Atlantic Evaluation and Research Consultants

INTERMEDIATE PROGRAM REVIEW

Final Report
Submitted to the
Department of Education
Newfoundland and Labrador

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EXECUTIVE SUMMARY

The Intermediate Program Review was commissioned by the Newfoundland and Labrador Department of Education in October, 2007. Its main purpose was to determine the degree to which current programming meets the needs of the adolescent learner. The review included an examination of the current curriculum, delivery models, professional development and learning resource needs, and district policies related to student promotion and retention. The work of the review groups consisted of literature review, consultations with stakeholders, comparative analysis of intermediate programs in other jurisdictions, surveys of students, teachers, principals and parents and an analysis of data bases on enrolments, teachers and teacher assignments and student achievement.

A summary of the main research questions and a brief response to each is given in the following table. A summary of the recommendations follow.

Summary of Responses to Research Questions

Question	Response
What is the nature of the intermediate learner?	Students at this level are rapidly developing and are at widely different stages of development.
What are the effective teaching methods that meet the needs of the adolescent learner?	There is conflicting evidence on teaching methods but it is clear that active engagement of students is necessary. Teaching that is structured so as to optimize time on task is key to high quality instruction.
Do gender differences exist?	Girls develop more rapidly than boys at this age.
What curriculum design works best for students at the intermediate grade levels?	There is no evidence on optimum curriculum design, but a need exists for greater flexibility to meet the wide range of developmental levels.
What effect do different grade configurations for a school have on student achievement and educational outcomes?	Apparently none. Middle school advocates argue for a grade 6-8 configuration but the evidence for this is soft.

Question	Response
How do variables such as educational programming, services, class size, teaching strategies, and transitions in and out of the intermediate level affect the educational outcomes of the intermediate learner?	A large number of factors appear to have small incremental effects on achievement. However, these factors are inter-related and their cumulative effects are not well enough known to suggest any combination of class structures, teaching methods or other factors within the control of schools that would optimize outcomes. The key seems to be finding ways to maximize student engagement with learning.
What teacher preparation programs at the post-secondary level best prepare teachers for teaching at the intermediate level?	Intermediate is not a separate program in any teacher education program that we know of. This level is typically combined with secondary and perhaps therefore does not receive adequate attention. Although there is some sentiment favouring a middle school approach to intermediate teacher education, there is a strong preference for subject specialists at the intermediate level and some evidence that this positively affects outcomes.
How is the intermediate program delivered on a provincial level in terms of curriculum design and content, focus, breadth, suitability and availability of resources?	The intermediate program is currently quite inflexible, though there is some indicating that some schools are not offering some of the subjects listed. There is preference for a subject-based rather than an integrated program and little indication that integration can be easily implemented on a large scale.
What are the differences between districts in the delivery model for the intermediate program?	We saw little evidence of district differences and did not spend much effort in attempting to identify these differences.
How is student achievement at the intermediate level affected by factors such as class size; out-of-field teaching; teaching strategies employed; teacher professional development; teacher pre-service training; evaluation and assessment practices; the learning environment; grade configuration; understanding of the adolescent learner; rural and urban differences; and gender differences?	Class sizes vary widely across the province. No significant class size differences in achievement can be detected in local data. Class size is confounded with rural/urban, SES and other effects but is clearly not an overriding factor in achievement at this level. There is evidence of gender and urban/rural differences in achievement. These differences are being examined in more detail in a parallel study with a report to be completed shortly. The largest effect seen in this study was that between attendance and student marks. A high level of absenteeism is strongly associated with lower achievement.

Question	Response
To what extent is the intermediate program leading students to either drop out or choose an inappropriate program at the high school level?	We were not able to find evidence on this. Few students drop out of school at the transition from intermediate to senior high.
How are the needs of exceptional students met at the intermediate level?	This issue was not pursued at length, in light of the recent Pathways report. We did focus on attempting to make the program more flexible and on addressing both remediation and enrichment through a bridging program and by opening access to high school courses for intermediate students.
How does the intermediate curriculum and the context in which the curriculum is delivered in Newfoundland and Labrador compare with other Canadian jurisdictions?	The curriculum in other jurisdictions is similar to but generally slightly narrower than that in this province. More subjects are offered as electives. There is some evidence that the number of outcomes covered within subjects is greater locally than in other provinces. Both of these differences are consistent with the widespread perception that the curriculum in this province is too crowded. We found strong differentiation in perceived importance of difference subjects on the part of all survey groups and consistency in these perceptions across the groups. We took this as providing good evidence in determining what subject should be core and which elective.

