only possible from Secondary One to Secondary Two in the MOE guideline. Lateral movement is movement from one stream to the next stream which can be more or less demanding in terms of academic rigour. The MOE guidelines state that students in a lower stream who have achieved an overall percentage of 70% on the average for all subjects can be laterally promoted and transferred to the next more demanding stream. Therefore a Secondary One NT student can be laterally transferred to Secondary Two Normal Academic (NA). However, in Secondary Two NT students cannot be promoted laterally to Secondary Three NA. Some principals *abide* closely to the MOE guideline of the 70% overall percentage whereas others vary their criteria. The provision for lateral transfer is made available in all the schools studied.

Principal B streams her students “according to the scores and we also ensure that it is multiracial, that’s on purpose.” For streaming from Secondary One to Secondary Two principal B uses the internal end-of-year exam results and places “them according to their academic ability and we fine-tune by looking at which student may be better off not being in this group of pupils in order to ensure greater success.” The streaming process at the end of the year involves the principal and subject teachers which form the panel to decide on how the child is streamed. The choices for the NT students are limited because there are usually only one to two classes in most schools. Other factors such as pupils’ attitudes, behaviour, motivation, effort, capacity, and even the probability of aggregation of pupils with problems do not really influence the streaming decision in the other levels in school B.

In the schools studied, streaming is based on the academic performance of the students. Besides this, principal Y also takes into account “problematic pupils” or pupils with problems and she intentionally separates them (even though on ability they may qualify

for the same class) so as to diffuse the problems that may be encountered by the teachers. Principal Y also ensures that there is a balanced sex ratio within the class.

In school A streaming is strictly based on academic performance and the guideline of 70% was also *abided* closely. Principal A practices streaming “based strictly on academic performance not at all gender and so on because here we are looking at fairness in terms of academic grades and this is what we have been doing. We have not considered other factors.” So *equalising* of opportunities is based solely on performance at the examinations. Students in school A are told of the criteria early and to date there has been no exception. Principal A points out that streaming had to be done with care as they did not want to give the NT students an over-demanding kind of academic workload to handle which may cause them to be disillusioned and expedite their dropping out of education early.

In school S, gender is taken into account when the students are streamed as they come into Secondary One. They then go on to Secondary Two with hardly any changes. From Secondary Two to Three, academic ability, behaviour, aptitude, motivation and attitude of the students are considered by the teachers. Choice of subjects by the students is also taken into account. This, however, is dependent on the availability of manpower.

In school T, although academic results are used as criteria, there is more flexibility. Principal T is even willing to go below the 70% guideline if the teachers and parents feel that the student can manage. This applies to movement from Secondary One to Two and from Two to Three. Principal T is also concerned about the “danger of moving a person from a lower stream to a higher stream and making somebody who is very successful a failure and may hurt their esteem. Sometimes it works sometimes it doesn’t. So when it doesn’t work and they want to go back to a lesser stream we allow them.” This was different from the stand taken by principal Y. Principal T also differed from the other principals with regards to lateral movement. To him, if the criteria are followed there will not be much movement. He would like to see “in each class two or three students moving from the NT to the Normal Academic (NA) classes every year. Like for example this year

we have about three students from NT to NA.” In streaming, principal T’s intention is to integrate the students from the different streams and to prevent the NT students from having a negative self-fulfilling prophecy. He *improvises* and *customises* by combining the NT and NA students for certain subjects and even mandates it for the inter-class games such as soccer.

In schools G and Q, the criteria for Secondary One streaming were no different. The schools take into account other factors such as recommendations from teachers and parents. In school Q, streaming from Secondary Two to Three is done through the subject combinations which are based on the “ability of the child (*matching*), so it’s a question of demand and supply and the pupils’ choice.” Streaming criteria is based on end-of-year academic results although there are exceptions, such as borderline cases, and the teachers’ input is sought and principal Q has “actually pushed them up laterally if the teachers say that they can do it.”

Principal K streams the students not according to the PSLE scores but according to the Maths results when they first come into Secondary One. The reason for this is that her Maths HOD and teachers feel that with the relaxation to allow NA students to do ‘O’ level Maths or even NT students to do ‘NA’ level Maths, they would group them according to their ability in Maths and not according to the overall PSLE score. Her experience in her previous school when she streamed her students according to the PSLE scores created some challenges. She realised that it:

was a mistake because it was very easy to teach this class but very hard to teach the other class and it’s no good for their self-esteem because the teachers find it so difficult and when they compare the results of both classes, oh, this class didn’t do very well. So we stopped it. The very next year we didn’t, we decided to *equalise* both, we rank them and put one each so both classes start off equal.

Streaming is currently not carried out in school K because there is only one class of NT students. In her previous school principal K adopted banding when she had more than one class of NT students. Moreover, other factors such as *equalising* the number of girls

and boys and the racial composition in the two classes according to PSLE scores were also taken into account when the students were streamed.

In all the schools studied, opportunities are available for students to move from NT to the NA as long as the child satisfies the academic requirements of the school and this movement only occurs the following year based on the end-of-year results. Very rarely does the school moves anybody in mid-year. The number of students crossing to the NA is few and some do not take up the offer for various reasons.

In school B, besides the academic performance of the student, the school also looks into the presence of family support. The family and child can choose to remain in the NT stream even though the child may qualify for the NA stream. However, the converse is not true. Parents and child do not have a say and cannot choose to move to the more demanding NA stream if the child does not qualify.

Once a child is allocated to a stream that pupil often remains there for the four years and movement although possible in fact occurs infrequently. Among the principals there is still the difference in interpretation of the MOE guidelines. Principal B only provides one chance for the NT student to laterally move at the end of Secondary One. If the child fails to do so, he/she remains there for the rest of the next three years. In the event that the child does well in Secondary Two, principal B is willing to write in to the Ministry to have the child laterally moved to the NA stream from Secondary Two to Secondary Three although this is not provided for in the guidelines (*improvising/innovating*). However, to date there has been no appeal in this school.

Based on principal Y's practice, lateral movement is done only at the end of the school year when the results are known and "we follow the Ministry's guideline, that if the overall percentage score is 70 and above, I offer them the choice to move." This occurs only at Secondary One. Even if they do very well in Secondary Two NT, they progress on to Secondary Three NT. There is no more lateral movement. Students once moved up to a more demanding stream are not allowed to move back into the lower stream even if

they fail. The school adheres very closely to the Ministry's guidelines. Every year about three to four students make the mark. If they should fail Secondary Two NA, they actually repeat the level and stream. However, principal Y has not encountered this problem. Most of the NT students who go on to the NA, stay in the NA and take the 'O' levels at Secondary Five NA.

However, some do not take up the offer and they remain in the NT stream because although they may qualify for the more demanding NA stream, the child will have to face a more demanding academic curriculum. Overall if the child has obtained 70% principal A will move them up. At the moment it is only for Secondary One. For Secondary Two and Three if they do really well (70% and above) principal A may appeal through the Schools Division, if the child and parent express that they are prepared to take on a more demanding syllabus. This would be on a case-by-case basis. So far there has been no such request in school A.

The criteria in moving pupils out of the NT stream in school S is a percentage pass of between 65 to 70% (**improvising**) and this also takes into account the inputs from the teachers on whether the student can cope with the pace and whether they have the discipline (**matching**). Principal S also talks to the parents to find out what kind of support they will be able to give to the child. In school S lateral movement is only possible in Secondary One. In Secondary Two there is no movement to a more demanding stream in Secondary Three as the Ministry does not permit this (**abiding**). When it comes to lateral movement, principal T was prepared to experiment with moving them after the mid-year exams. However, he has yet to do so.

In school G although students are offered the opportunity to change stream sometimes the students and the parents themselves do not wish to be in another stream. They rather be the top student in the stream. Principal G sees this as a self-esteem issue. To the students, if they are top in that stream they can qualify for the EDUSAVE scholarship and enrol in the top ITE course of their choice. To her it does not matter if the child remains in the

stream as long as the child knows what she wants and at the end of the day not to stop at just the Normal Technical but to go beyond Secondary Four Normal Technical.

Principal G acknowledges that the number is small and is infrequent. She further adds that the small number is due to the fact that there still has to be benchmark and assessment to know whether the child is up to the standard as the NT syllabus is totally different from the NA.

Principal Q agrees that once a child is streamed, movement out of the stream is rather infrequent and the number who actually change stream is also very small. To her, “the opportunity is there. It’s whether the kids rise up to the occasion. That would be something which is actually individual to the child; the child needs to want it badly and then he will work for it.”

Similarly in school K there are those who will not take the opportunity to switch course even when offered. The criterion is no different from that found in most of the schools although school K also looks at 68% and 69% as the crucial grade which is also the practice of school T (*improvising*). The number of students who laterally moved from the NT to the NA was about three or four a year. In terms of opportunities to cross streams school K even provides the opportunity to cross in mid-year (*innovating*).

In school C the number of NT student crossing over to the NA stream every year is about three out of a class of forty at the end of Secondary One. In 2006 the school identified six students but only 3 eventually considered moving on to the NA. School C follows the MOE criteria of 70% and above and they “are very strict about having that 70% at least in Maths and English.” Principal C empathises as she sees them struggling quite a bit but she allows the transfer at secondary one and two. Even so, she feels her teachers are too cautious in their recommendation believing from experience that the students are better off in the Normal Technical stream rather than crossing over to NA.

Principal H uses academic ability as the main criterion for streaming. When it comes to lateral transfer she does move students in mid-year because to her “It’s an internal school arrangement.” She feels that her students’ grasp of the English Language must be there otherwise it would be a continual struggle for them because her Normal Technical students have very low PSLE scores of sixty odd which is rather low and “we had cases where the students are laterally up streamed and then they meet extreme problems. I would have wished that the child didn’t make that switch because the child could not catch up.” When it comes to the criteria for lateral movement, she exercises a little flexibility as she says, “If it’s a little up a little down, no qualms about writing in. If a child really shows that potential and if he is five points off the seventy percent or seventy-five percent, I don’t think we will hesitate in allowing that child to make the change.” Despite this, she hardly has any students moving to the NA stream because “they are struggling like anything. I mean they come here they don’t even know how to write certain words like chair.”

Monitoring

Monitoring the performance and identification of the NT students for possible movement up or down is done throughout the year based on the students’ academic performance. Only principal B had a specially designed system (*innovating*) called Grade Appropriate Improvements Needs (GAIN) to do this. Despite having such a system, principal B admitted that “for the Normal Technical at the moment we do not have this possibility of them moving from Secondary Two to another stream because the structure hasn’t been freed yet” (*abiding*). Also it would “be a case by case basis. Even Secondary Three and if the child is doing very well then I will try to push the child to Secondary Three next year of the Normal Academic.” To date no child has been moved from the Secondary Two NT to Secondary Three NA stream.

In school T, principal T asks teachers to identify students from the first Common Test and monitors these at mid-year. Principal H has a Close Monitoring Programme (CMP) for gifted outstanding students as well as those with special needs (*innovating*). When it

comes to monitoring, principal G does not “purposefully put a monitoring mechanism just for Normal Technical students, no, I don’t do that. We don’t have such a system in this school but a general system that runs for all three streams that has the same purpose.”

Principal Q does not have a system of monitoring the students. Monitoring is informal and the principal leaves it to the teachers to do the identification. There is no special system of tracking based on their PSLE aggregate. In school K, there was no monitoring system to identify pupils who should be moved up or down. At the end of each term the school analyses the cohort performance and the principal together with the Instructional Programme (IP) Heads of Department (HOD) also meet up with the Form teachers to identify the cases.

Deployment of Resources

Teachers

In the allocation of resources such as teachers, the ability to produce academic results though important is not the main criteria for the deployment of teachers to the NT classes although this is also taken into account in some schools. This may be true in certain schools but not in others. In school B the ability to produce results is deemed important by the principal for the Express stream but not for the NT stream.

Principal A *matches* the ability of his teachers to handle certain streams of students because to him not all teachers are able to produce the desired academic results or to help the students when put into certain streams. He explains the rationale for deploying his teachers as follows:

When we assign teachers we look at the teacher profile. ... because you need a different kind of teacher to handle the Normal Technical and to inspire them. So we really have to look at the make of the teacher. A teacher may be very harsh, strong academically, very strong content but if the teacher does not have strong classroom management skills then he would be a failure in the Normal Technical course because really when they come here many of them do not have the support. When they come to

school they need a special breed of teachers to help them, to guide them, to father them, to mother them and also to brother or sister them ... in our school we make a conscious effort to identify certain teachers who may not be able to stretch the Express. But with the Normal Technical these teachers will be very successful because they are slow and steady, deliberate and at the same time they are strong in discipline and the caring nature, it helps. For the Express some of the pupils would need more challenge, in terms of content and so it is a different game altogether. We require teachers who are stronger in content...

Results to principal Y would matter because of the fact that schools are ranked. It was very evident throughout that the ability to handle the NT students was the main criterion. In other words principals considered the characteristics of these NT students and the traits of teachers that would enable them to effectively handle these students. Some of these traits mentioned were caring, patience, ability to motivate, and good classroom management skills. “*Matching*” was the key word that was most used when it comes to deployment of teachers to the NT classes.

Academic ability of the teacher to produce results is not one of the important criteria that principal S considers in assigning teachers to handle the NT students. Care and concern and how well they can relate to the students especially the Form Teachers are even more critical and important. Ability to be patient is another (*matching*).

Principal T deploys teachers who are very enthusiastic, can engage the NT students, and who have command and control (*matching*). His concern is not just for the students but also for the teachers to succeed. To him when the students like these teachers the problem of teachers lamenting about their poor classes will not arise. Conversely, he observes that some teachers who are good at teaching the NT students are not able to teach the Express students well because of the different skills required.

Principal G would “put teachers who are strong at teaching Normal Tech kids there as a first priority”. These would be teachers who are “able to excite the kids, strong teachers who are able to teach both Express, Normal Academic and they are also teaching Normal Tech” (*matching*). She does not discriminate by giving the best to the Express

(**equalising**). In fact she would rather put a teacher who is mediocre or average to teach her Express because discipline is not a problem

The guiding underlying principle for principal Q is that any teacher who takes the Normal Technical must be caring but need not be academically strong. She puts very experienced senior teachers to take the tail-end classes. Her criteria are caring and the esteem of the child. Her NT students get these kinds of teachers. Her appointment of Home Tutors is always based on whether the teacher is a caring teacher and a strong teacher in classroom and pupil management but not so much on instructional skills (**matching**).

Principal K's criterion is that the teacher must be able to work with the Normal Technical students especially in their graduating year. If the Maths teacher is not able to help her NT students to pass their Maths and do well then they will not be able to qualify for half the courses in ITE. These teachers must be able to motivate them and work with them (**matching**). At the same time principal K also tries to spread out the NT classes so that the teacher is not saddled with too many NT classes (**equalising**). To principal K this is more important than who produces the best results.

When it comes to deployment of teachers, principal C's practice is to have strong teachers, whom she termed "anchor" teachers, for all the streams (**innovating**). To her it means spreading the good teachers thinly through the different levels and streams (**equalising**) so as to ensure there is uniform improvement within the school. Principal H's main criterion for deployment of teacher is the ability of the teacher to relate to the students. To her "the teacher must be someone who is so competent and able to keep the kids engaged and that need not, really in a short term of things, be a teacher who can produce academic results" (**matching**).

Money

When it comes to the allocation of money, the stream was not a factor in the budgeting for most principals. Rather it was the needs of the students that made the difference in planning the budget. Principal B feels that she has already given quite a lot to the NT

students by virtue of the fact that many of her students come from very poor families. To principal Y “it depends on the department’s needs ... so it’s more in that manner of allocation rather than in terms of stream” (*adapting/customising*). According to principal A, because of the greater demands and more programmes in the Express stream, more resources and funding would be channelled to them compared to the NT.

School S has quite a sizeable of the NT students belonging to the ethnic minority and as such many of his students need help financially. Principal S makes use of the various funds available to assist them. In school G, allocation of funds is not based on the streams but on the strategic thrusts of the school for the year (*innovating*). The thrusts cover all three streams. Principal T allocates money for projects and because many of the NT students are also from the lower socio-economic groups generally they get financial assistance, books, uniforms, and more subsidies in activities (*equalising*).

For school K, the mission of the school determines the allocation of funding. Their mission as an Infant Jesus (IJ) school is to pay special attention to the needs of the disadvantage so she does consider this resource and they use the autonomous funds to pay for the NT students. The students do not pay. If it is a subsidy then they give the NT programmes higher subsidy than the other streams (*equalising*).

To principal H as long as there are programmes that are suitable and relevant she has no hesitation in allocating more money to the NT students. In summary, all the principals, including Q and C, would deploy money where needed and relevant when it comes to provision of programmes. Where more money is spent on the NT students this is usually in the area of financial assistance (*matching*).

Subject Offerings

In all the schools studied, except one (school Y), the principals offered six subjects to the Normal Technical stream students. This is in line with the Ministry of Education’s guideline (*abiding*). Non-compulsory options for the NT are quite limited. These can be a

combination of any of the two subjects: Technical Studies, Food and Nutrition, Art, Science and Elements of Office Administration. This depended on what the principal thought would benefit the students most. Thus, the principal's expectations and perceptions of what is best for the students featured in the subject offerings available in a particular school.

Besides offering the required subjects, principal B also explores ways to widen the subject offerings through working with the ITE on the Elective Modules (EM) (*innovating*). This possibility for schools to tie up with external agencies and *customise* courses for the NT students for them to gain credits which can be used when they go to the ITE was encouraged by the MOE in 2003.

Based on past experience, school A offers 6 subjects which according to principal A would be more manageable for his NT students. He also considers the nature of the subjects and as a result he has included Computer Applications, Elements of Office Administration to give them the kind of training to help them in their future (*customising*). To him, we are “we are looking at ITE so there must be some linkage. We are trying to help them also to cope and to do well in the ITE.” Furthermore, he does not offer his NT students any other subjects that are not in the MOE's list (*abiding*).

In school Y the principal offers the Normal Technical students only five subjects. According to her, there is no need even for remediation for the NT students as academic expectations for the NT students to pass is not high. One consideration which principal Y had in deciding on the number of subject offerings was the deployment issue of whether it was worth the while for one teacher to teach only fifteen to twenty students. The other considerations are the courses available at the post secondary ITE, such as nursing, which require that they do science; the ease of passing a subject, such as EOA to meet the required passes; and the career prospects (*customising/matching*). To be able to take Science at Secondary Three, NT students have to attain at least 60% in their Secondary Two final examinations.

Although one or two subjects may vary, basically to the principals, all their NT students will end up at the ITE and thus their subject offerings prepare the NT students for the ITE (*customising*). Principal S offers his students six to seven subjects, “So there is a range. We don’t look at the number of subjects; we look at the subjects that would be useful for them (*customising*). The subjects we offer are not less than NA.” Within the framework of streaming, principal S tries to provide avenues (*improvises*) for talent development with the introduction of additional subjects that may not be in the normal curriculum such as 3-D Animation (*innovating*).

Principal T offers his students six subjects but his main consideration would be to offer a curriculum which would have more practical and hands-on experience for the students instead of subjects which are more academic (*customising*). He offers courses which place higher emphasis on outcomes on project works and less on written examinations. He strongly feels it important to “offer a full course on presentation skills and oral presentation skills to make them confident presenters of materials and all that because a number of them do not articulate as well in a situation when they have to present.”

To principal G, availability of teachers and the relevance of the subjects for ITE courses after secondary school would be the consideration in subject offerings. Most students here also take six subjects. Only a selected few would be allowed to do seven. The students have the choice provided they meet the standards set by the school. Principal G “*customises* our curriculum to stretch them, to give them opportunities”.

Principal Q’s consideration in subject offerings is the MOE’s guidelines. She offers six subjects with Science and Computer Applications being compulsory because of their usefulness. Principal Q in general ‘*customises*’ the programmes for her NT students especially providing programmes which are useful to them. She tailors the curriculum that they can cope and manage. In terms of demands in depth and scope “we don’t demand so much in them, say, for English, Maths and Science, as we do for the Express. And I think that’s being realistic.”

Principal K takes into account the students' ability to cope in the number of subjects she offers while making Science compulsory (**customising**). Her considerations in the type of subjects offered are students' interest and ITE entry requirements (**matching**). To her "If they don't do science they are not able to go into things like nursing, chemical process technology, things like that and being a girls' school we do not offer D & T in upper secondary so that is not an option for them."

The NT students in school C were offered seven subjects in 2007 compared to six subjects in the previous years. Principal C introduced Music as the seventh subject so that they can "learn something out of it" (**innovating**). Principal H explains that in her school, although the NT students are offered fewer subjects than the Express students, the non-academic subjects offered are linked to the academic subjects, for example, "you take Silat you can link it to English, they can write because they are so excited about it rather than to teach English in a vacuum." The idea in this school is to find more programmes or activities the kids are interested in and then create a linkage to their academic subjects to make learning fun (**innovating**).

Enrichment Programmes

In providing enrichment programmes, the principals studied do not take into consideration the stream. What was clear was the fact that principals considered what was relevant and good for the NT students based on their perceptions. Neither was the allocation of money for the enrichment programmes based on the stream. The common thread that runs through the schools is that when it comes to the core or basic needs that need to be met there is **equalisation** of opportunities in the areas of enrichment programmes whilst in other areas **customisation** of programmes to needs is the norm.

In school B, the NT students have more enrichment programmes because they have more time and energy. However, these are mainly in the non-academic areas such as in character development and personal leadership whereas for the Express enrichment is

really academic with a sprinkling of leadership programmes (**matching**). Generally, both streams have a fair share (**equalising**).

In school A, the Express streams have more enrichment in terms of study skills (**matching**). However, in terms of pastoral care it is the same for all (**equalising**). The school caters to all streams equally. However, in the area of remedial work, in view of the fact that the Normal Technical has more periods, the teachers are able to manage them within the curriculum time, most of the time, and as such they do not have remediation conducted outside curriculum hours.

The enrichment programmes that are core for everybody such as social etiquette and self-esteem are for all streams in school S (**equalising**). Besides these the NT will have some of their own activities (**customising**). In terms of number, it may be slightly less than the Express. According to the principal S, it is not a conscious choice.

Enrichment programmes in school Q are planned based on the students' needs rather than on the stream (**customising**). So the NT will have programmes which the Express and the NA are denied. The programmes are recommended by the Head of Department in charge of Pupil Development.

In the case of school G, the principal offers enrichment courses based on the thrust of the school for the year. This applies to all streams and not just the NT stream (**equalising**). For the NT, Elective Modules are specially organised to “complement their classroom learning, to get them excited about what they really want, to give them exposure” to what the ITE and other institution such as the Singapore Hotel and Tourism Education Centre (SHATEC) can offer (**customising**). There is no conscious effort to give more to any stream.

Principal T is the only principal who indicates that he has more enrichment courses offered to the NT students particularly to provide them with more hands-on experiences (**innovating**). Principal K is the only principal who says that in her school there are

probably less enrichment courses for the NT stream because of the fact that the NT streams are doing fewer subjects than the other streams.

School wide enrichment programmes such as life skills and leadership training are organised for all in school C. Principal C does give the Express more of certain programmes such as creative writing to stretch the more able students but not the Normal Technical students but “yet there are years when the focus of the enrichment programmes is on development of oral skills then everybody gets because it is across” (*customising/equalising*).

Enrichment programmes in school H are conducted during the holidays or as part of post-examination activities and the students are given the freedom to sign up. There may be one or two that are compulsory but the rest would be voluntary and there are not more for the Express compared to the NT (*equalising*).

Managing Behaviour and Motivation

Handling Discipline

To principal B, NT students do not contribute more disciplinary problems. The disciplinary problems posed by the NT students are more to do with attention span. Because they come from disadvantaged homes and carry with them certain “baggage” she deploys resources to engage their hearts and make them experience success (*matching/customising*). She wants “to create a more equal playing field for them”, (*equalising*) because she feels that “.... This group of students somehow if you engage the heart you win them quite quickly.”

Besides the normal punishment such as detention classes and making the kids do community services like cleaning up the school for committing offences, principal B has introduced a unique programme (*innovating*) in her school where on one day of the week the NT students get to do a cross-disciplinary project. This she believes allows the students to interact among themselves as well as with the teachers and thereby reduce the

barriers between them. She also believes this helps to reduce discipline problems in the school as the students find meaning in what they do and furthermore “they know that it will be useful when they go to ITE.” She started this for one level and intends to extend this to three levels. The project gives them the opportunity to become confident team players and they have the chance to establish rapport with their teachers and thus reduce discipline issues. This is another evidence of *innovating* to *customise* consequences to needs.

In school Y, smoking was the main discipline problem cited by the principal. She considers this a social issue rather than a school issue. Truancy was the other disciplinary problem among the NT students. Principal Y points out that some of the NT students do not come to school for many months. This is similarly echoed by many of the other principals. However, in such cases there seemed little the school could do about it and when it came to end-of-year promotion, whether the students passed or failed she just moved them up. According to her it makes little or no difference to the students whether it is written in their report books ‘promoted or advanced to the next level.’ In fact in school Y the teachers would prefer not to have any NT students being retained as this would add to their ‘problems’ for the following year. And so the principal obliges (*adapting*).

In cases where streaming results in an aggregation of students with disciplinary problems, principal A accepts this. To him the school has a very good team of teachers and they are trained to effectively handle these students. These teachers are caring but firm. Principal A gives some leeway to the NT students’ truancy with the aim of reducing their drop-out rate and when these students return to school they are not punished but counselled. Here again, school actions are *adapted* just to meet the unique characteristics of the NT students. In both schools Y and A, the NT stream does not contribute to more disciplinary problems.

In school S, there are no major cases of disciplinary problems posed by the NT students. Principal S shows extreme patience in handling the students. He attributes some of these

cases to a lack of home support. Even tougher for him is to convince his teachers why more time is needed to understand the students.

In school T, the principal attributes the behavioural problems to the fact that the NT students “cannot sit for such a long space of time and activities need to be given in smaller dosages” (**adapting**). Counselling the student, seeking professional help and involving the Ministry and parents are explored in cases where there are disciplinary problems and the successful outcome of this depended on the cooperation of all parties involved especially that of the parents and students. In situations where streaming results in an aggregation of more students with disciplinary problems within a class, principal T takes the step of spreading the students out (**equalising**) to ease the strain on the teachers of managing these students.

Principal T thinks that what he has done would also have been done by other principals and emphasised that he does not “label them. I treat them with extra kindness but with a very firm hand. I give them a lot of respect and I do not see them as a discipline problem”. He has introduced (**innovating**) a Responsibility Quality Model to his school in which he challenges his students to give of their best in terms of their potential. He believes in giving them the opportunity to learn to be good people. School T is also unique in that the principal has introduced a ‘No Caning’ and ‘No Shouting’ policy (**innovating**) because he wants his students to be more lady-like and gentlemen-like. In school T disciplinary cases do not mainly come from the NT classes.

When streaming results in certain classes having more challenging students, principal G would deploy stronger teachers for these classes (**matching**). Sometimes the classes are split or the students are banded according to subjects. Discipline cases are dealt with by the discipline committee. It is how to motivate them that principal G is still exploring to find the solution.

Principal Q’s observation is that the tail-end classes of every stream give the most disciplinary cases in terms of not doing their homework and this is not peculiar to the NT

stream. Real discipline cases as she sees it are spread out among all three streams. However, she thinks that:

It's deeper than that. A number of them have gone AWOL and it's a family background problem. So in terms of discipline they are not here to give me a problem because they are not here. I don't see them as discipline. It's very much tied up to family circumstances.

As a result, she employs counselling in most of these cases.

According to principal K, disciplinary problems do not come mostly from the NT students. The problems which NT students have are not so much disciplinary but relationships problems among themselves. The other problem is the difficulty of getting some of them to school because they have friends and interests outside of school. She believes that if these students are engaged in school they will want to come to school. What the school provides is a support system where teachers and counsellors work with these girls (**customising**). Principal C enlists the assistance of her Student Development HOD, Full Time School Counsellor (FTSC), and Form Teachers, to develop the social emotional learning skills that her NT students lack as well as to teach them anger management and time management. Besides this she involves the students' parents to come in to keep an eye on their children although in this she faces a challenge as a number of them actually have both working parents so they are left very much on their own.

In school H, students manifesting characteristics such as "ill behaviour and below expectation" are identified in the first term when they stepped into the school and then put on the Close Monitoring Programme (CMP) (**innovating**). These students are seen by the Operation Managers, who closely monitor their academic work and co-curricular activities (CCAs). Principal H explains that monitoring could be a "period by period monitoring, daily, weekly or it could be monthly, as they progress." They monitor the students even if they have made wonderful improvement for the four years they are in the school. If they do well, she will draft a little note to their parents through the students to

say well done. If not then they continue to work with them but the most important thing is to help them to understand that it is not the students against the school, that “we’re not making life difficult for you that I want to punish you but really that they have to understand our hearts and know what we are doing.”

Leadership Opportunity

In all the schools studied the principals claimed that *equal* opportunities for leadership are available for all students. In fact in two of the schools (school Y and school G) the Head of the Student Councillors and the Head Prefect were students from the NT stream. This was rather rare as in most schools these positions are usually headed by students from the Express stream.

Principal B believes that NT students need more development at the personal leadership level compared to that of the Express stream. She feels that they need to learn to manage themselves more and when they can do that only then can they take on leadership roles. In school B a small proportion of student leaders is from the NT stream and of this only about 20% are student councillors. However, in other areas of leadership, such as class committees and CCAs, opportunities are more available. In the area of representing the school in competitions, as long as the students are able, they will have the opportunity. So in non-academic areas there is *equalisation* of opportunities.

In school Y, the Head Prefect was from the NT stream. This is rather rare in most schools. Principal Y’s practice is to have a prefect from every class. By doing this she actually “forced student leadership” to happen within every class. Furthermore, she got the students and teachers to vote for the Head Prefect and they all voted for the NT student (*equalising*).

In school A, opportunities for leadership are available as long as the students are recommended and are able to cope with the demands of their studies. Just like in school Y, school A also allowed their students to vote for their student leaders (*equalising*).

In school S, a number of NT students excel and are leaders in certain sports and CCAs. These opportunities are important as they allow the students to enhance their self-esteem. In school T not only are opportunities available for all students but principal T's goal is to have 60% to 70 % of the student population take on leadership roles within the school. In principal T's words:

All opportunities. Same opportunities as the Express and the Normal Academic. No different (**equalising**). So in leadership roles, if you talk about prefects, you have NT students. You talk about CCA leadership you have them there, you have Class Chairman, you have environmental managers who are NT students. It's **equal** opportunity for all. They are not segregated or discriminated against in any way. All students across all levels, in terms of leadership, whether in the classroom and development will be encouraged to take up those roles. So we are going to create many more opportunities. The head of the Sepak Takraw team is from the Normal Technical stream, for example.

School G is the other school in the sample studied where the President of the Student Council is from the NT stream. Principal G's stand is that as long as they shine and excel they are given the opportunity to be leaders (**equalising**). She further exclaims that "there is no way because you are Normal Tech therefore you are not given the leadership role. Not in this school. No, teachers in fact love them."

Principal Q believes there is a leader in every child. To her, "The opportunity is that you prove yourself that you can make it and it's there for you to take up." In school Q, it is not that leadership positions are not available but that to qualify for certain leadership roles such as that of the Head Prefect, the student has to be academically strong, too (**abiding**). As for other leadership roles, there would be **equal** opportunities and the academic was not a criteria.

For school K, as long as a student is capable, she would be given the opportunity and be trained for it. To principal H, "everybody is a leader because you begin by leading your own life." In school C prefects are nominated from the NT classes as well and in CCAs some of them are leaders.

Treatment of NT Students

All the principals interviewed did not perceive that their NT students feel that they have been unequally treated. According to principals S, T, G, and Q, the NT students in their schools are treated more than **equal** or treated the best as compared to the students in the other streams.

In her efforts to treat all students **equally**, principal B will highlight top performers and classes. At the same time she has a Character Award (**innovating**) which anyone can strive for and there is no discrimination. So every cohort has a chance. Furthermore she highlights the equal opportunities available in the areas that they want to emphasize on and “resources are deployed to their needs.” Basically she tries to “make the place here as equal as possible for them because ... they have more challenges to handle.”

According to principal B, if the NT students perceive that they are treated unequally it is not because they are treated unequally or there was a lack of effort in helping them but rather an “inferior complex among certain ethnic group. They see the Express, fear their superiority and make them feel nought.” Instances of perceived unequal treatment may arise but these are more often individualised cases. So what principal B does is to talk to them.

Similarly in school Y, students may perceive that they are treated unequally because the teachers always picked on them. This is again more to do with individual teachers’ treatment of the NT students rather than the principal’s or school’s general approach in the treatment of the NT students. In fact principal Y makes it a conscious effort not to separate the NT streams from the other streams for school activities such as the weekly school assemblies. She feels that the perception may actually be at a more personal level towards a teacher, rather than to the school. She emphasises that in her school, “our programmes don’t run because you are N Tech, or you are NA or you are Express. We don’t run it that way. ... even CME is all together.”

Principal Y was very emphatic in explaining that they do not pick student leaders only from the Express but from all the three streams (**equalising**). She was rather proud that her Head Prefect is a Normal Technical student. So any perception of unequal treatment in the school is “more the teacher and how the teachers are treating them in this manner.” Principal A strongly believes that none of his NT students perceive that they have been treated unequally and he takes the time to talk to them and to encourage them. Again as far as programmes are concerned the school caters to all streams **equally**. It was interesting to hear principal A say that “We want to help all of them because I believe that if we are the parents we certainly do not want our child in the Normal Tech to be left out in such thing because it’s not correct.”

Principal S believes that the NT students in his school are treated more than **equal**. A lot of attention is given to those who are in financial need. Furthermore, he goes on to add that the students in his school are not “marginalised because we include them just like the same as any other except that I do put in quite strong teachers there to instil in them a sense of discipline” (**matching**).

Principal T thinks that what he has done would also have been done by other principals and emphasised that he does not “label them. I treat them with extra kindness but with a very firm hand. I give them a lot of respect and I do not see them as a discipline problem.” Principal T feels that there is no need for him to manage the perception of his NT students because they are very satisfied with the school. He feels that NT students in his school are the happiest compared to those in many other schools because they get equal treatment.

Principal G says that her NT students “feel that we actually treated them very equally and in fact even more so. My Normal Tech classes say they all enjoy the school and they appreciate the teachers and the programmes.”

In school Q, the principal believes that her NT students are treated the best because:

They get the best teachers in terms of the most caring teachers. In terms of co-form teachers they get two, we realised that they need more attention and they are very mindful. We are very deliberate in making sure that they do not feel discriminated or disadvantaged ... (equalising) my Normal Tech students are the most satisfied and the happiest of the three lots in school experience.

In school K, the principal consciously “try not to deny them of opportunities that others would have”. The NT students are offered the subject Literature which is not offered in other schools. Indeed this was something unique (innovating) in school K. They actually designed their own syllabus (innovating & customising) for the NT stream as the MOE does not have a Literature syllabus for the NT. She thinks that:

they don't feel in that sense they are being denied opportunities but I think they do feel a little special, in the sense that we customise programme for them and in a sense they have more fun taking Literature than the others. In the present school they have literature and they have other special programmes as well and in school-wide events, every class has that opportunity (equalising). Sometimes they do better in some of these, like family day because they work harder.

Opportunities in school K are therefore available to all students “and they get the recognition because we recognise the classes that do well for their efforts” (equalising).

Principal C likes to think that she is very fair and this is evidenced by the opportunities that the students have whether they are from the Normal Technical or otherwise. She often tells her staff, “Don't treat them different, treat them the same.” She strongly believes in the philosophy of treating everybody the same and giving everybody the same chance, because “you'll never know, right?” In her Alumni, many of her former NT students come back from the ITE to support the school in the various CCAs. Her emphasis on this sense of fairness and of not being prejudiced one against the other keeps her from revealing to her teachers the T-score of the students once they come in. As far as principal H is concerned, she offers her NT students singing, dancing and some activities that the Express students do not get and this says to them that they are special.

CONCLUSION

This chapter discusses the processes and categories of the theory of ‘Selective Engagement’ within the context of: (1) Paradigms; (2) Conceptions; and (3) Management (Figure 18). The first category examines principals’ mental models of streaming - their acceptance or rejection of it, whether they feel that streaming should be modified to a certain extent and their views of labelling that arise as a result of streaming. The principals interviewed varied in their views on streaming. Even those who are against streaming acknowledged that there are benefits that streaming provides. The problem is with the labelling that principals see as most damaging to the students and which principal Q feels “is something that is most unfortunate”.

The second category examines the perceptions of the characteristics of these NT students in terms of the following - academic, non-academic, motivation, behaviour and future orientation as well as expectations aspects. These did not vary among the principals interviewed. Subsumed under this category were the principals’ expectations of the NT students in terms of academic, non-academic and their projections of the NT students’ future education and career directions. With regards to principals’ expectations, all stressed that they held equally high expectations in the non-academic areas for their students regardless of the streams they come from. All the principals saw the Institute of Technical Education (ITE) as the end-point for most of their NT students with not many reaching the polytechnic or university.

The third category examines how principals manage their NT students in the eight areas of student management within the school. The principals studied ‘selectively engage’ their NT students through the processes of innovating/improvising, adapting/matching/customising and equalising in the areas of streaming and lateral movement, monitoring, deployment of resources, subject offerings, enrichment programmes, managing behaviour, leadership opportunities and the treatment of NT students.

The proposition on the typology of the participants relating to the theory of ‘Selective Engagement’ will be discussed in the following chapter.

CHAPTER SIX

A ‘GROUNDED TYPOLOGY’ OF PRINCIPALS REGARDING HOW THEY MANAGE THE NT STUDENTS IN NEIGHBOURHOOD SECONDARY SCHOOLS

INTRODUCTION

A major outcome of the study being reported here was the development of a ‘grounded theory’ (Glaser, 1978) applied to how a group of Singaporean principals manage their NT students in neighbourhood secondary schools. The previous chapters discussed the process of data collection and analysis from which a ‘substantive theory’ of ‘Selective Engagement’ emerged. The theory of Selective Engagement is linked to four propositions as stated in Chapter Four: (1) Principals selectively vary the way they manage their NT students; (2) The paradigms and conceptions regarding streaming and the NT students that the principals possess influence the way they manage their NT students; (3) The theory of Selective Engagement emerges from the process of the three main inter-linked categories - Paradigms, Conceptions, and Management; and (4) The extent of ‘selective engagement’ varies amongst the principals in the different management areas. These propositions relate to the questions: (1) What are principals’ perceptions of streaming as a way of organising students in secondary schools?, (2) What perceptions and expectations are held by principals in neighbourhood secondary schools regarding NT students?, and (3) Do the principals’ perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes? The findings, however, are not claimed to be generalizable to all school principals in neighbourhood secondary schools in Singapore.

The theory is an integral part of the grounded theory methodology adopted for this study (Lincoln & Guba, 1985; Strauss, 1987; and Strauss & Corbin, 1990). As outlined in

Chapter Four and re-stated above, the grounded theory emanated from the three categories which were labelled as: (1) Paradigms, (2) Conceptions, and (3) Management (Figure 15). The typology of the principals is the focus of this chapter. It explains the principals' mode of engagement across the three categories. This present chapter is structured according to the three types of principals as follows: The 'Realist/Pragmatist', The 'Innovator/Improviser' and The 'Nurturer'. The nature and importance of typologies will be discussed in the following section.