SUMMARY OF RECOMMENDATIONS

1. **That the current grade 7-9 configuration continue to be the basis for intermediate school programming in the province.**

2. **That grade configurations in schools continue to be based on geographic, demographic circumstances and space utilization requirements.**

3. **That the intermediate curriculum continue to be subject-based.**

4. **That the intermediate curriculum be restructured into core and elective courses.**

5. **That among the current subjects, art, music, home economics and religious education be considered electives**

6. **That health and physical education be combined and that enterprise/ economic education be discontinued and its content integrated with social studies.**

7. **That the intermediate program be based on specific time allocations rather than on percentages of total time. As a tentative model, we offer the following schedule, based on a 1500 minute school week. This may be translated into school cycles at the discretion of the school.**

Subject	Minutes per week
English language arts	300
Mathematics	300
Science	150
Social studies	150
French	150
Health/physical education	150
Technology	100
Electives	200

8. **That the Department of Education conduct a more detailed comparative review of intermediate curriculum documents in the core areas to determine which areas are repetitive or suitable for streamlining.**

9. **That the Department of Education include within curriculum documents an indication of areas which may lend themselves to curriculum integration. The most obvious of these is the inclusion of outcomes which address the use of language skills across the curriculum.**

10. **That a bridging program be developed in each of English language arts and mathematics to be taken, in addition to the regular courses in these areas, by students entering the intermediate grades who are not performing at grade level expectations. These courses would be offered in the times allocated for electives for these students and be available to students in all three grades as needed.**

11. **That students in the bridging program be exempted from core French if required to find time to take part in the bridging program.**

12. **That intermediate students be allowed access to selected high school credit courses either as electives or through accelerated progress through appropriate subjects within the intermediate program but that students not be exempted from any non-elective subjects within the intermediate program in order to take high school courses.**

13. **That current courses in music, fine arts, industrial arts, career exploration and selected other areas be structured as modules to facilitate their offering on flexible schedules, combining students across grades where necessary.**

14. **That intermediate teachers be considered mainly subject specialists and that the goal in school staffing be to assign teachers in accordance with their areas of specialization.**

15. **That the Department of Education develop guidelines for establishing a system of teacher advocates/advisors for intermediate students and encourage schools with intermediate grades to appoint teachers to these roles.**

16. That Department of Education curriculum documents reflect the idea that the main goal of teaching is to establish a classroom environment which minimizes lost time and maximizes student engagement. Specific recommendations on teaching strategies within curriculum documents should be accompanied by discussion of ways to implement such strategies without detracting from that goal.

17. **That the guidelines on homework differentiate between acceptable weekly assignments at elementary, intermediate and high school levels, with intermediate assignments to include a range acceptable by respondents to the intermediate surveys.**

18. That Directors of Education be reminded that they are required to report instances of chronic unexcused absenteeism and that Department of Education officials work with other relevant government departments and agencies to develop a process under which parents are held accountable for unexcused absenteeism.

19. That the Department of Education, school districts and schools develop a plan to ensure that CRT results reach the parents of all students who take the tests.

20. That reports to parents of CRT results be simplified, reducing the number of different scores and scales and that reports include sufficient information to ensure that parents can make sense of the results.

21. That the grade 6 CRT results be used, in conjunction with other diagnostic tools, as a means for deciding whether students entering grade 7 should be advised to elect the proposed bridging courses in English language arts and mathematics.

22. That the Department of Education focus its efforts to improve achievement on schools which show a consistent pattern of low performance on the CRTs.

23. That the Department of Education update its document on the evaluation of students in the classroom, focusing on the use of a variety of assessment techniques, frequent and immediate feedback and on how to judge student performance realistically in relation to the achievement of curriculum outcomes.

24. That the Department of Education initiate an external expert review of the CRTs, in comparison with other provincial assessments and in relation to current standards for development and use of large scale assessment instruments.