Figure 15

Typologies in Selective Engagement

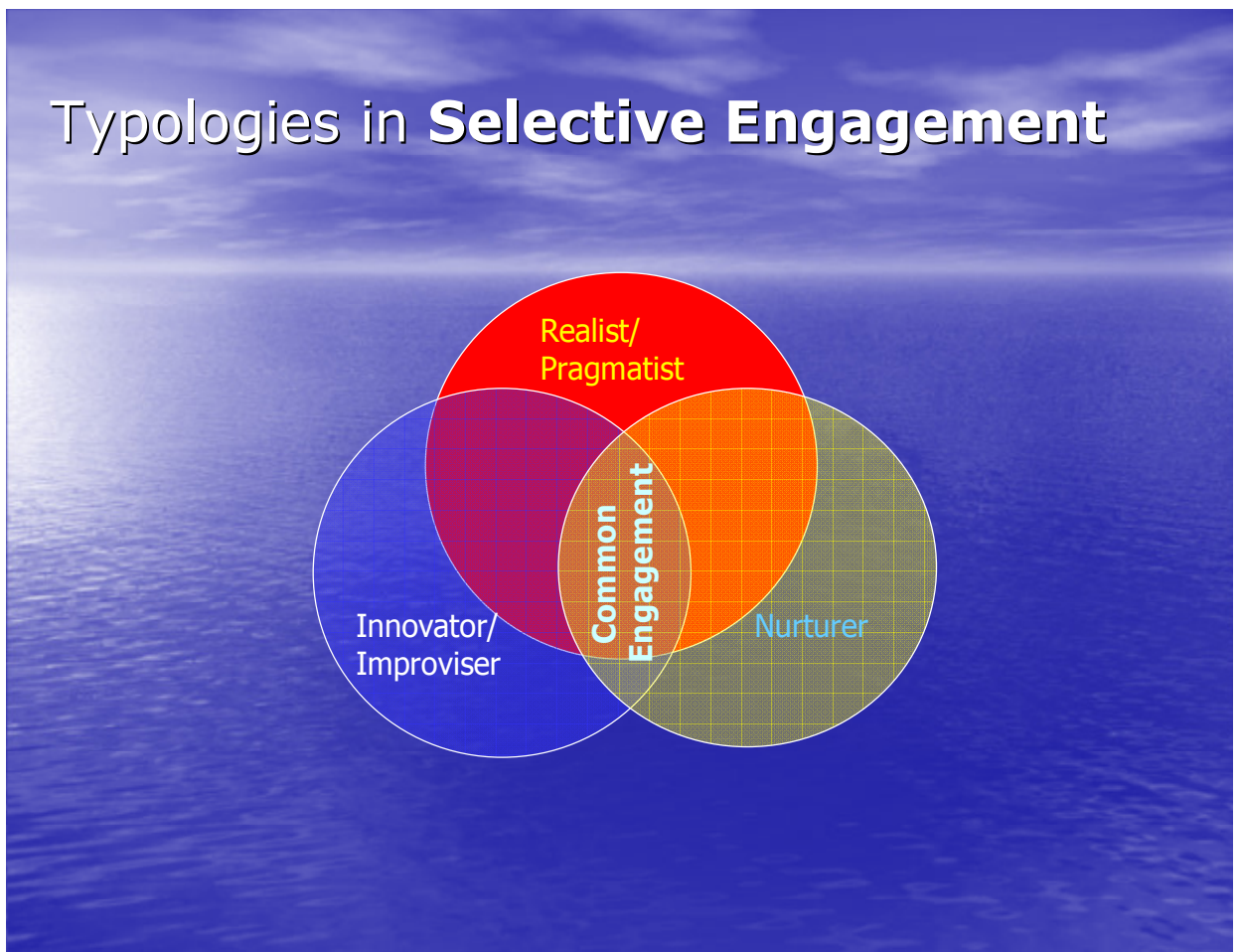
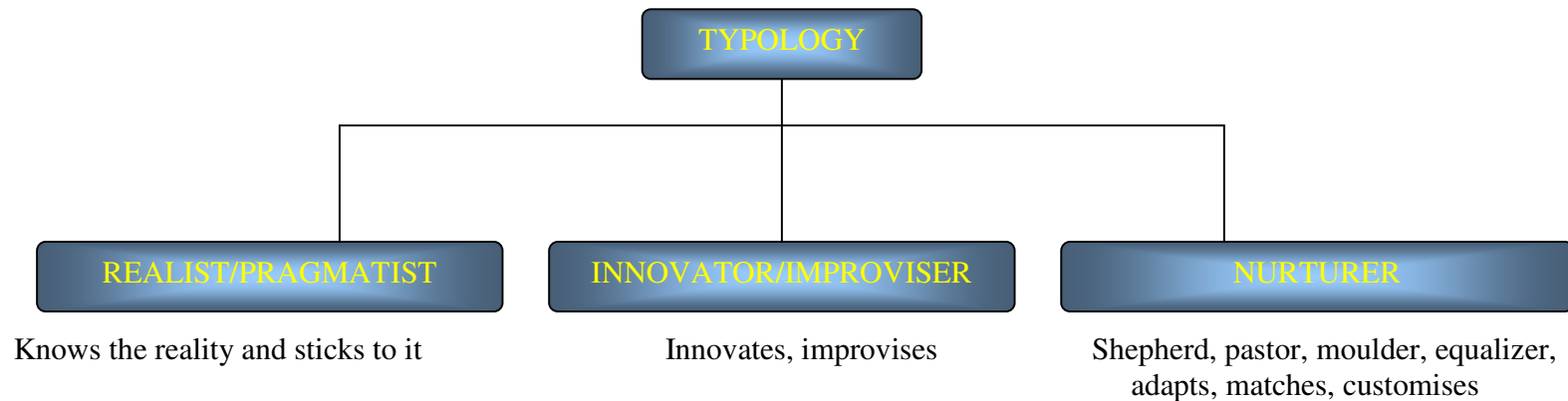


Figure 16
Typologies and their Descriptions



Characteristics of Each Typology

Realist/Pragmatist: A person who tends to view or represent things as they are and deals with it accordingly/a person who takes a practical approach to problems and is concerned primarily with the success or failure of her actions

Innovator/Improviser: One who introduces something new; makes changes in anything established

Nurturer: One who feeds and protects; to support and encourage, as during the period of training or development; foster; to bring up; trains; educates; equips and moulds into shape so that they can fit the future that has been predicted for them and to provide them the belief and hope in themselves so as to steer them away from the negative and depreciating labelling; motivates; verb: to help grow or develop; cultivate: *nurture a student's talent.*

THE NATURE OF TYPOLOGIES

The typology was generated from, and refers to, the categorisation of participants based on their individual responses with regard to how they manage students in the less able streams in neighbourhood Singapore secondary schools. Typologies are an important dimension of the development and presentation of grounded theory and provide the researcher with a powerful conceptual tool to enhance the theorising process.

In this study, the participants were classified into three types, the notion of type conforming to the sociological 'ideal type' as used by Max Weber (Aron, 1970, p.201). The theory of 'ideal type' is merely a description and testing of a hypothesis about empirical reality. An example of how this has been applied by social scientists is provided by Merton (1968), who identified four 'ideal' types of 'rule-breakers'. In this case, the rule-breakers are merely a type constructed for discussion and not an exemplary example of conduct (Gerth & Mills, 1946). Gerth & Mills (1946) further explain: "As general concepts, ideal types are tools with which Weber prepares the descriptive materials of world history for comparative analysis" (p. 60).

The grounded typology in the present study is also referred to as the constant comparative method (Glaser & Strauss, 1967). The discussion on the three research (guiding) questions produced three categories described in Chapter Five. They are: (1) Paradigms, (2) Conceptions, and (3) Management. The three categories in turn helped generate three types of participants according to their patterns of responses captured by the categories. They are: (1) The Realist/Pragmatist, (2) The Innovator/Improviser, and (3) The Nurturer. How these types relate to the respective categories is presented in Table 4.

Table 4
Relation of Typology of Participants and Categories

Ideal Types	Categories		
	Paradigms	Conceptions	Management
Realist/Pragmatist	Accepts that streaming is here to stay as it is a government policy; nothing educators can do except to operate within this constraint	Believes and expects that students have a set of characteristics and these are consistent within the stream	Works within the prescribed guidelines
Innovator/Improviser	Accepts the fact of streaming but takes the initiative to innovate and improvise programmes within the streaming guidelines	Believes in coming out with unique ideas that can be translated to meet the needs of the students	Works within the rules but prepared to stretch or bend the rules to come out with new ideas or improve on existing ideas
Nurturer	Main concern is on nurturing the students regardless of acceptance or rejection of streaming policy	Wide variations in the way they conceive the NT students in terms of characteristics and expectations but nonetheless generally believes that they can be just as good	Emphasises the pastoral. Focuses on the varied talents. Interests of students always at the centre. Focus is on provision of opportunities to develop the student holistically

THE REALIST/PRAGMATIST

The label ‘Realist/Pragmatist’ relates to that group of participants who are practical and down to earth. They are not idealists. Rather they acknowledge what the system can and cannot do. They do not see the relevance of tinkering with the system. Hence, their beliefs about the characteristics of the NT students influence their expectations in a

‘realistic/pragmatic’ way. They do what is within their means to do and they tend to abide closely to guidelines set by the Ministry of Education. They hold on to a fixed mental model of streaming. The Realist/Pragmatist can be seen not only among principals in the Paradigms category but also in the Conceptions and Management categories. Particularly in the management category, one can see the Realist/Pragmatist element in the areas of student management. The following discusses the relationships between this ideal type, the Realist/Pragmatist, and the three categories that support the theory of Selective Engagement.

The relationships between Realist/Pragmatist type and the “Paradigms” category

Most government policy changes take time to implement. The Realist/Pragmatist type being practical in their outlook and actions, perceive that streaming is a policy that they can do nothing about and whether they agree with it or not, they accept that they must work within the confines of this policy. Among the principals who are Realists/Pragmatists in certain areas and who abide closely to this paradigm - are principals B, Y, A, and Q – only B and Q are pro-streaming. The sentiments of these principals are echoed by principal B who holds that “streaming is very efficient for deployment of resources and it has to stay because of limited resources and urgency to produce workers.” To these Realists/Pragmatists, streaming does seem to benefit a majority of students although there could be further refinements to the streaming process. Principal Y is against streaming and principal A prefers some modification to streaming as it is currently practised. However, for all these principals, their paradigm is that there is nothing they can do to change it and since the policy is here to stay they must accept it and move on.

The relationships between the Realist/Pragmatist and the “Conceptions” category

Streaming is supposed to identify and then group students according to their academic strengths. It is a sorting out process based mainly on academic achievements in the Primary School Leaving Examinations (PSLE) before the students enter Secondary One.

The Realist/Pragmatist holds to the consistent belief that Normal Technical students have a similar set of characteristics that differentiate them from students in the other streams. However, when it comes to their expectations of the NT students, principals Y, Q, C and H have the same expectations for the NT students as they have for students in the other streams. Only principals B and A had lower expectations of them. Principals B, Y, A, Q, C and H's conceptions of the NT students as compared to the other streams are that they are: academically slower; and no different in the non-academic areas such as co-curricular, except for principal C who feels that they are more motivated in this area; and all are destined to go to the Institute of Technical Education (ITE). As to whether the NT students are more forthcoming, there is wide variation in the conceptions of these principals. With regards to behaviour/discipline, B, C and H perceive there is no difference; Y and Q perceive a difference; and A perceives the NT students as having less behaviour/discipline problems in the school. The perceptions and expectations of these realists/pragmatists thus differ in some of their perceptions of the NT students.

The relationships between the Realist/Pragmatist and the “Management” category

The Realists/Pragmatists manage their NT students within the guidelines set by the Ministry of Education in a number of management areas. For example, all six principals, B, Y, A, Q, C and H follow strictly the Ministry's guideline when it comes to streaming or lateral movement of the NT students. The percentage of 70% is taken as a rule and lateral transfer or movement from the NT stream to the Normal Academic (NA) stream can only occur when the student manages to attain this level. In the area of subject offerings, B, A and Q only offer subjects which the Ministry sets out for the NT stream. In the area of provision of leadership opportunities in the prefectorial board, principal Q places academic ability as one of the prerequisites to holding the top post. As she explains, “I think if you really want the Head Prefectship, we must be realistic to recognise that there must be a balance of the academic and non-academic and my child must be able to handle the academic before we put him or her in for the real leadership role as you and I understand.”

As a Realist/Pragmatist, principal B deploys her resources based on the different needs of the streams. To her, the needs of the NT students are more related to character building whereas for the Express stream, they are more related to academic results. Thus to her, academic results count. Thus, when it comes to the deployment of teachers, principal B says, “I also must match inclination and ability with the giver and the receiver. If this person can give a lot for academic success and academic success features more for the Express students, then why not? I have to match the ability with the needs.”

Academic results to principals A and Y appear to matter because of the fact that schools are ranked. As a Realist/Pragmatist, principal A deploys his teachers based not so much on their ability to produce academic results, but on whether they have the aptitude to handle the NT students. According to him, more resources are channelled to the Express stream by virtue of the fact that they take more subjects and therefore need more support as compared to the Normal Technical. In assigning teachers he takes into account their profile. Principal A feels that although a teacher may be very strong academically, he or she may not be able to reach out to the Normal Technical pupils. This is because the teacher handling the Normal Technical students must be able to inspire them. These teachers need to have strong classroom management skills and they must be able to help and guide them. As principal A says, “We do put caring teachers, teachers who are firm and strong in these classes to help.” In selectively engaging his NT students, principal A says that he does not punish them even if they skip school for a few days because his purpose is to encourage them to come to school and prevent them from dropping out of school.

For the Express students, he does deploy teachers who are strong in content or subject teaching. This is no different from principal Y. Being a Realist/Pragmatist, principal Y chooses to advance his NT students to the next level even though they may fail their examinations simply because she takes the concerns of her teachers into consideration. The sooner the NT students go through and exit school the fewer problems they will pose to her teachers. She feels that the term ‘advanced’ or ‘promoted’ doesn’t matter to them, because what happens is they just go up one level.”

Principal G deploys more teachers so that more attention is given to the NT classes. She sometimes splits the class into smaller groups for certain subjects or even implements banding in terms of subject teaching. She concludes that the NT students do not want to study because they are weak in studies. The question she faces is how to motivate them and to make learning engaging. This is something she is still working hard at although she has no answer to that question.

THE INNOVATOR/IMPROVISER

The meaning of ‘Innovator/Improviser’ relates to the participants’ characteristics that resemble those of an entrepreneur. Their focus is not fixed on the guidelines, as given by the Ministry. They seek to do things in a more adventurous and creative way. They look for new ideas and ways to do things as well as exploring better ways of doing what they cannot change. They are prepared to push the boundaries of the Ministry guidelines so long as they do not get into ‘trouble’ with the Ministry. They are very adept at managing the circumstances to selectively engage their students. The innovator/improviser can also be pragmatic, believing in inventing new and unique ideas that can be implemented to meet the needs of the students.

The relationships between the Innovator/Improviser and the “Paradigms” category

Of the principals (B, A, T, K, C and H) who are Innovators/Improvisers in certain areas, principals B, T, C and H are pro-streaming. Only principals A and K prefer some modification to the current practice of streaming. Principal K feels that it would be better if “we did not have to stream them into different courses but allowed them to take subjects according to their ability.” To the Innovator/Improviser, the paradigm they hold to does not affect the way these principals selectively engage their NT students in the school. Neither does the paradigm they hold affect their willingness to explore, innovate or improvise in the way they selectively engage their NT students or the programmes they introduce.

The relationships between the Innovator/Improviser and the “Conceptions” category

Principal T thinks that streaming is a positive phenomenon, given that the Normal Technical students are generally not academically inclined and their ability to follow lessons at the same pace as the Normal Academic and Express streams would actually be an obstacle for them if they were to be put into those streams. Principal K prefers to modify the current streaming process. All the principals (B, A, T, K, and H), except, C, perceive the NT students to be slower academically, but, no different in the non-academic areas. Principal C feels that they are more motivated in the non-academic areas. As to their being forthcoming, principal T feels that this varies among the students, whereas principal K feels that they are more forthcoming than students in the Normal Academic or Express streams. Both principals T and K perceive that there is no difference in the NT students' behaviour or discipline compared to students in the other streams. As to the NT students' future orientation all hold to the same view that they will go on to the Institute of Technical Education (ITE).

Principals T, C and H's expectations of the NT students are no different from what they expect from students in the other streams. On the other hand principals B, A, and K, have lower expectations of them.

The relationships between the Innovator/Improviser and the “Management” category

The Innovators/Improvisers in managing the NT students do not just simply follow what is permitted within the Ministry of Education guidelines. They are more adventurous than the Realist/Pragmatist type. They selectively engage their NT students by implementing new ideas in their streaming process, in their monitoring of the students, in the provision of subject options and enrichment programmes and also in the area of managing disciplinary behaviour.

On streaming, for example, principal B also takes into account the composition of the racial mix within each class. She uses more than the academic criteria and also looks at

whether they can fit in and whether they can succeed. She tries to make the curriculum exciting for the students so that they can experience success almost every week. In school B as part of the curriculum, one day a week is an outing day for which the students have to do the planning. Furthermore, principal B has an innovative curriculum for Secondary One and Secondary Two that is very purposeful where the students have to complete a certain project and a module and after that they go on to the next module and another set project. It is very hands-on and contextual and they even get outsiders to come in to give the students challenges and to think how to do it. In this school subjects such as technical, home-economics, Computer Applications (CPA) and English are combined and the curriculum time structured for the Secondary Ones and Twos.

In addition, principal B liaises with the ITE to package a module for her Secondary Two NT students so that they can gain credits even before they join the ITE. She deploys a Pupil Management Level Coordinator (PMLC) for every cohort or course of students acting as a “mother” or “father” in addition to the Form Teacher. So in terms of monitoring there is a really comprehensive matrix for managing the students. In managing discipline principal B uses projects and a detention class where the students do certain responsible tasks. Besides this she dangles incentives for them. According to principal B the cross curriculum projects that the students are involved in actually provide them with ample opportunities to interact, making them more responsible and reducing their disciplinary problems.

Principal A specially arranges for his Normal Technical students to undergo Rope Obstacles courses to build their team spirit, raise their self-concept and their self-esteem, to help them feel they are valued. He even gives them one-to-one sessions to help them to improve their subject knowledge when the students need help. He has also included them in an exchange programme – the Japanese Exchange programme. The school actually encourages the NT students to host the Japanese students. His intention is to tell the NT students that they are also part of the family. He does not want them to experience feelings of exclusion. Principal A claims that his NT students are very excited and very happy because the school has included them.

Principal T does not follow the Ministry's guidelines to the tee. He has moved his NT students to the faster NA stream even if they have just obtained 68% in their overall end-of-year examination results, so long as all his staff agree. He considers the MOE criteria of 70% as only a guideline which need not be strictly followed. He monitors his students after the common test in March and then again in the middle of the year. He also has Level Heads who assist in the identification and monitoring of potential students. Furthermore he bands his students according to subjects such that the weaker ones will have the opportunity to study at a higher level and be mentored by the stronger students in the faster stream. In terms of subject offerings for the NT, principal T offers more practical, skills oriented subjects rather than more academic subjects to the NT students

Principal T has a very unique Responsibility Quality Model which he uses to challenge his NT students to be more responsible. The students are given a choice to behave and abide by the school rules, but, if they choose not to, then they will have to leave the school. As he proclaims, "The school gate is always open." Students are allowed to return any time with their parents and he will take them back. Moreover, principal T has a 'No Caning' Policy. Principal T believes in giving his NT students the opportunities to let them learn to be good people. He has also introduced a "No Shouting" policy in his school and all students are addressed as ladies and gentlemen. So according to him he treats everyone the same way. In fact, principal T stands out among the Innovator/Improviser type, as he is the only one who boldly says that he does not mind running a Normal Technical school specially for NT students.

So far as the present researcher is aware, no neighbourhood secondary school in Singapore, except school K, has offered their NT students the subject Literature. Principal K feels strongly that the NT students should not be denied opportunities that others would have. She offers Literature to her NT students even though there is no official NT Literature syllabus provided by the Ministry. The school designs its own syllabus, but the subject is non-examinable and cannot be counted for promotion. Principal K's intention is to make her NT students feel they are not denied opportunities: rather, it is to make them feel a little special as they customise the programme for them.

In school K, the NT students take Literature and they have other special programmes, too; every class has the opportunity to take part in school-wide events. Within the stream, principal K also bands the students according to the subjects they are good at. Besides this she also takes into consideration the racial mix as well as balancing the sexes and distribution of PSLE scores between the NT classes. When it comes to lateral transfers she has lowered the Ministry's criteria of the overall percentage from 70% to 68%. And every year she has about three or four students moving from the NT stream to the NA stream.

In school C, the principal deploys a strong "anchor" teacher for every stream to hold the fort. She feels that it is important to spread the good teachers to the different streams in the upper and lower secondary classes, sometimes at the sacrifice of not having all the better teachers at the upper secondary level. To her, balancing the teachers at all levels is important if "you want to see improvement uniformly." Principal C also offers the NT students the Elective Modules such as tourism and motor car repair to enable them to gain credits for their next level of education at the ITE.

In school H, the principal has a Close Monitoring Programme (CMP) to track the students' and whole class academic performance as well as disciplinary behaviour of certain students. Principal H has also incorporated a Sports Education Programme into the NT students' curriculum where it is more skills-based and at the end of which the students demonstrate their performance which provides an extrinsic motivation for them and gets them excited. Some of these activities are linked back to the academic subjects so that it becomes part of the overall learning for the NT students.

THE NURTURER

The meaning of 'Nurturer' relates to those principals who promote and sustain the growth and development of the individual student. Thus the Nurturer principal is one who creates for the individual student an environment conducive to develop, cultivate, educate and

make available as many opportunities as possible for the growth and well-being of their students. While nurturer qualities are found in all the principals studied, some (S, G, and K) displayed them more than others. The Nurturer selectively engages their student through adapting, customising and matching their management approaches to the needs and characteristics of the students. Moreover, the Nurturer also tries to equalise opportunities for the NT students *vis a vis* the students in the other streams.

The relationships between the Nurturer and the “Paradigm” category

The Nurturer straddles the ten principals studied. Among the Nurturers there are those who are for streaming, those who are against streaming and those who are for modifying the current practice as they believe it can be further improved. Principal S believes streaming does help because to him “general ability, somehow, is a good predictor of the academic.” He also finds that some of the students actually do better over a five year period than if they were to do the syllabus over four years. Principal S also feels that streaming gives some focus when it comes to pitching for the various groups and setting expectations. Principal T strongly believes that streaming is good as it allows the NT students to follow at a slower pace. Principal G sees the NT students as having different learning abilities and different learning styles. To her their inability to perform well in the Primary School Leaving Examination does not mean they will not do well in secondary school. She believes in customising the curriculum for the NT stream to suit their learning styles, to stretch them and to give them the opportunities.

The relationships between the Nurturer and the “Conceptions” category

The Nurturers do not hold to a standard conception regarding the characteristics of the NT students (Table 2). Only principal G perceives that academically they are no different from students in the other streams. As she says, “I think I see the difference in some of the learning abilities, not necessarily intelligence.” All ten principals perceive that there is no difference in the non-academic abilities of the NT students when compared to the students in the other streams. When it comes to the characteristics of being forthcoming

there is wide variation in conceptions among the ten principals. In the area of behavioural/disciplinary problems eight of the ten principals do not see a difference between the NT students and students in the other streams. Only principal Y feels that the NT students have more behavioural/disciplinary problems while principal A feels that the NT students exhibit fewer behavioural/disciplinary problems when compared to the other students. There is no difference in the conceptions of the future orientation of the NT students with all ten principals identifying the ITE as the next level of education for the NT students. Principal B, A and K had lower expectations for the NT students while the rest held no difference in terms of expectations for the NT students as compared to the other students.

The relationships between the Nurturer and the “Management” category

The Nurturer principal is one who is above all pastoral. Principal S feels passionately about his approach to dealing with one of his NT students. He says:

by extending our care to this person it will help. And it gives us some time to understand him. So I'm not quick to dismiss the child and say it is beyond hope. To me, I feel it's a lack of home support so I have to be very patient. So I have to do some balancing but the impact is, is this boy affecting the class? I think by extending our care to this person it will help. And it gives us some time to understand him.

The Nurturer believes in the provision of opportunities to develop the students. This characteristic can be seen in all ten principals and all of them exhibit this in varying degrees in the different student management processes in the school. To the Nurturer the student is at the centre of the educational processes and the focus and belief is that every child possesses talents. Development of the students is the mission. The worth and self-esteem of the students is uppermost in all decisions. As principal B says, “Our mission is to have confident team players”. She uses a cross-department collaboration project approach to develop the students' competence and to “give them a purpose”; in addition the projects are “packaged to become meaningful and purposeful for them.” The focus is on the provision of opportunities to develop the student holistically. To the Nurturer, the

Ministry guidelines are there to assist the schools in the educational processes and although these guidelines may seem controversial at times to them, and at times antagonistic to their own belief system or paradigm, they nevertheless find ways to circumvent them in order to provide the necessary opportunities to meet the needs of the students.

To do this the Nurturer adapts the management processes to selectively engage the NT students. When it comes to streaming and laterally transferring the NT students, most of the principals, besides following closely the guidelines provided by the Ministry, also adapt by considering other factors such as teachers' recommendations and opinions. Principal B sees her students as angry, confused, unhappy and envious of the academically stronger students when they come to school, mainly because they have poor role models at home. Thus she sees that she has a need to adapt to the reality of the situation and do some "damage repair for NT kids – giving them a sense of purpose to feel fulfilled." Therefore, she engages their hearts prior to engaging their minds. Academic development for the NT is not the first priority: rather, it is character development. The number of subjects offered to the NT students again is an adaptation to the intake. In the schools studied, usually six to seven subjects are offered to the Secondary Three NT students with the exception of only five offered at school Y. This was based on the assessment by the principal on the ability of their intake to cope with the number of subjects.

The Nurturers selectively engage the NT students by customising and matching their management approaches. As elaborated by principal G, "Normal Tech students will be given this special Elective Module (EM) customised for their learning and we have a Secondary Three module that continues to Secondary Four based on their feedback and customised for them." Similarly in school C, a customised Elective Module on car repair is provided for the NT students based on their interests. These EMs are not provided to the students in the other streams. In deploying teachers to teach the NT students the principals place a major consideration on teachers with the ability to handle such students. They need to be more patient, caring and able to manage and relate to the NT students.

The ability of the teachers to produce academic results was not the consideration as highlighted by principal G, who claimed, “The guiding underlying principle we operate is that any teacher who takes the Normal Tech must be caring. Not so much academically strong.” The criterion in this school is caring and teachers with this quality are then matched with the NT classes. According to principal G, “Particularly the appointment of the Form Teacher is based on a caring teacher and a strong teacher in classroom and pupil management not so much instructional programme.” Enrichment programmes offered were based on the principal’s perception of what was relevant and useful to the NT students for their future. The number of enrichment programmes varied from school to school and these are usually customised and matched to the needs of the students

Principal K, besides customising the Literature subject for the NT students to make learning fun, even “responded to their request to start the National Police Cadet Corps (NPCC) and after a term they did not want to leave anymore. They were happy in NPCC and I saw them rise to be leaders in NPCC.” Principal K also has remedial classes in English and Mathematics for her NT students and this makes them see that they are “not different from the others that they have an easier timetable, so when they compare with their friends in the other schools why they are going home so late when their friends in other schools are going home early, well, we tell them, ‘we care about you more.’”

All ten principals claimed that NT students within their schools are provided with equal opportunities for leadership as are all other students, and there is no discrimination. However, in the case of school Q, the principal goes on to qualify that to be the Head of a student body the student must also be strong academically. In school T, “it’s equal opportunity for all. They are not segregated or discriminated against in anyway.” Even the head of the Sepak Takraw team is from the NT stream in school T. In school H, the principal promotes the philosophy that everybody is a leader and “if you are able to perform you do it. You take the position that is there. If there is no position my teachers are expected to create some for them. So it is regardless of streams.” In school Y, the principal proudly proclaims that the Head Prefect is chosen by the students and “last year, the Normal Technical girl won the hearts of the students and she has been doing very

well. Her two Vice-Heads are from the Express stream. The teachers also voted for this girl.” In school G and school Y the pinnacle of the student leadership was held by students from the NT stream. In fact, principals G, Q and K claimed that NT students in their school are treated better than the rest as they have special programmes organised for them. Perceptions of unequal treatment arose mainly from the fact that certain teachers tended to pick on them. However, it was more on an individualised case than a cohort perception or feeling.

CONCLUSION

The study of principals’ management of Normal Technical students in Singapore neighbourhood secondary schools resulted in the identification and discussion of a threefold typology of the principals. The full discussion of how each type relates to each of the three categories further enhances the grounded theory of Selective Engagement. This in turn demonstrates how all the four propositions – (1) Principals selectively vary the way they manage their NT students; (2) The paradigms and conceptions regarding streaming and the NT students that the principals possess influence the way they manage their NT students; (3) The theory of Selective Engagement emerges from the process of the three main inter-linked categories - Paradigms, Conceptions, and Management; and (4) The extent of Selective Engagement varies amongst the principals in the different management areas, forming the whole structure of the theory mentioned in Chapter Four, are inter-linked. The generation of a typology in turn facilitates a grounded theory of how principals in neighbourhood secondary schools in Singapore manage their Normal Technical students.

CHAPTER SEVEN

CONCLUSION

INTRODUCTION

Since the creation of the Normal Technical (NT) stream, Singapore schools have faced a number of challenges with regards to the management of these students both at the classroom and school level. The NT streaming and the NT students have aroused a number of criticisms of the education system which have even resulted in the production of two locally produced films which subtly criticised the system and tried to champion the plight of these students. The Ministry of Education is well aware that streaming has caused much unhappiness. Although it has merged the EM1 and EM2 streams in the Primary schools it has continued to retain the EM3 stream, which is the slowest stream in the Primary schools, to the dismay of many parents and educationists.

Secondary School principals with NT streams have been managing these students since 1994 and many have explored ways to provide an appropriate educational environment for them. On the other hand, the Ministry of Education (MOE) is constantly looking to enhance the learning experiences of the Normal Course students. Starting in 2008, additional resources, both human and financial, will be given to schools which have more Normal Course students. These new initiatives may help students in the Normal Course engage better in their learning and succeed in school and in post-secondary education. For example, a new Head of Department (HOD) for Normal Technical (NT) will be created for schools with at least 20% of their student population comprising NT students (MOE, 2007c). The MOE will provide further training for teachers who are passionate about teaching NT students. The MOE will collaborate with the National Institute of Education (NIE) and the Institute of Technical Education (ITE) to provide customised training that will equip these teachers with in-depth skills for teaching and relating to NT students. The programme will include pedagogical skills for engaging NT students, classroom management as well as counselling skills.

Interest in the NT stream and students have always been high, but there is a dearth of research in this area. Many studies of ability grouping have been conducted overseas and although the findings have been valuable, the cultural contexts in which these have been carried out are different from that in Singapore. A study which focuses on the Normal Technical (NT) students in Singapore is therefore a valuable undertaking. Furthermore, in the review of literature on streaming and ability grouping, the researcher could find no previous work on how principals manage the lowest ability students in their schools.

This last chapter of the thesis is presented in six sections. They are: (1) Summary of the main findings; (2) The Theory of Selective Engagement; (3) Transferability (generalisability) of the research findings; (4) General implications of the research findings; (5) The implications of the findings for the development of policies; and (6) The implications of the findings for practice. Throughout the chapter, areas for future research are proposed.

SUMMARY OF THE STUDY

The aim of the research reported in this study is to develop a theory on principals' management of Normal Technical students, that is, the slowest stream students, in Singapore Secondary Schools. The study was guided by three main research questions: (1) What are principals' perceptions of streaming as a way of organising students in Secondary Schools?; (2) What perceptions and expectations are held by principals of neighbourhood Secondary Schools regarding NT students?; and (3) Do the school principals' perceptions and expectations of NT students influence their school management with regards to streaming and the provision of opportunities for curricular and co-curricular programmes? The significance of the study is enhanced by the fact that there has been little, if any, study of the Normal Technical stream students in Singapore, despite the fact that the Ministry is constantly reviewing the support given to the NT students.

Normal Technical students form roughly 22% (usually 2 out of 9 classes of Secondary One intake per year) of the student intake each year into typical neighbourhood

Secondary Schools. This is quite a sizeable number. Thus the challenges associated with managing these students are numerous. Principals have to constantly find ways to manage them as their needs and make-up can be somewhat different.

This study focuses on a small group of neighbourhood Secondary School principals. The reason to opt for an in-depth study of the participants was to secure rich data, and more importantly, to communicate the necessary information in a coherent manner. Within this context, the study seeks to develop a theory on how neighbourhood Secondary School principals manage their Normal Technical (NT) students.

The outcome of this study should be of relevance to the Ministry of Education as they constantly review the approaches to handling the NT stream students. The findings may also be of interest to principals who want to explore ways to enhance their interactions with, and provisions of, educational opportunities for these students.

In order to understand the phenomenon in-depth, a qualitative approach was deemed the most appropriate. This approach allowed the researcher to interact closely with the participants by way of semi-structured interviews. Data collection lasted for a period of approximately 36 months, beginning from 21 May 2004. The three principles of Symbolic Interactionism, discussed in Chapter Three, are crucial in exploring the phenomenon of this study and, ultimately the generation of the grounded theory of Selective Engagement. The procedures of grounded theory allow the researcher to collect, collate and analyse the data systematically to develop the theory (Strauss & Corbin, 1990, p. 23 and Lincoln & Guba, 1985, p. 188). By relying on the data generated by the participants, this researcher has aimed, in both the capturing of their views and his interpretation, to avoid personal bias as much as possible.

The sample (10 participants) was drawn from Singapore's neighbourhood Secondary Schools. It consists of 7 female and 3 male participants from different age groups, ranging from mid-forties to late-fifties (Appendix A). In addition, the varying years of principalship among the participants in this study provide a rich variety to the study, making possible the development of a more dense theory.

Three pilot interviews were conducted to ensure that the interview questions were appropriate and would generate rich data for analysis. The initial interview questions were formulated from the literature review and refined as the study progressed.

Semi-structured interviews made the task of achieving theoretical saturation easier. This type of data collection is a form of non-probability sampling, in which the objective of developing theory guides the process of sampling and data collection. This allows the researcher to analyse the initial data and then decide how to proceed from there in line with theory development (Janesick, 1994). The interview schedule enabled the researcher to decide the questions and comments to use in order to lead the interviewee toward the interviewer's objectives (Gall, Gall, & Borg, 1999, p. 132).

THE THEORY OF SELECTIVE ENGAGEMENT

The theory of Selective Engagement that emerges from this study is as follows. It is made up of a typology consisting of three types of participants, namely: (1) 'Realist/Pragmatist'; (2) 'Innovator/Improviser' and (3) 'Nurturer'. The emergence of the typology and the categories generated from the grounded data lead to the theory of Selective Engagement. All three types exhibit to a different degree the characteristics of the different modes of management although for each type there is a dominance of one of the characteristic features. All three types of principals also exhibit common management approaches in their engagement and this is represented in the overlap of the three typologies (Figure 15).

Principals may adhere to different paradigms of streaming – that is, for or against, or even modification of it. To varying degrees, this affects the way they selectively engage their NT students within the school. The perceptions of these principals of the characteristics and expectations of their NT students also affect the way they selectively engage their NT students. However, whether one holds to a particular paradigm of streaming or perceptions of the NT students' characteristics does not impact on whether they are a Realist/Pragmatist, Innovator/Improviser or Nurturer. All principals have some elements of the three typologies - Realist/Pragmatist, or Innovator/Improviser, or Nurturer, - depending on the areas of management being

considered – but one predominant element labels them one of a type. Thus a Realist/Pragmatist can also be an Innovator/Improviser to a degree. Principals who had lower expectations of the NT students tended to push them less hard, especially in the academic areas. Also, because they have lower expectations of the students, these principals allowed their own paradigms and conceptions to limit the ways they engage their NT students. Thus these principals provided fewer programmes for the NT students, as their beliefs led them to a restricted provision.

The theory of Selective Engagement is supported by three categories. They are: (1) Paradigms, (2) Conceptions, and (3) Management. Each category is in turn supported by its respective sub-categories and concepts (Figure 14).

As the participants come from schools with different school cultures, it is not surprising that the extent of their selective engagement also varies. The word ‘engagement’ was captured as an *in-vivo* code during the interviews. The importance of *in-vivo* codes rests with their ‘analytic usefulness’ and ‘imagery’ (Strauss, 1987, pp. 33-34). The grounded theory of Selective Engagement emerged when all participants began to display engagement selectively in each of the categories together with their respective concepts. In the ‘Management’ category, the participants selectively engage their students through innovating, adapting, abiding or equalising. Principals B, T and H are the most innovative while Q is the most abiding, thus making her a very strong Realist/Pragmatist. Their modes of engagement are evident in all the eight areas of student management – streaming/lateral movement, monitoring, deployment of resources, subject offerings, enrichment programmes, managing discipline, leadership opportunities and treatment of students - which are linked to the categories and concepts that emerged from the study. This in turn provides strong support for the grounded theory of Selective Engagement in this study.

The theory of Selective Engagement is presented in three main parts, consisting of the story line followed by the various propositions, one of which proposes a typology of participants. The four propositions - (1) Principals selectively vary the way they manage their NT students; (2) The paradigms and conceptions regarding streaming and the NT students that the principals possess influence the way they manage their NT students; (3) The theory of Selective Engagement emerges from the process of the

three main inter-linked categories - Paradigms, Conceptions, and Management; and (4) The extent of selective engagement varies amongst the principals in the different management areas - aim to provide a unique body of knowledge (Lincoln & Guba, 1985, p. 38) to describe the emergent theory in this study. The derivation of the theory of Selective Engagement is represented by Figures 17 and 18.

Another important part of this study is the summary of the literature on ability grouping of students. In particular, a similar grounded theory study by Chalmers (1998) in Western Australia - on how teachers manage their classroom work when they are placed in a position of having a student with a severe or profound intellectual disability placed in their classroom (the antithesis of ability grouping), is noteworthy. Qualitative methods of data gathering and analysis, proposed by 'grounded theorists', were employed by Chalmers. Chalmers and O'Donoghue (2002, p. 7), state that these research methods are consistent with the symbolic interactionist view of human behaviour (Chenitz & Swanson, 1986), offering a comprehensive and systematic framework for inductively building theory (Strauss & Corbin, 1990).

Figure 17 Framework of 'Selective Engagement'

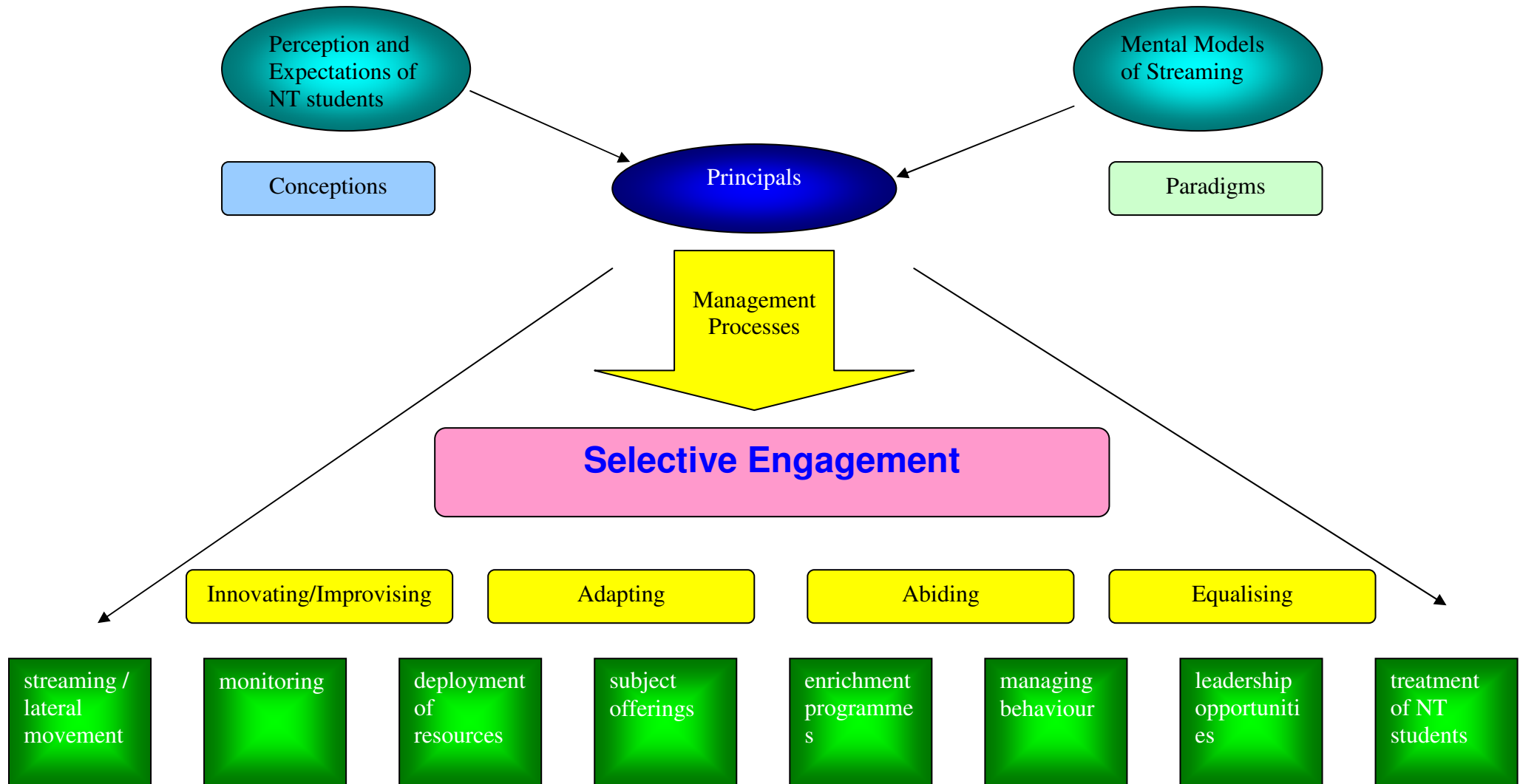
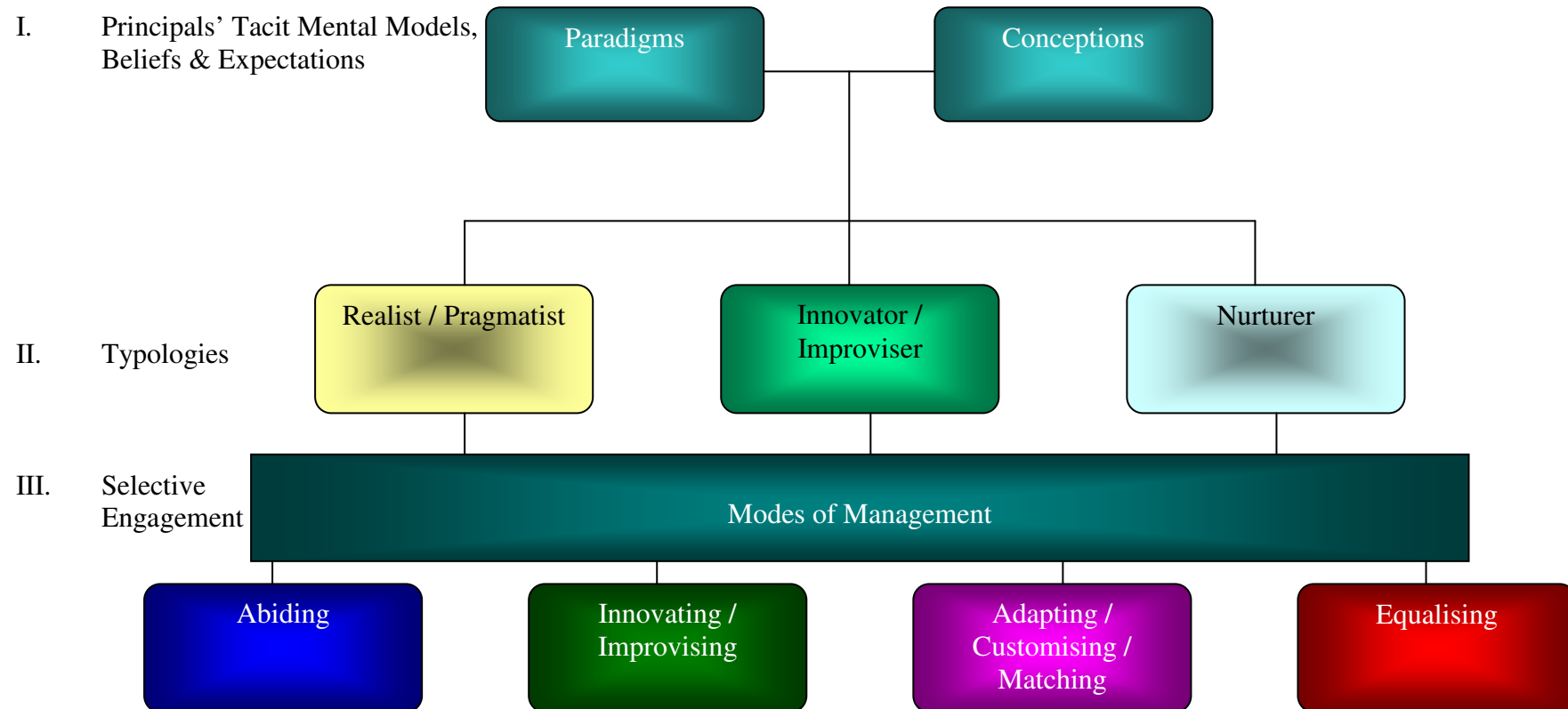


Figure 18

Theory of 'Selective Engagement'



THE RESEARCH FINDINGS AND THEIR TRANSFERABILITY (GENERALISABILITY)

The findings of this study are not generalisable in the way a quantitative researcher might expect. The research approach and methodology together with the small sample size of ten principals make it more appropriate to use the term transferability instead of generalisability (Lincoln & Guba, 1985). Punch (1998, p. 261) also states that *transferability* is a word that is preferred to generalisability in a qualitative research study. The theory of selective engagement is transferable to the situations that give rise to the specific sets of actions and interactions pertaining to the phenomenon which was the focus for the study. This is consistent with the strategy of 'modified inductive analysis' (Schwartz & Jacobs, 1979) utilised to set the boundaries for the study. According to Stainback and Stainback (1984), in 'modified inductive analysis' the researcher limits the number of cases or sites to be investigated, making no claim that the substantive theory to emerge from the research is inclusive beyond the defined locations.

Although the findings of the study pertain directly to the group of principals studied, they may have some applications for the other principals in schools with Normal Technical students. Thus, the theory of selective engagement has generalisability in the following sense:

Insofar as theory that is developed through this methodology is able to specify consequences and their related conditions, the theorist can claim predictability for it, in the limited sense that if elsewhere approximately similar consequences should occur.

(Strauss & Corbin, 1994, p. 278)

However, it is also possible that the findings of the study will have applicability to, and relevance for, other settings and contexts, and perhaps even to other phenomena or fields of study. On this matter, Lincoln and Guba's (1985) notion of 'transferability' is instructive. They contend that unlike researchers operating in the positivist tradition who strive for high levels of 'external validity', those who operate in the 'natural paradigm':

...cannot specify the external validity of an inquiry; he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility. (p. 316)

In the present study emphasis was placed on the concept of ‘transferability’ and the associated responsibility for providing an accurate and comprehensive ‘data base’ that would make transferability judgements possible on the part of potential ‘appliers’ (Lincoln & Guba, 1985). For this reason, the presentation of the theory of ‘selective engagement’ is both conceptually ‘dense’ and interlaced with relevant extracts from the data.

The theory of selective engagement can also be ‘generalisable’ in the sense that people can relate to it and perhaps gain an understanding of their own and others’ situations. That is to say, the theory may also have ‘reader or user generalisability’. In this regard, the presentation of the theory of selective engagement may encourage principals and other readers, both in Singapore and elsewhere, to reflect on their own experience and may result in them deriving new insights, understandings and meanings. Viewed from this perspective, the findings of this study have a reflective capacity both for those readers who have points of contact with the substantive area which was the particular focus of this study and for others who judge that the theory has implications for their own lives.

IMPLICATIONS OF THE RESEARCH FINDINGS FOR THE DEVELOPMENT OF THEORY

The current study offers seven possibilities for future research arising from it. **First, future studies can focus on the development of a grounded formal theory on the management of Normal Technical students.** The theory of selective engagement, which was the major finding to emerge from the research, may have implications for the development of further theory in the substantive area which was the focus of this particular study, namely, the field of education which pertains to management of Normal Technical students. This is consistent with the claim made by Strauss and

Corbin (1990) that researchers who develop theory which is grounded in the actions and interactions of people within substantive areas of study:

...hope that their theories will ultimately be related to others within their respective disciplines in a cumulative fashion, and that the theory's implications will have useful applications. (p. 24)

The substantive theory of selective engagement may provide a stimulus for the development of 'grounded formal theory' (Strauss & Corbin, 1994, p. 281). In taking up the suggestion made by Strauss (1987, pp. 306-311) that combining the data and concepts from a multitude of substantive areas can lead to the development of formal (or as is more usually said, 'general') theory, it is possible that the findings of the present study will be used to generate theory beyond the specific focus of selective engagement for Normal Technical students. Such development would be consistent with the call made by Glaser and Strauss (1967) for substantive theory to be used as a "springboard or stepping stone for the development of grounded formal theory" (p. 79).

Second, besides contributing to the current literature on educational management, the categories, processes and concepts which comprise the theory of selective engagement provide the impetus for further research on 'educational management' in schools without Normal Technical students. The findings of this study also have relevance for the theoretical literature on principals' 'management'. While the study focused specifically on Normal Technical students, the theory of selective engagement might be of some use in illuminating how principals approach the task of managing their students in other contexts. In particular, the typology of principals which emerged from this study might provide an insight into how different 'types' of principals go about the task of managing ethnic minority students, Special Educational Needs (SEN) students or even students for whom the medium of instruction is an additional language.

This study is a contribution towards addressing the research deficit which exists in this regard and the findings may serve as a springboard for further research in this particular area of selective engagement.

Dimmock and Walker (2004) regard a key initial responsibility of strategic leadership to be the creation of a holistic school design which is formulated around a coherent set of values with the key feature of learning for all as the centrepiece. It is through such design that other concerns, such as an emphasis placed on a learning-centred and learner-centred approach that focuses on the core technology of curriculum, teaching and learning, and an approach that is responsive to the demographic, social and cultural composition of multiethnic societies, can be addressed (Dimmock, 2000). An area for further research might also focus on how school leaders in Singapore schools create a holistic school design that enables learning-centred and learner-centred approaches in a multi-cultural, multi-ethnic context in schools where streaming is an accepted government policy.

Third, this study provides a valuable contribution to the literature on ability grouping or streaming in an Asian context. The theory of selective engagement contributes to the theoretical literature on streaming or ability grouping in other countries. There is so much more that can be researched with regards to streaming, and particularly the labelling effects on students in the context of Singapore where there is a scarcity of research.

Fourth, it contributes to the scant literature on the management of academically weak students. While the theory of selective engagement may not be directly applicable to situations other than in schools with Normal Technical students, it might provide new insights, understandings and meanings for those who are concerned with the academically slower students in other educational environments. In the push towards more school-based management in Singapore schools, societal cultures characterised by a concentration of power, such as in Singapore, result in the curtailment of principals' influence. Dimmock (1993) argues that school-based management affects the quality of the curriculum. The principal is responsible for using available resources in the most efficient and effective way to secure the best possible learning outcomes. The achievement of high student learning outcomes is dependent on the school providing a quality curriculum for every student. An area for future research might focus on how school-based management affects the NT students' learning outcomes.

Research on the causal effects of principal's leadership behaviour on student achievement in general is inconclusive (Hallinger, Bickman & Davis, 1996; Witziers, Bosker, & Kruger, 2003). The review of the relationship between principal leadership and student achievement (Hallinger & Heck, 1998, p. 186) supports the belief that principals exercise a measurable, though indirect effect on school effectiveness and student achievement and while this indirect effect is relatively small, it is statistically significant and meaningful. However, there is still no consensus as to the means by which principals achieve impact on school outcomes. On the other hand, Nettles and Herrington (2007, p. 732) citing the study by Nettles and Petscher (2006) identify a significant relationship between the implementation practices of principals and student reading achievement. Other significant relationships were found among student subgroups, including students with disabilities and students with limited English proficiency. Research could be conducted to ascertain principals' leadership and management approaches in schools with high achievement in learning outcomes among NT students, which is also a subgroup within the school.

Fifth, this study presents a picture of the culture in which NT students function within the school as a result of the distinct labelling that exists in the Singapore neighbourhood secondary school. Within the school there exist three different subcultures, namely, the Express, the Normal Academic and the Normal Technical. Society also views the NT students differently. While this study embraces school organisational subcultures, Walker and Dimmock (2002) see the importance of societal culture in general influencing curriculum, teaching and learning, leadership and school-based management. They argue for greater cultural sensitivity concerning school reform and improvement. Future research could focus on how societal culture shapes and influences the way principals manage the NT students. In different societal cultures leadership and management may be understood differently. Singapore's school cultures, like its national culture, are a response to survival and achievement-oriented needs. In Singapore, the impact of societal culture upon the education practices of school leaders, in neighbourhood schools with NT students, has yet to be explored. This is echoed by researchers such as Cheng (1995) who feels that, "the cultural element is not only necessary, but essential in the study of educational administration" (p.99).

Furthermore, Dimmock (2002) asserts that educational policy, leadership, and management as a field of study has tended to neglect the importance of societal culture in an era of globalisation. Future research could look into how school culture impacts the way the NT students are managed. This stems from the fact that the ten schools included in this study have distinct and varied histories and therefore school cultures. Another possible research agenda might focus on the interactions between societal culture and the sub-cultures of the different streams within the school and how these affect the principals' management of students in these streams.

Sixth, an area for future research could focus on how the values of principals are linked to their selective engagement of the NT students in the Singapore context.

The influence of principals' values on the perception and management of NT students is another possible area of study. Law, Walker and Dimmock (2003) showed that values influence how Hong Kong principals perceive and solve problems and that in general, how they approach problems coheres with their dominant values. They also found that value properties and personal and organizational characteristics moderated the influence of values on problem solving. The present study also shows that principals in the ten schools studied exhibited selective engagement and some management approaches were more dominant in some principals than in others.

Seventh, further research could focus on teacher 'types' so that teachers themselves would benefit from the knowledge of their own preferences and predispositions, which, in turn might enable them to be more effective teachers and classroom managers in managing the NT students.

IMPLICATIONS OF THE RESEARCH FINDINGS FOR THE DEVELOPMENT OF POLICY

Substantive theory which is grounded in the actions and interactions of individuals can be relevant and possibly influential either to the 'understanding' by policy-makers or to their direct action (Strauss & Corbin, 1994). In the context of the present study, the theory of selective engagement can serve to increase the 'understanding' of policy-makers about how principals manage their NT students in neighbourhood

schools. As a consequence of this increased ‘understanding’, it is conceivable that policy development in the field of selective engagement will also be influenced by the findings of this study. This could mean reviewing the allocation of resources such as money and staff, NT class size, number of NT classes per school and available subject options.

Keogh (1990) asserts that “policy-makers must be willing to subject policy to testing” (p. 186). In the subject of selective engagement this would require policy-makers to examine theory and other research findings to increase their understanding of the impact of their policies, especially on those who are directly affected by the policies, in particular, principals and students. An examination of the theory of selective engagement might be of some use in alerting policy-makers to the impact that ‘engagement’ has in the particular circumstances which provided the context for the present study. The findings of the present study, it is hoped, will provide thought for policy-makers to review the practice of streaming particularly with respect to the effects of labelling on the students and its effects on their long term futures. It is precisely in Singapore which is entirely dependent on its human resources, that streaming, which appears as a solution to finding the most able people to manage the economy, may have undue and unwarranted consequences in the long term.

IMPLICATIONS FOR PRACTICE

The theory also has a number of implications for practice. **First, the study has practical applications in relation to management and administration as it provides some valuable and practical ideas for the successful management of NT students.** The contention that principals tend not to make radical changes to their existing management practices in their engagement of the NT students should be instructive to future school leaders faced with managing this situation in the future. In particular, it should provide reassurance to those who might otherwise consider that the successful management of NT students requires the implementation of wholesale changes to their school practices. It is also reassuring to know that principals are mostly nurturing and can become progressively more innovative and improvising about engagement when provided with the opportunities.

Dimmock and O'Donoghue (1997) highlight the need to realise that each principal's leadership is a unique phenomenon. How each responds and behaves is a symbiosis of policy frameworks and associated expectations, principles and theories underlying best practices, individual abilities, and meanings imparted to all of these derived from both current and life history experiences. In particular, the theory has capacity to assist principals to gain an appreciation of the different ways in which they can engage their NT students. Also, an understanding of the processes and stages of Selective Engagement could assist principals to support teachers who are called upon to teach NT students in their classes. By understanding themselves in terms of their predominant 'type' (as identified in the present study), they may better balance the way they deploy their teachers to classes and streams in the schools.

Second, the theory of Selective Engagement also has implications for practice in the area of school leadership training. The theory of selective engagement could play some role in addressing this by informing principals who might find themselves managing schools with NT students in the future. A real emerging problem in the school scene is the fact that those who come into teaching are mainly university graduates – students who in their secondary school life were from either the Express stream, or the Independent Schools and the Special Assistance Plan Schools or other very academically strong schools – and these are the academically bright students. As such many of these young graduates who enter the teaching profession and finally become school leaders have never studied in a neighbourhood secondary school and thus have no experience interacting with the NT students while they were in school. They, therefore, have no idea of what the NT students are like. The theory of selective engagement would be useful in helping them understand the NT students better and in providing them with some practical ideas of managing them.

Finally, the theory may also make a contribution in the arena of pre- and in-service teacher training and education. Currently, with so much emphasis on the Normal Course, findings from relevant research will be required to inform the development of appropriate training programmes for teachers such as pre- and in-service training courses to address the problems and issues associated with Normal Technical students. Theories like that of Selective Engagement, which are grounded in the actions of principals, should be useful in this regard. Currently, the perceptions

of the NT students are still rather negative and many teachers prefer not to teach these students whenever they can avoid doing so. The research findings in this study of the paradigms, student characteristics and management processes can provide teachers with a better understanding of the NT students, to view them in a more positive light and to engage them more effectively.

CONCLUSION

The grounded theory of Selective Engagement that emerges from this study offers an explanatory insight into how principals in neighbourhood Secondary Schools perceive streaming as an organising principle and practice, how they view the weakest students in the slowest stream known as the Normal Technical (NT), and how they manage these students. The *thick description* of the theory suggests implications for the further development of other theories and policies. It is proposed that the combination of both theory and its implications addresses the question of how principals in neighbourhood Secondary Schools in Singapore manage their NT students. Although a focus of this study is on the NT students, the findings might well apply to students in the other streams, such as the Express and the Normal Academic. Similarly, the study may have relevance for other principals in schools which have slower streamed students. The theory of Selective Engagement is offered as an explanatory theory as to how the participant group of principals manage their NT students in Singaporean Secondary Schools.

REFERENCES

- Abraham, J. (1989). Testing Hargreaves' and Lacey's Differentiation-Polarisation Theory in a Setted Comprehensive. *British Journal of Sociology*, 40 (1), 46-81.
- Aitken, M., & Longford, N. (1986). Statistical Modelling Issues in School Effectiveness Studies. *Journal of the Royal Statistical Society, Series A*, 149 (1), 1-43.
- American Psychological Association (2001). *Publication Manual of the American Psychological Association* (pp. 207-281), 5th ed., Washington D.C: American Psychological Association.
- Aron, R. (1970). *Main Currents in Sociological Thought*. Harmondsworth: Weidenfeld and Nicolson.
- Ary, D., Jacobs, L. C., & Razavieh, A. (2002). *Introduction to Research in Education*, 6th ed., Wadsworth/Thomson Learning.
- Bak, J., Cooper, E., Dobroth, K., & Siperstein, G. (1987). Special class placement as labels: Effects on children's attitudes toward learning handicapped peers. *Exceptional Children*, 54 (2), 151-155.
- Ball, S. J. (1981). *Beachside Comprehensive: A case-study of secondary schooling*, Cambridge: Cambridge University Press.
- Barker, B. (2005). Transforming schools: illusion or reality? *School Leadership and Management*, 25 (2), 99-116. Retrieved May 28, 2008, from <http://www.swetswise.com/eAccess/viewToc.do?titleID=182054&yevoID=1951368>
- Barker, B. (2007). The leadership paradox: Can school leaders transform student outcomes? *School Effectiveness and School Improvement*, 18 (1), 21-43. Retrieved June 22, 2008, from <http://www.swetswise.com/eAccess/viewToc.do?titleID=182031&yevoID=1950044>
- Barker Lunn, J. C. (1970). *Streaming in the Primary School*, Slough: NFER.
- Bartholomew, H. (2001, September 112-15). *Positioning Students in Setted Mathematics Groups*. Paper presented at the Annual Conference of the British Educational Research Association, University of Leeds, UK.
- Bayliss, V. (1998). *Redefining School*. London: Royal Society for the Encouragement of Arts, Manufactures and Commerce.

- Becker, H. S. (1996). The epistemology of qualitative research. In R. Jessor, A. Colby, & R. A. Shweder (Eds.), *Ethnography and Human Development: Context and Meaning in Social Inquiry*, (pp. 53-71), Chicago: University of Chicago Press.
- Berends, M. (1995). Educational Stratification and Students' Social Bonding to School. *British Journal of Sociology of Education*, 16 (3), 327-351.
- Biddle, B. J., & Anderson, D. S. (1986). Theory, methods, knowledge, and research on teaching. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (pp. 230-252), 3rd ed., New York: Macmillan.
- Blumer, Herbert. (1969). *Symbolic Interactionism: Perspective and Method*, New Jersey: Prentice-Hall Inc.
- Boaler, J. (1997a). Setting, Social Class and the Survival of the Quickest. *British Educational Research Journal*, 23, 575-595.
- _____. (1997b). When Even the Winners are Losers: Evaluating the experiences of "top set" students. *Journal of Curriculum Studies*, 29, 165-182.
- _____. (1997c). *Experiencing School Mathematics: Teaching styles, sex and setting*, Buckingham: Open University Press.
- Boaler, J., William, D., & Brown, M. (2000). Experiences of Ability Grouping – Dissatisfaction, polarization and the construction of failure. *British Educational Research Journal*, 28 (5), 631-648.
- Bogdan, R. G., & Biklen, S. K. (1998). *Qualitative Research for Education – An Introduction to Theory and Methods*, 3rd ed., Boston, MA: Allyn & Bacon.
- Borg, W. R., & Gall, M D. (1983). *Educational Research – An Introduction*, 4th ed., Longman Inc.
- Burgess, R.G. (1986). *Education, Schools and Society*, London: Batsford.
- Burns, R. (1987). Steering Groups, Levelling Effects, and Instructional Pace. *American Journal of Education*, 96 (1), 24-56.
- Byrne, B. M. (1988). Adolescent Self-Concept, Ability Grouping and Social Comparison: Re-examining academic track differences in high school. *Youth and Society*, 20, 46-67.
- Carroll, J. B. (1963). A Model of School Learning. *Teacher College Record*, 64, 723-733.
- Chalmers, R. F. (1998). *Selective Adaptation: How teachers manage their work in "Inclusive" classrooms*, Doctoral dissertation, University of Western Australia.

- Chalmers, R., & O'Donoghue, T. (2002). *Inclusivity, the Disabled Child and Teacher Strategies: The Development of a Theory*, Centre for Inclusive Education Monograph Series, Number 4 – January 2002, The University of Western Australia.
- Chang, A., Goh, S. C., Moo, S. N., & Chen, A. Y. (1997). *Report on Motivation and Classroom Behaviour of Normal Technical Students*, Singapore Centre for Educational Research, National Institute of Education.
- Chang, A. S. C. (1990). *Streaming and Learning Behaviour*. Paper presented at the 48th Annual Convention of the International Council of Psychologists, organized by the International Council of Psychologists at Tokyo, Japan, 14-18 July 1990.
- Chapman, J. W. (1988). Learning Disabled Children's Self-Concepts. *Review of Educational Research*, 58, 347-351.
- Cheng, K. M. (1995). The neglected dimension: Cultural comparison in educational administration. In K. C. Wong & K. M. Cheng (Eds.), *Educational Leadership and Change: An International Perspective* (pp.87-102), Hong Kong: Hong Kong University Press.
- Chenitz, W. C., & Swanson, J. M. (1986). Qualitative research using grounded theory. In W. C. Chenitz & J. M. Swanson, *From Practice to Grounded Theory: Qualitative Research in Nursing* (pp.3-15), California: Addison-Wesley.
- Christiansen, C. (1992). Deviant, disabled or different: The politics of labelling. *Australian Disability Review*, 3, 5-12.
- Codling, D. (1975). *Slow Learners in the Secondary School*, Birmingham: Birmingham Association of the National Union of Teachers.
- Corbin, J. (1986). Coding, writing memos and diagramming. In W. C. Chenitz & J. M. Swanson (Eds.), *From Practice to Grounded Theory: Qualitative Research in Nursing* (pp. 102-20), Menlo Park, CA: Addison-Wesley.
- Corbin, J., & Strauss, A. (1990). Grounded theory method: procedures, canons, and evaluative criteria. *Qualitative Sociology*, 13, 3-21.
- Corbin, J., & Strauss, A. (1998). Basics of Qualitative Research – Techniques and Procedures for Developing Grounded Theory, 2nd ed., Sage Publications.
- Creemers, B. P. M. (1994). *The Effective Classroom*, London: Cassell.
- Creswell, J. W. (1994). *Research Design: Qualitative and Quantitative Approaches*, Thousand Oaks, CA: Sage.

- Cuban, L. (1990). A Fundamental Puzzle of School reform. In A. Lieberman (Ed.), *Schools as Collaborative Structures: Creating the future now*, New York: Falmer Press.
- Cuttance, P. (1992). Evaluating the Effectiveness of Schools. In D. Reynolds and P. Cuttance (Eds.), *School Effectiveness: Research, policy and practice*, London: Cassell.
- Dar, Y. (1985). Teachers' Attitudes towards Ability Grouping: educational considerations and social and organizational influences. *Interchange*, 16 (2), 17-38.
- Denzin, N. K. (1989). *The Research Act*, 3rd ed., Englewood Cliffs, NJ: Prentice- Hall.
- Denzin, N. K. (1994). Triangulation in educational research. *The International Encyclopaedia of Education*, 2nd ed., 2, 6461-6466.
- Department for Education and Science (1989). *Behaviour in Schools (The Elton Report)*, London: HMSO.
- Devine, D. (1993). A Study of Reading Ability Groups: Primary school children's experiences and views. *Irish Educational Studies*, 12, 134-142.
- Dimmock, C. (1993). School-based management and linkage with curriculum. In C. Dimmock (Ed.), *School-Based Management and School Effectiveness* (pp. 1-21), Routledge, London and New York.
- Dimmock, C. (2000). *Designing the Learning-Centred School. A Cross-Cultural Perspective*, Falmer Press, London and New York.
- Dimmock, C. (2002). Educational Leadership: Taking Account of Complex Global and Cultural Contexts. In A. Walker & C. Dimmock (Eds.), *School Leadership and Administration* (pp. 33-44), RoutledgeFalmer, New York and London.
- Dimmock, C., & Donoghue, T. A. (1997). *Innovative School Principals and Restructuring: Life History Portraits of Successful Managers of Change*, Routledge, London and New York.
- Dimmock, C., & Walker, A. (2004). A new approach to strategic leadership: Learning centredness, connectivity and cultural context in school design. *School Leadership and Management*, 24 (1), 39-56.
- Douglas, J. W. B. (1964). *The Home and the School*, London: MacGibbon and Kee.
- Drever, E. (1995). *Using Semi-Structured Interviews in Small-Scale Research: A Teacher's Guide*, The Scottish Council for research in Education.

- Erickson, F. (1986). Qualitative methods in research on teaching. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (pp. 119-161), 3rd ed., New York: Macmillan.
- Essen, J., Fogelman, K., & Tibbenham, A. (1978). Some Non-Academic Developmental Correlates of Ability-Grouping in Secondary Schools. *Educational Studies*, 5 (1), 83-93.
- Fairbanks, C. (1992). Labels, literacy, and enabling learning: Glenn's story. *Harvard Educational Review*, 62 (4), 475-493.
- Fielding, N. G., & Fielding, J. L. (1986). *Linking Data*, Newbury park, CA: Sage
- Flick, U. (1998). *An Introduction to Qualitative Research: Theory, Method and Applications*, London: Sage.
- Fogelman, K. (1983). Ability Grouping in Secondary School. In K. Fogelman (Ed.), *Growing Up in Great Britain: Papers from the National Child Development Study*, London: Macmillan for the National Children's Bureau.
- Gall, J. P., Gall, M.D., & Borg, W. R. (1999). *Applying Educational Research – A Practical guide*, 4th ed., Addison Wesley Longman, Inc.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational Research – An Introduction*, 7th ed., Allyn and Bacon, Pearson Education, Inc.
- Galloway, D. (1983). Disruptive Pupils and Effective Pastoral Care. *School Organisation*, 13, 245-254.
- Gamoran, A. (1986). Instructional and Institutional Effects of Ability Grouping. *Sociology of Education*, 59, 185-198.
- Gamoran, A., & Berends, M. (1987). The Effects of Stratification in Secondary Schools: Synthesis of survey and ethnographic research. *Review of Educational Research*, 57, 415-435.
- Gamoran, A., & Mare, R. D. (1989). Secondary School Tracking and Educational Inequality: Compensation, reinforcement or neutrality? *American Journal of Sociology*, 94, 1146-1183.
- Geertz, C. (1973). Thick description: Towards an interpretive theory of culture. In C. Geertz (Ed.), *The Interpretation of Cultures*, New York: Basic Books.
- Gerth, H. H., & Mills, C. W. (1946). *From Max Weber: Essays in Sociology*, New York: Oxford University Press.

- Gillborn, D., & Youdell, D. (2000). *Rationing Education: Policy, Practice, Reform and Equity*, Buckingham: Open University Press.
- Glaser, B. (1978). *Theoretical Sensitivity*, Mill Valley, CA: Sociology Press.
- Glaser, B. (1992). *Basics of Grounded Theory Analysis: Emergence vs Forcing*, California: Sociology Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory*, Chicago: Aldine.
- Goh, S. C., Chang, A., & Chen, A. Y. (1996). *Normal Technical Students' Perception of their Classroom Environment*. Paper presented at the Joint Conference of the Educational Research Association and the Australian Association of Research in Education, held in Singapore, 25-29 November 1996.
- Goleman, D. (1996). *Emotional Intelligence: Why it can matter more than IQ*, London: Bloomsbury.
- Goodlad, J. I. (Ed.) (1989). *Access to Knowledge*, New York: College Entrance Examination Board.
- Gopinathan, S. (2001). Globalisation, the State and Education Policy in Singapore. In J. Tan, S. Gopinathan & W. K. Ho (Eds.), *Challenges Facing the Singapore Education Today* (pp. 8-14), Prentice Hall: Pearson Education Asia Pte Ltd.
- Gove, C. (1980). *Labelling and Mental Illness*, London: Sage Publications Ltd.
- Gray, J., McPherson, A., & Raffe, D. (1983). *Reconstructions of Secondary Education*, London: Routledge & Kegan Paul.
- Gray, J., Jesson, D., & Jones, B. (1986). The Search for a Fairer Way of Comparing Schools' Examination Results. *Research Papers in Education*, 10 (1), 91-122.
- Hallahan, D. P., & Kauffman, J. M. (1994). Towards a culture of disability in the aftermath of Deno and Dunn. *The Journal of Special Education*, 27 (4), 496-508.
- Hallam, S. (2002). *Ability Grouping in Schools. Perspectives on Educational Policy*, Institute of Education, University of London.
- Hallam, S., Ireson, J., & Hurley, C. (2001a). Ability Grouping in the Secondary School: Pupils' experiences of different grouping practices. Paper presented at the British Educational Research Association Conference, University of Leeds, UK, 12-15 September 2001.

- _____ (2001b). *Subject Domain Differences in Teachers' Beliefs about Ability Grouping and their Effects on Pedagogy*. Paper presented at the Annual Conference of the British Educational Research Association, University of Leeds, UK, 12-15 September 2001.
- Hallam, S., & Toutounji, I. (1996a). *What Do We Know About the Grouping of Pupils by Ability?* London: Institute of Education, University of London.
- _____ (1996b). What Do We Know About Grouping Pupils by Ability? *Education Review*, 10 (2), 62-70.
- Hallam, S., Ireson, J., Mortimore, P., Hack, S., & Clark, H. (1999). *Teachers' Views of Ability Grouping in English Secondary Schools*. Paper presented at the 8th European Conference for Research on Learning and Instruction, Coteborg University, Sweden, 24-28 August 1999.
- Hallinger, P., Bickman, L., & Davis, K. (1996). School Context, Principal Leadership and Student Reading Achievement. *The Elementary School Journal*, 96, 527-549.
- Hallinger, P., & Heck, R. H. (1998). Exploring the Principal's Contribution to School Effectiveness: 1980-1995. *School Effectiveness and School Improvement*, 9 (2), 157-191. Retrieved May 21, 2008, from <http://www.swetswise.com/eAccess/viewToc.do?titleID=182031&yevoID=1894554>
- Hallinan, M., & Sorensen, A. (1985). Ability Grouping and Student Friendships. *American Educational Research Journal*, 22, 485-499.
- Hallinan, M., & Williams, R. (1989). Interracial Friendship Choices in Secondary Schools. *American Sociological Review*, 54, 67-78.
- Hammersley, M. (1992). *What's Wrong with Ethnography?* *Methodological Explorations*, London: Routledge.
- Hargreaves, D.H. (1967). *Social Relations in a Secondary School*, London: Routledge & Kegan Paul.
- Harris, A. (2000). Effective Leadership and Departmental Improvement. *Westminster Studies in Education*, 23, 81-90.
- _____ (2001). Department Improvement and School Improvement: A missing link? *British Educational Research Journal*, 27(4), 477-486.
- Ireson, J., Clark, H., & Hallam, S. (2002). Constructing Ability Groups in the Secondary School: issues in practice. *School Leadership & Management*, 22(2), 163-176.

- Ireson, J., & Hallam, S. (2001). *Ability Grouping in Education*, London: Sage Publications.
- Ireson, J., Hallam, S., & Hurley, C. (2001). *Pupils' Relationships with School: Does ability grouping make a difference?* Paper presented at the BPS Developmental and Education Sections' Joint Conference, University College Worcester, UK, 6-9 September 2001.
- Ireson, J., Hallam, S., & Plewis, I. (2001). Ability Grouping in Secondary Schools: Effects on pupils' self-concepts. *British Journal of Educational Psychology*, 71, 315-326.
- Janesick, V. J. (1994). The dance of qualitative research design. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 209-219), Thousand Oaks, CA: Sage.
- Johnson, D. (1994). *Research Methods in Educational Management*, Harlow, Longman.
- Kauffman, J. M., & Pullen, P.L. (1996). Eight Myths about Special Education. *Focus on Exceptional Children*, 28 (5), 1-12.
- Keogh, B. K. (1990). Narrowing the gap between policy and practice. *Exceptional Children*, 57 (2), 186-190.
- Kerckhoff, A. (1986). Effects of Ability Grouping in British Secondary Schools. *American Sociological Review*, 51, 842-858.
- Knutsson, L. (1977). *Labelling Theory*, Stockholm: Scientific Reference Group.
- Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy*, 45, 214-222.
- Kulik, J. A., & Kulik, C-L. C. (1982). Effects of Ability Grouping on Secondary School Students: A meta-analysis of evaluation findings. *American Educational Research Journal*, 19, 415-428.
- _____. (1992). Meta-Analytic Findings on Grouping Programs. *Gifted Child Quarterly*, 36 (2), 73-77.
- Kuhn, T. (1970). *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press.
- Lacey, C. (1970). *Hightown Grammar*, Manchester: Manchester University Press.
- _____. (1974). Destreaming in a "Pressured" Academic Environment. In J. Eggleston (Ed.), *Contemporary Research in the Sociology of Education*, London: Methuen.

- Law, L., Walker, A., & Dimmock, C. (2003). The influence of principals' values on their perception and management of school problems. *Journal of Educational Administration*, 41(5), 498-523.
- Lee, U. W. (2006, May 4). Streaming Keeps Drop-out Rates to 3%. *TODAY*, p. 4.
- Levine, D. U. (1992). An Interpretative Review of US Research and Practice Dealing With Unusually Effective Schools. In D. Reynolds & P. Cuttance (Eds.), *School Effectiveness: Research, Policy and Practice*, London: Cassell.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*, Beverly Hills, CA: Sage.
- Lughart, E., Roeders, P. J. B., Bosker, R. J., & Bos, K. T. (1989). *Effective School-Kenmerken in het Voortgezet Onderwijs'. Deel 1: Literatuurstudie* (Effective schools' characteristics in secondary education. Part 1: Literature review). Gronigen: RION.
- Maguire, M., Maguire, S., & Felstead, A. (1993). *Factors Influencing Individual Commitment to Lifetime Learning: A literature review*, Leicester: Centre for Labour Market Studies.
- Marascuilo, L. A., & McSweeney, M. (1972). Tracking and Minority Student Attitudes and Performance. *Urban Education*, 6, 303-319.
- Marks, G. (1994). Armed with new hope ...: The construction of the subjectivity of students within integration. *Disability and Society*, 9 (1), 71-84.
- Marsh, H. W. (1991). The Failure of High-Ability High Schools to Deliver Academic Benefits: The importance of academic self-concept and educational aspirations. *American Educational Research Journal*, 28, 445-480.
- Marsh, H. W., Chessor, D., Craven, R.G., & Roche, L. (1995). The Effects of Gifted and Talented Programs on Academic Self-Concept: The big fish strikes again. *American Educational Research Journal*, 32, 285-319.
- Marsh, H. W., Parker, J., & Barnes, J. (1985). Multidimensional Adolescent Self-Concepts: Their relationship to age, sex and academic measures. *American Educational Research Journal*, 22, 422-444.
- Marsh, H. W., & Peart, N. (1988). Competitive and Co-operative Physical Fitness Training for Girls: Effects on physical fitness and on multidimensional self-concepts. *Journal of Sport and Exercise Psychology*, 10, 390-407.

- Marsh, H. W., & Rowe, K. J. (1996). The Negative Effects of School-Average Ability on Academic Self-Concept: An application of multilevel modeling. *Australian Journal of Education*, 40 (1), 65-87.
- Marsh, H. W., & Yeung, A. S. (1997). Course Work Selection: Relations to academic self-concept and achievement. *American Educational Research Journal*, 34 (4), 691-720.
- Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research: A Philosophical and Practical Guide*, London: Falmer Press.
- McDermitt, R. (1993). The acquisition of a child by a learning disability. In S. Chaikin & J. Lave (Eds.), *Understanding Practice* (pp. 269-305), New York: Cambridge University Press.
- McGivney, V. (1992). *Tracking Adult Learning Routes*, Leicester: NIACE.
- Merton, R. K. (1968). *Social Theory and Social Structure*, New York: The Free Press.
- Ministry of Education, Singapore (1979). *Report on the Ministry of Education*, Singapore: Author.
- _____ (1987). *Towards Excellence in Schools*, Singapore: Author.
- _____ (1991). *Improving Primary School Education*, Singapore: Author.
- _____ (2004). *Guide to Elective Modules for Normal (Technical) Course*, Curriculum Planning & Development Division, Singapore: Author.
- _____ (2005). *Choosing Your Secondary Schools for admission to secondary one in 2006*. School Placement and Scholarships Branch, Ministry of Education, Singapore, August.
- _____ (2007a). Ministry of Education Appoints 65 Principals in 2007. *Press Release*, 10 October 2007.
- _____ (2007b). *Choosing Your Secondary Schools for Admission to Secondary One in 2008*. School Placement and Scholarships Branch, Ministry of Education, Singapore, August.
- _____ (2007c). Enhancing Learning Experiences for Students in the Normal Course. *Press Release*, 2 October 2007.
- _____ (n.d.). The Singapore Education Landscape. *Ministry of Education, Singapore: Education System*. Retrieved June 14, 2008, from <http://www.moe.gov.sg/education/>

- Ministry of Information, Communications and the Arts, Singapore (2004). Speech by Minister Mentor Lee Kuan Yew at the Parliamentary Debate on the Report of the Chinese Language Curriculum and Pedagogy Review Committee. *Press Release*, 25 November 2004.
- Mortimore, P., Sammons, P., Ecob, R., Stoll, L., & Lewis, D. (1988). *School Matters: The Junior Years*, Salisbury: Open Books.
- Nettles, S. M., & Herrington, C. (2007). Revisiting the Importance of the Direct Effects of School Leadership on Student Achievement: The Implications for School Improvement Policy. *Peabody Journal of Education*, 82 (4), 724-736. Retrieved May 20, 2008, from <http://www.swetswise.com/eAccess/viewToc.do?titleID=157554&yevoID=2156394>
- Nettles, S. M., & Petscher, Y. M. (2006). *The Relationship Between Principal Implementation Behaviours and Student Achievement in Reading*, Manuscript submitted for publication.
- Newbold, D. (1977). *Ability Grouping: The Banbury Enquiry*, Slough: National Foundation for Educational Research Publishing Company Ltd.
- Ng, C. F. (1999). *The Learning Style of Normal (Technical) Students in a Neighbourhood School*, Unpublished MA Thesis, National Institute of Education, Nanyang Technological University.
- Oakes, J. (1985). *Keeping Track: How Schools Structure Inequality*, New Haven, CT: Yale University Press.
- _____. (1990). *Multiplying Inequalities: The Effects of Race, Social Class, and Tracking on Opportunities to Learn Mathematics and Science*, Santa Monica: RAND.
- _____. (1992). Can Tracking Research Inform Practice? Technical, normative and political considerations. *Educational Researcher*, 12-21.
- Oakes, J., Gamoran, A., & Page, R. (1991). Curriculum Differentiation: Opportunities, consequences and meanings. In P. Jackson (Ed.), *Handbook of Research on Curriculum*, New York: Macmillan.
- Opdenakker, M. C., & Van Damme, J. (2001). Relationship between School Composition and Characteristics of School Process and their Effect on Mathematics Achievement. *British Educational Research Journal*, 27(4), 407-432.

- Pandit, N. R. (1996). The creation of theory: A recent application of the Grounded Theory Model. *The Qualitative Report*, 2(4). Retrieved May 28, 2006, from <http://www.nova.edu/ssss/QR/QR2-4/pandit.html>
- Passow, A. (1988). Issues of Access to Knowledge: Grouping and tracking. In L. Tanner (Ed.), *Critical Issues in Curriculum*, Chicago: University of Chicago Press.
- Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods*, 2nd ed., Newbury Park, CA: Sage.
- _____. (2001). *Qualitative Evaluation and Research Methods*, 3rd ed., Thousand Oaks, CA: Sage.
- Peak, B., & Morrison, K. (1988). Investigating Banding Origins and Destinations in a Comprehensive School. *School Organisation*, 8(3), 339-349.
- Perusin, A. (1994). Labelling: A dilemma or solution? *B. C. Journal of Special Education*, 21 (3), 81-93.
- Peshkin, A. (1988). In search of subjectivity – one's own. *Educational Researcher*, 17 (7), 17-21.
- Postlethwaite, K., & Denton, C. (1978). *Streams for the Future? The Long Term Effects of Early Streaming and Non-streaming – the Final Report of the Banbury Grouping Enquiry*, Smart & Co. (Printers) Ltd.
- Punch, K. F. (1998). *Introduction to Social Research: Quantitative & Qualitative Approaches*, London: Sage.
- Quek, M. S. I. (1988). *School Social Climate and the Academic Self-concept of Secondary Three Normal Course Students*, Unpublished M.Ed. Thesis, National University of Singapore.
- Quek, T. (2006, May 2). Factory rejects? Govt Spends More on ITE Students than JC Ones. *The Straits Times*, H1.
- Rahma, P. M. (2003). *The Meanings Singapore Secondary One Normal Technical Students Attach to the Letters Used in Algebra: A Case Study*, Unpublished M.Ed. Thesis, National Institute of Education, Nanyang Technological University.
- Reid, K., Hopkins, D., & Holly, P. (1987). *Towards the Effective School*, Oxford: Blackwell.
- Reuman, D. A. (1989). How Social Comparison Mediates the Relation Between Ability-Grouping Practices and Students' Achievement Expectancies in Mathematics. *Journal of Educational Psychology*, 81, 178-189.

- Reynolds, D. (1982). The Search for Effective Schools. *School Organisation*, 2 (3), 215-189.
- Ritzer, George. (1996). *Modern Sociological Theory*, 4th ed., New York: McGraw Hill Companies, Inc.
- Rosenbaum, J. E. (1976). *Making Inequality: The Hidden Curriculum of High School Tracking*, New York: Wiley.
- Rossmann, G. B., & Rallis, S. F. (2003). *Learning in the Field. An Introduction to Qualitative Research*, 2nd ed., Sage Publications.
- Rudd, W. G. A. (1956). The Psychological Effects of Streaming by Attainment with Special Reference to a Group of Selected Children. *British Journal of Educational Psychology*, 28, 47-60.
- Rutter, M., Maughan, B., Mortimore, P., & Ouston, J. (1979). *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*, London: Open Books.
- Sacco, V. F. (1992). *Deviance: Conformity and Control in Canadian Society*, Toronto: Prentice-Hall Canada.
- Sammons, P., Thomas, S., & Mortimore, P. (1997). *Forging Links: Effective Schools and Effective Departments*, London: Paul Chapman Publishing.
- Sandven, J. (1971). Causes of Lacking a Sense of Well-Being in School. *Scandinavian Journal of Educational Research*, 15 (1), 21-60.
- (1972). Sense of Well-Being in School as Perceived by Students and Teachers. *Scandinavian Journal of Educational Research*, 16 (4), 117-160.
- Sarason, S. (1990). *The Predictable Failure of Educational Reform: Can We Change Before It's Too Late?* San Francisco: Jossey-Bass.
- Scheerens, J., Nanninga, H. C. R., & Pellgrum, W. J. (1989). Generalisability of Instructional and School Effectiveness Indicators Across Nations: Preliminary results of a secondary school analysis of the IEA second mathematics study. In B. P. M. Creemers, T. Peters & D. Reynolds (Eds.), *School Effectiveness and School Improvement, Proceedings of the Second International Congress*, Rotterdam, Lisse: Swets & Zeitlinger.
- Schutz, A. (1967). *The Phenomenology of the Social World* (G. Alsh & F. Lenhart, Trans.), Chicago: Northwestern University Press.

- Schwartz, F. (1981). Supporting or Subverting Learning: Peer groups patterns in four tracked schools. *Anthology and Education Quarterly*, 12, 99-121.
- Schwartz, H., & Jacobs, J. (1979). *Qualitative Sociology: A Method to the Madness*, New York: The Free Press.
- Seidman, I. (1998). *Interviewing as Qualitative Research - A Guide for Researchers in Education and the Social Sciences*, 2nd ed., New York: Teachers College, Columbia University.
- Simon, B. (1966). The History of Education. In J. W. Tibble (Ed.), *The Study of Education*, London: Routledge and Keegan Paul.
- Slavin, R. E. (1987a). Ability Grouping and Student Achievement in Elementary Schools: a best evidence synthesis. *Review of Educational Research*, 57(3), 293-336.
- (1990). Achievement Effects of Ability Grouping in Secondary Schools: A best evidence synthesis. *Review of Educational Research*, 60, 471-490.
- Slee, R. (1993). The politics of integration - new sites for old practices. *Disability, Handicap & Society*, 8 (4), 351-360.
- Smith, D., & Tomlinson, S. (1989). *The School Effect*, London: Policy Studies Institute.
- Stainback, S., & Stainback, W. (1984). Methodological considerations in qualitative research. *British Journal of Educational Studies*, 46 (4), 440-454.
- Stainback, W., & Stainback, S. (1987). Integration versus co-operation: A commentary on 'Educating children with learning problems: A shared responsibility.' *Exceptional Children*, 54, 66-68.
- Steedman, J. (1980). *Progress in Secondary Schools*, London: National Children's Bureau.
- Strauss, A., & Corbin, J. (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage.
- Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 273-285), California: Sage.
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 2nd ed., Thousand Oaks, CA: Sage.

- Strauss, A. L. (1987). *Qualitative Analysis for Social Scientists*, New York: Cambridge Press.
- Tan, K. H. (1995). *Differences in School Related Attitudes Among Low and High Achieving Students in the Normal and Express Streams*, Unpublished Master Dissertation, National Institute of Education, Nanyang Technological University, Singapore.
- Tay, E. S. (1993). Speech by Dr Tay Eng Soon, Senior Minister of State for Education, at the Launching of the Normal (Technical) Course at the World Trade Centre Auditorium on Tuesday, 4 May 1993.
- Taylor, N. (1993). Ability Grouping and its Effect on Pupil Behaviour: A case study of a Midlands comprehensive school. *Education Today*, 43 (2), 14-17.
- Taylor, S. J., & Bogdan, R. (1984). *Introduction to Qualitative Research Methods*, New York: John Wiley & Sons.
- Tomlinson, S. (1987). Curriculum Option Choices in Multi-Ethnic Schools. In B. Troyna (Ed.), *Racial Inequality in Education*, London: Tavistock.
- Troyna, B., & Siraj-Blatchford, I. (1993). Providing Support or Denying Access. The experiences of students designated as ESL and SN in a multi-ethnic secondary school. *Educational Review*, 45 (1), 3-11.
- Tuckman, B. W., & Bierman, M. (1971). Cited in W. Winn and A. P. Wilson (1983). The Affect and Effect of Ability Grouping. *Contemporary Education*, 54, 119-125.
- Turney, A. H. (1931). The Status of Ability Grouping. *Educational Administration and Supervision*, 17, 21-42, 110-127.
- Usher, R. (1996). A critique of the neglected epistemological assumptions of educational research. In Scott, D & Usher, R. (Eds.) *Understanding Educational Research*, London, Routledge.
- Van Laarhoven, P., & de Vries, A. (1987). Effects of Heterogeneous Grouping in Secondary Schools. In J. Scheerends & W. Stoel (Eds.), *Effectiveness of School Organisations*, Lisse: Swets & Zeitlinger.
- Vanfossen, B. E., Jones, J. D., & Spade, J. Z. (1987). Curriculum Tracking and Status Maintenance. *Sociology of Education*, 60, 104-122.
- Walker, R. (1985). An introduction to applied qualitative research. In R. Walker (Ed.), *Applied Qualitative Research* (pp. 3-26), Aldershot, England: Gower.

- Walker, A., & Dimmock, C. (Eds.) (2002). *School Leadership and Administration. Adopting a Cultural Perspective*, RoutledgeFalmer, New York and London.
- Whipple, G. M. (1919). *Classes for Gifted Children*, Bloomington: Public School Publishing.
- Will, M. C. (1986). Educating children with learning problems: A shared responsibility. *Exceptional Children*, 52, 411-415.
- Willms, J. D. (1986). Social Class Segregation and its Relationship to Pupils' Examination Results in Scotland. *American Sociological Review*, 51, 224-241.
- Willms, J. D., & Cuttance, P. (1985). School Effects in Scottish Secondary Schools. *British Journal of Sociology of Education*, 6, 289-306.
- Winn, W., & Wilson, A. P. (1983). The Affect and Effect of Ability Grouping. *Contemporary Education*, 54, 119-125.
- Witziers, B., Bosker, R. J., & Kruger, M. L. (2003). Educational Leadership and Student Achievement: The Elusive Search for an Association. *Educational Administration Quarterly*, 39, 398-425.
- Woods, P. (1992). Symbolic Interactionism: Theory and method. In M. D. LeCompte, W. L. Milroy & J. Preissle, J. (Eds.), *Handbook of Qualitative Research in Education* (pp. 338-404), San Diego: Academic Press.
- Wragg, E. C. (1994). Conducting and Analysing Interviews. In N. Bennett, R. Glatter & R. Levacic (Eds.), *Improving Educational Management – Through Research and Consultancy*, Paul Chapman Publishing Ltd.
- Wright, C. (1987). Black Students – White Teachers. In B. Troyna (Ed.), *Racial Inequality in Education*, London: Tavistock.
- Wright, C., Weekes, D., & McGlaughlin, A. (2000). *Race, Class and Gender in Exclusion from School*, London: Falmer Press.
- Yip, S. K, Eng, S. P., & Yap, Y. C. (1997). 25 Years of Educational Reform. In J. Tan, S. Gopinathan & W. K. Ho (Eds.), *Education in Singapore – A Book of Readings*, National Institute of Education, Nanyang Technological University, Prentice Hall.

Appendix A

Summary of Participants' Personal Profile

Demographics	Principals									
	A	B	C	G	H	K	Q	S	T	Y
Gender	M	F	F	F	F	F	F	M	M	F
Age Range (yrs)	45 - 49	45 - 49	55 - 59	45 - 49	50 - 54	50 - 54	55 - 59	50 - 54	50 - 54	45 - 49
Highest Qualification	Master degree	Bachelor degree	Master degree	Bachelor degree	Bachelor degree	Master degree	Bachelor degree	Master degree	Bachelor degree	Bachelor degree
Length of Service as a Teacher (yrs)	21 - 30	21 - 30	21 - 30	21 - 30	21 - 30	11 - 20	11 - 20	21 - 30	21 - 30	21 - 30
Length of Service as a Principal (yrs)	6 - 10	3 - 5	6 - 10	6 - 10	11 - 20	11 - 20	11 - 20	6 - 10	6 - 10	3 - 5
Years in current School (yrs)	6 - 10	3 - 5	6 - 10	1 - 2	6 - 10	3 - 5	3 - 5	3 - 5	<1	3 - 5

A How are pupils allocated to classes?

1. How are pupils assigned to the different streams in sec one, two and three?
2. Are external assessments used to assign pupils to the stream? How are these used?
3. Are teachers' opinions taken into account in the streaming decision?
4. To what extent do pupils' attitudes, behaviour, motivation, effort and self-esteem influence the decision of streaming?
5. What do you do should the streaming results in a combination or aggregation of 'problematic' pupils?
6. How do gender and other social factors such as, friendship or disruptive combinations of pupils affect your decision in the streaming process?
7. How are pupils with special needs in the NT classes looked after?

B Factors affecting the size and number of pupil groups

8. What would be your preference for the NT class sizes?
9. What are your constraints with respect to class sizes of the NT stream?

C Principals' Allocation of Resources - classes, curriculum offerings, money, enrichment programmes, teachers

10. In the allocation of resources, such as teachers and money, which would have priority, Express or Normal Technical classes? Please explain.
11. If you have two teachers and one is a stronger teacher in terms of producing results, which teacher would you assign to teach the Express and which the NT? Why?
12. How do you handle the objections of teachers assigned to teach this stream?
13. What subject offerings would you give to your NT students if you are free to do as you wish? Why?
14. Do you have more enrichment programmes planned and organised for the Express students than for the NT stream? Please comment. Can I have a look at the data from your records?

15. How many competitions have your Normal Technical students taken part in and how many awards have they achieved in the past year or past two years?

D Movement of pupils across streams

16. What other factors, other than standardised test scores, play a part or influence the placement or movement of these students?
17. Once allocated to the stream, the pupils often remain there and movement although possible, in practice it occurs rather infrequently. What is your opinion?
18. What are the problems you encountered in the movements of pupils into and out of the NT stream?
19. What opportunities are there for students to move from one NT stream to a higher stream, Normal Academic or Express?
20. Is there a monitoring system to identify pupils who should be moved up or down?
21. Is there a clearly defined process for moving pupils and if so what is this?
22. How frequent does movement occurs during the year?
23. In what level is this allowed and most common?
24. In the last 3 years how many NT pupils have you moved to the Normal Academic or Express stream? What about last year? (Can I have your data on this?)
25. What would be your preferred pupil to teacher ratio for the NT classes? Why? What is the current pupil to teacher ratio in the classes?

E Pressures and constraints on movement

26. Do parents have a say in the movement?
27. What constraints limit the movement between groups?

F Behavioural, social and motivational factors

28. Do behavioural and motivational factors of the students play a part in their movement and if so how are they considered?
29. From which groups of students do most of your disciplinary cases come from, the Express or the NT? Please explain.

30. What are the main types of cases and how do you manage these students?
31. Because a disproportionate number of NT students come from the low socio-economic status and some ethnic minority - how do you encourage social mixing among the students of the different streams in the school?

G Achievement or ability?

32. Are there movements of students made based on potential to achieve rather than on performance? Why?
33. Should motivational or attitudinal factors influence the decision to move students? Explain.
34. What other factors are taken into consideration when decisions are made about streaming of pupils?
35. How many subjects do you offer your NT classes in Sec 3 and 4?
36. How many student leaders (prefects, councillors) in your school are from the NT stream? (Check on data)
37. In practice, will you allow your top NT student to sit for the 'O' level exams? Please explain.

H Principals' Perceptions of NT Students

38. In your opinion, what are the differences between the NT students and students in the other streams in terms of academic ability, non-academic ability, motivation, behaviour, social and other aspects?
39. What do you perceive are the career prospects of the Normal Technical students?
40. Are the students in the NT stream treated equally just like the other stream? Please elaborate with examples.
41. Do you have lower expectations of the Normal Technical students compared to the other streams? Why? Please explain.
42. Are students from the NT stream more forthcoming in their contributions to the school than the Express stream? What do you do to encourage them?

I Gaps in perceptions: Principals vs NT Students, Other Students vs NT Students

43. Is there perception of inequality in the way your Normal Technical students see themselves being treated compared to students in the other streams? If so, how do you manage this perception in your school?
44. Do the Normal Technical students in your school feel that you treat them unequally compared to the other streams?

J Real Opportunity for NT Students

45. Does streaming, in reality, truly "provide an opportunity for less capable pupils to develop at a pace slower than for the more capable pupils"? Please elaborate.
46. Does streaming really "allow a child every opportunity to go as far as he can"? Please explain.
47. **Have any Normal Technical students been promoted to take the 'O' Levels as provided for in the MOE's publicly expressed movement of students up the educational ladder?**
48. How many of your current batch of NT students do you estimate will end up in the Polytechnic and University?
49. Are students in the NT stream sufficiently challenged by the quality of teaching?

Others

50. How many Normal Technical classes would you want, each year, if you have a choice? Please explain.
51. Would you like your school to be known as a Normal Technical school? Please explain.
52. Are you for ability streaming, such as that practiced here in Singapore?
53. What are the effects resulting from the difference in curriculum between the NT and the other streams? How do you manage them?

Research Questions

54. What is the relationship between Normal Technical students' perceptions and actual school management practices? In other words, what gaps exist between what principals say they do and what the Normal Technical students perceive to be done?

55. Did the school principals' beliefs or perceptions of Normal Technical students influence their school management?

A Principals' Perceptions of NT Students

56. In your opinion, what are the characteristics of the NT students and students in the other streams in terms of academic ability, non-academic ability, motivation, behaviour, and other aspects?

B Gaps in perceptions: Principals vs NT Students, Other Students vs NT Students

57. Do the Normal Technical students in your school feel that you treat them unequally compared to the other streams? **If so, how do you manage this perception in your school?**

58. What have you done, which you think no other principals have done, to cater to the needs of the Normal Technical students?

59. Are students from the NT stream more forthcoming in their contributions to the school than the other streams?

C Factors affecting the size and number of pupil groups

60. What is the current pupil-teacher ratio in your NT classes and what would your preference be?
61. What are your constraints with respect to class sizes of the NT stream?

D Streaming and allocation of pupils to classes

62. How do you assigned pupils to the different streams in sec one, two and three?
63. What other factors (e.g. teachers' opinions, pupils' gender, attitudes, behaviour, motivation, effort, self-esteem, potential to achieve, etc.) do you take into account in the streaming decision?
64. What do you do should the streaming results in a combination or aggregation of 'problematic' pupils?

E Movement of pupils across streams

65. Once allocated to the stream, the pupils often remain there and movement although possible, in practice it occurs rather infrequently. Please comment.
66. What opportunities are there for students to move from the NT stream to a higher stream - Normal Academic or Express, at which level and when?
67. What are your criteria in moving pupils out of the NT stream?

68. Do you have a monitoring system to identify pupils who should be moved up or down?
69. Do you have a clearly defined process for moving pupils and if so what is this?
70. In the last 3 years how many NT pupils have you moved to the Normal Academic or Express stream? What about last year? (Can I have your data on this?)

F Pressures and constraints on movement

71. Do the MOE or the parents have a say in the movement?

G Allocation of Resources - classes, curriculum offerings, money, enrichment programmes, teachers

72. In the allocation of resources, such as teachers and money, which would you give priority to - the Express or Normal Technical classes? e.g. if you have two teachers and one is a stronger teacher in terms of producing results, which teacher would you assign to teach the Express and which the Normal Technical? Why?
73. How many subjects do you offer your NT classes in Sec 3 and 4 compared to the Express streams and what are your considerations in making this decision?
74. What subjects would you offer to your NT students if you are free to do as you wish? Why?
75. Do you have more enrichment programmes planned and organised for the Express students than for the NT stream? What are your reasons? (Can I have a look at the data from your records?)

H Behavioural, social and motivational factors

76. Do most of your disciplinary cases come from the NT classes? Please give examples.
77. How do you manage these students?
78. Because a disproportionate number of NT students come from the low socio-economic status and some ethnic minority - how do you encourage social mixing among the students of the different streams in the school?

I Achievement or ability?

79. What opportunities are there for your NT students to take on leadership roles (prefects, councillors) within the school?
80. Are expectations, academic or otherwise, for the Normal Technical students lower compared to the other streams? Why? Please explain.

J Real Opportunity for NT Students

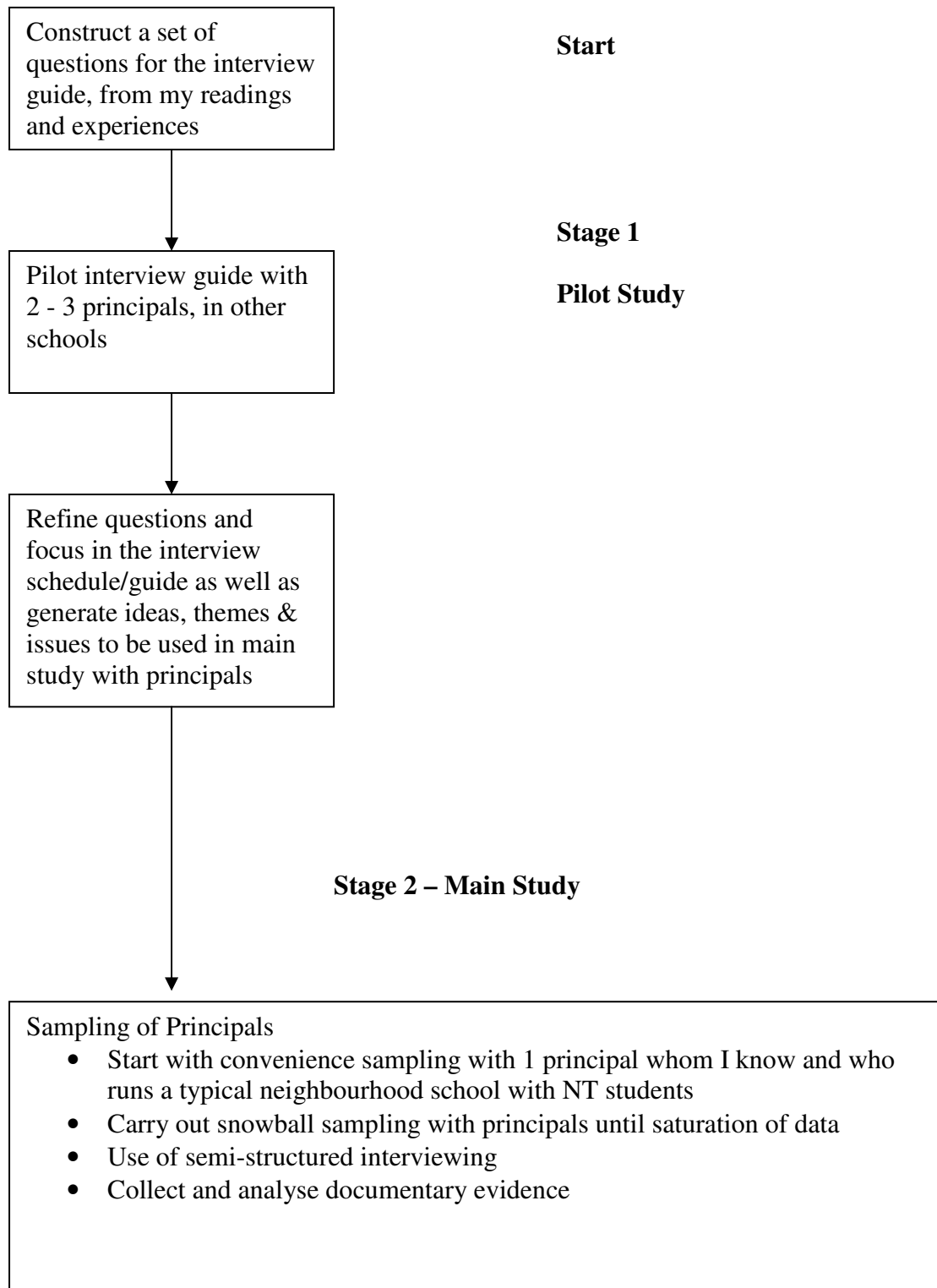
81. **Have any Normal Technical students been promoted to take the ‘O’ Levels as provided for in the MOE’s publicly expressed movement of students up the educational ladder i.e. from 4T to 5N?**
82. How many of your current batch of NT students do you estimate will end up in the Polytechnic and University?
83. What do you perceive are the career prospects of the Normal Technical students?

Others

84. How many Normal Technical classes would you want, each year, if you have a choice? Please explain.
85. Would you like your school to be known as a Normal Technical school? Please explain.
86. Are you for ability streaming, such as that practiced here in Singapore?
87. Does streaming really "allow a child every opportunity to go as far as he can"? Please explain.

Appendix D

Data Gathering Process



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Appendix E

Demographics of Respondents

Name: _____ **School:** _____

1. My gender Please shade **one** response to each question
O Male O Female

2. My age

O Below 20 years old	O 40-44 years old
O 20-24 years old	O 45-49 years old
O 25-29 years old	O 50-54 years old
O 30-34 years old	O 55-59 years old
O 35-39 years old	O over 60 years old

3. My highest qualification attained

O Ph.D.	O Diploma
O Masters degree	O A level
O Bachelor degree	O O level

4. My years of service as a teacher (excluding pre-service training in NIE)

O Less than one year	O 11-20 years
O 1-2 years	O 21-30 years
O 3-5 years	O Over 30 years
O 6-10 years	

5. My years of service as a principal

O Less than one year	O 11-20 years
O 1-2 years	O 21-30 years
O 3-5 years	O Over 30 years
O 6-10 years	

6. My years of service with current school

O Less than one year	O 11-20 years
O 1-2 years	O 21-30 years
O 3-5 years	O Over 30 years
O 6-10 years	

THANK YOU FOR PARTICIPATION IN THE SURVEY
YOUR RESPONSES WILL BE KEPT CONFIDENTIAL

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Appendix F

School Information

Dear

I would need to collect some data about your school for the year (200). Please be assured that all data provided will be kept in strict confidence.

I appreciate very much if you could furnish me with the following data:

- a. Number of Express classes: _____
- b. Number of Normal Academic classes: _____
- c. Number of Normal Technical classes: _____
- d. Average number of students in the:
 - Express classes: _____
 - Normal Academic: _____
 - Normal Technical: _____
- e. Range of PSLE aggregate scores for each of these Normal Technical cohorts (2006):
 - Sec One: _____ to _____
 - Sec Two: _____ to _____
 - Sec Three: _____ to _____
 - Sec Four: _____ to _____

Thank you.

James Ong

Appendix G

Informed Consent Form

Date _____

Ms _____
Principal, _____ Secondary School

Dear Ms _____

RE: INTERVIEW FOR RESEARCH STUDY

I am currently an EdD student with the University of Leicester, UK. My programme requires that I conduct a research project. I am requesting for your kind participation in this project as well as your permission to administer a questionnaire to your NT students (5/class/level).

I am interested in learning about the management practices of principals in neighbourhood secondary schools with Normal Technical classes. No individual principal, teacher or student will be the focus of this research.

Your participation as well as that for your students will entail an interview lasting about an hour. The interview will be tape-recorded. The general topic I want to explore in the interview will be your policies and management practices with respect to the Normal Technical classes.

I will protect the identities of participants – yours, your teachers and students – through the use of pseudonyms in this and any future publications or presentations. Participants should understand that they may be quoted directly but that their names will not be used in any part of the report. All data will be stored in a secure location. Please understand that you may withdraw from the study at any time, without prejudice.

I appreciate your willingness to give your time to this project to help me learn about management practices of principals in neighbourhood secondary schools. If you have any questions, please feel free to ask me (65816518; jaoau@singnet.com.sg), or to email my professor, Dr. Dimmock at Centre for Educational Leadership and Management (CELM), University of Leicester, UK or Email: cd47@leicester.ac.uk.

Thank you,

James Ong

I have read the above and discussed it with the researcher. I understand the study and agree to participate.

Signature & Date

Note: Highlighted in yellow to show that original intention to include teachers and students was abandoned due to time constraints and the re-focusing of the study.

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Appendix H

Request for Documents

Dear _____

REQUEST FOR DOCUMENTS

I would like to request the following from you as part of my study:

- 1 Copies of the subject combinations for sec 2 streaming for the last three years for all streams;
- 2 Copies of the Enrichment Programmes planned and carried out for the NT students and other stream students in your school for the last 3 years (if possible);
- 3 Records of number of NT students who have been laterally transferred from sec one NT to sec 2 NA and from sec 2 NT to sec 2 NA for the last three years

Lateral Transfer	2004	2005	2006
Sec 1NT to Sec 2NA			
Sec 1NT to Sec 1NA			
Sec 2NT to Sec 3NA			
Sec 2NT to Sec 2NA			

Thank you.

James Ong

**Appendix I Sample of FINAL 2005 SEC 3 SUBJECT COMBINATION / 2004 SEC 2 PROMOTION AND STREAMING CRITERIA
(School A)**

FINAL 2005 SEC 3 SUBJECT COMBINATION															
SEC 3 EXP								SEC 3 NA						SEC 3 NT	
3/1		3/2		3/3		3/4		3/5		3/6		3/7		3/8	
1	English	1	English	1	English	1	English	1	English	1	English	1	English	1	English
2	MT	2	MT	2	MT	2	MT	2	MT	2	MT	2	MT	2	MT
3	EMaths	3	EMaths	3	EMaths	3	EMaths	3	EMaths	3	EMaths	3	EMaths	3	EMaths
4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	Comb. Hum. (SS/GE)	4	CPA
5	Phy	5	Sc(P/C)	5	Sc(P/C)	5	Sc(P/C)	5	Sc(P/C)	5	Sc(P/C)	5	Sc(P/C)	5	Tech Studies
6	Chem	6	AMaths	6	P/Acc	6	P/Acc	6	P/Acc	6	D&T	6	Art	6	EOA
7	AMaths	7	D&T	7	D&T	7	Art								
8	*Biology														

2004 SEC 2 PROMOTION AND STREAMING CRITERIA																
1) PASS in EL AND 2) OVERALL PASS								1) Pass in EL & 2 other subjects OR 2) Pass in 4 subjects						Pass in 2 subj; one of which should be EL or Maths		
1) Double weightage in English, Maths & Science								Pass in Maths		Pass in Tech						
2) Pass in Maths & Science		2) Pass in Maths		2) For D&T option: pass in Tech												
3) *Must score a min of 70% in the overall %																
Tie-breaker : Mean of English, Maths & Science																

Appendix J Sample of Enrichment Programmes and Subject Combinations

SECONDARY SCHOOL B

Enrichment Activities for NT students

2004

4T - Electronic Enrichment Programme

2005

3T - SIMTECH Motor Challenge

2006

1T - Web Design

Digital Photography

3D Animation course

2T - Guitar Enrichment Course

Web Design

Digital Photography

3T - Guitar Enrichment Course

Conversational Malay and Mandarin

4T - Electronic Circuit Construction and Trouble-shooting

2004 SEC 3 SUBJECT COMBINATION

Express Stream

Option 1	Option 2	Option 3
1. EL	1. EL	1. EL
2. MT	2. MT	2. MT/ART
3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/HT
5. CHEMISTRY	5. PHY/CHEM	5. CHEM/BIO
6. PHYSICS	6. DT/FN	6. POA
7. A MATH	7. A MATH/POA	

Normal (Acad) Stream

Option 1	Option 2	Option 3
1. EL	1. EL	1. EL
2. MT/CPA	2. MT/CPA	2. MT/CPA
3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/GEO
5. PHY/CHEM	5. PHY/CHEM	5. PHY/CHEM
6. POA	6. DT/FN	6. DT/FN

Normal (Tech) Stream

Option 1	Option 2
1. EL	1. EL
2. MT/EOA	2. MT/EOA
3. MATH	3. MATH
4. CPA	4. CPA
5. SC	5. DT

2005 SEC 3 SUBJECT COMBINATION**Express Stream**

Option 1	Option 2	Option 3
1. EL	1. EL	1. EL
2. MT	2. MT	2. MT/ART
3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/HT
5. CHEMISTRY	5. Phy/Chem or Chem/Bio	5. Phy/Chem or Chem/Bio
6. PHYSICS / BIO	6. DT/FN	6. POA
7. A MATH	7. A MATH/POA	

Normal (Acad) Stream

3N1	3N2	3N3	3N4
1. EL	1. EL	1. EL	1. EL
2. MT	2. MT	2. MT	2. MT
3. MATH	3. MATH	3. MATH	3. MATH
4. SS/GEO	4. SS/HT	4. SS/GEO	4. SS/GEO
5. PHY/CHEM	5. PHY/CHEM	5. PHY/CHEM	5. PHY/CHEM
6. POA	6. DT	6. DT	

Normal (Tech) Stream

Option 1	Option 2
1. EL	1. EL
2. MT/EOA	2. MT/EOA
3. MATH	3. MATH
4. CPA	4. CPA
5. SC	5. TS

2006 SEC 3 SUBJECT COMBINATION**Express stream**

Option 1	Option 2
EL	EL
MT	MT
MA	MA
AM/POA	AM/POA
CHEMISTRY	(CH/PHY) /(CH/BIO)
PHYSICS/BIOLOGY	D&T/F&N
SS/GEO	SS/GEO

Normal (Acad) Stream

Option 1	Option2	Option 3	Option 4
EL	EL	EL	EL
MT	MT	MT	MT
MA	MA	MA	MA
SS/GEO	SS/GEO	SS/GEO	SS/GEO
PHY/CHEM	PHY/CHEM	PHY/CHEM	PHY/CHEM
POA	POA	D&T	

Normal (Tech) Stream

Option 1	Option 2
EL	EL
MT/*ART	MT/*ART
MA	MA
CPA	CPA
SCIENCE	TS
*ART – for Nepalese pupils only	

Appendix K

Summary of School Data

	Schools									
	A	B	C	G	H	K	Q	S	T	Y
a) No of Express Classes	14	12	29	12	14	16	19	16	7	16
b) No of Normal Academic Classes	11	13	4	15	11	11	14	15	10	11
c) No of Normal Technical Classes	5	8	4	8	7	4	7	6	6	7
d) Ave No of students in classes										
i) Exp	36	36	40	37	36.1	40	40	35.5	30	36.7
ii) NA	40	38	40	32	35.5	39.9	38	37.1	38	36
iii) NT	36	34	40	37	34	34.3	38	35.7	38	37
e) Range of PSLE scores for NT cohorts										
i) Sec 1	69 – 151	59 – 153	149 – 199	129 – 151	75 – 136	80 – 154	69 – 154	129 – 158	75 – 146	82 – 151
ii) Sec 2	88 – 150	67 – 152	155 – 199	123 – 157	63 – 151	79 – 151	73 – 155	126 – 154	64 – 131	71 – 151
iii) Sec 3	81 – 150	75 – 183	100 – 154	122 – 151	64 – 153	88 – 109	81 – 150	119 – 150	80 – 134	95 – 151
iv) Sec 4	90 – 150	50 – 169	103 – 152	No data	64 – 151	81 – 151	88 – 151	88 – 151	68 – 150	94 – 151

Appendix L

Summary of Records for 'Audit Trail'

Details	References	File Name	Soft-copy File Name
Code name for participants and schools	CN-P-S	Data File	Data Collection
Transcript – Annex H	School B - int 1 - 21/5/2004 OC/TR/H	Data File	Data Collection
Transcript – Annex I	School Y – int 2 – 11/6/2004 OC/TR/I	Data File	Data Collection
Transcript – Annex J	School A – int 3 – 29/7/2004 OC/TR/J	Data File	Data Collection
Transcript – Annex K	School S – int 4 – 17/10/2006 OC/TR/K	Data File	Data Collection
Transcript – Annex L	School T – int 5 – 30/11/2006 OC/TR/L	Data File	Data Collection
Transcript – Annex M	School G – int 6 – 07/11/2006 OC/TR/M	Data File	Data Collection
Transcript – Annex N	School Q – int 7 – 05/01/2007 OC/TR/N	Data File	Data Collection
Transcript – Annex O	School K – int 8 – 15/01/2007 OC/TR/O	Data File	Data Collection
Transcript – Annex P	School C – int 9 – 11/06/2007 OC/TR/P	Data File	Data Collection
Transcript – Annex Q	School H – int 10 – 27/08/2007 OC/TR/Q	Data File	Data Collection
Appendix B, C & D – Interview Schedules	Appendix B, B1, C, D, D1, D2, D3, D4	Data File	Data Collection
Informed Consent	Appendix G	Data File	Data Collection
Requests for Documents	Appendix H	Data File	Data Collection
Data Collection	Appendix F	Data File	Data Collection
Demographics	Appendix E	Data File	Data Collection
Axial & Selective Coding – Theoretical Memo and Code Notes	ASC-TM-CN	Data File	Analysis
Concepts from Open Coding	OC - Concepts	Data File	Analysis
Labels from Open Coding	OC - Labels	Data File	Analysis

List of Codes	List of Codes	Data File	Analysis
Documents from Schools	Doc A, B, C, G, H, K, Q, S, T, Y	Data File	Data Collection

To him be glory both now and forever! Amen.
2 Peter 3:18