25. That the Department of Education conduct research studies designed to document the incidence of both everyday disruptions which interfere with effective classroom functioning and severe instances of bullying, harassment, or illegal behaviour (including Internet activities) affecting students or school staff.

26. That the Department of Education initiate a review of the student and parent section of its Web site with a view to presenting material on curriculum, assessment and other important initiatives in a compact and simple form explicitly intended for a parent audience. The simple documents should include links to more detailed documents.

27. That the Department of Education coordinate efforts to ensure that information no important policy and program changes is available through links on the Web pages of districts and schools.

28. That, for major policy or program changes, hard copies of simple documents such as brochures be prepared and widely disseminated to schools, households and the media.

29. That the Department of Education engage in discussions with the Faculty of Education at Memorial University with a view to ensuring that components be added to the intermediate/secondary teacher education program which would explicitly address the concerns about intermediate teacher education expressed in this study.

30. That the Department of Education establish a working group, which would include the NLTA and other stakeholders, with a view to opening the certification scale to credit for approved professional activities.

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ACKNOWLEDGEMENTS

This report could not have been completed without the participation of a large number of people. We are grateful to all who provided the core data for the evaluation by participating in the focus groups and preparing written submissions.

The surveys could not have been conducted without the cooperation of the students, teachers, principals and parents who were asked to respond, the principals who distributed and returned the questionnaires and Department of Education staff who coordinated the mailing.

We are also grateful to staff members Kim Barnes, Roberta Gill, Ryan Hancock, Chris Melendy, Maxine Reccord-Pinhorn, and Pearl Vokey who conducted the parent survey and the data entry.

We are particularly pleased to acknowledge the contributions of Kerry Pope for always having at his fingertips the data on schools, teachers and students that are essential to studies of this nature and of Bob Gardiner for advice throughout the project.

RESEARCH TEAM

Members of the research team have had a variety of experiences in the education system of this province as teachers, principals, district and Department of Education officials and researchers. We have been able to draw on these experiences to help interpret the results of the study in a way we hope will be of value to policy makers.

James Crewe conducted most of the comparative analysis other than the curriculum work which was completed by Lloyd Gill. David Dibbon was

responsible for the literature review and for the teacher and principal surveys. Bruce Sheppard and Wade Sheppard conducted the interview and focus group work. Bruce Sheppard was also responsible for the student survey. Robert Crocker and Janet Crocker conducted the parent survey. Janet Crocker was also responsible for most of the logistical and editorial work. The project was directed by Robert Crocker, who is also responsible for the final report.

I INTRODUCTION

Purpose

The Intermediate Program Review was commissioned by the Department of Education, Newfoundland and Labrador in October, 2007. Its main purpose was to determine the degree to which current programming meets the needs of the adolescent learner. The review included an examination of the current curriculum, delivery models, professional development and learning resource needs, and district policies related to student promotion and retention. The work of the review groups consisted of literature review, consultations with stakeholders, comparative analysis of intermediate programs in other jurisdictions, surveys of students, teachers, principals and parents and an analysis of data bases on enrolments, teachers and teacher assignments and student achievement.

Background

Through discussions with school district personnel, as well as intermediate administrators and teachers, the Department of Education has identified some common concerns. These include appropriateness of the curriculum, teaching strategies, teacher professional development, pre-service teacher education, evaluation and assessment practices; the learning environment; grade and class size (including multi-age) configurations, and the inherent differences between rural and urban school environments. The call for a research project was intended to provide an opportunity to critically assess the province's intermediate program by examining current programming, policies, services, directions, and organizational efficiencies and resource capabilities. It will also validate its strengths and identify opportunities for improvement.

Research Questions

The research team was asked to pursue the following main areas of inquiry:

- Conduct a summary of research in intermediate teaching and learning to include but not be limited to the following questions:

  - What is the nature of the intermediate learner? What are the effective teaching methods that meet the needs of the adolescent learner? Do gender differences exist?
  - What curriculum design works best for students at the intermediate grade levels?
  - What effect do different grade configurations for a school have on student achievement and educational outcomes?
  - How do variables such as educational programming, services, class size, teaching strategies, and transitions in and out of the intermediate level affect the educational outcomes of the intermediate learner?
  - What teacher preparation programs at the post-secondary level best prepare teachers for teaching at the intermediate level?

- Conduct a review of the province's intermediate program, including a comparative analysis of the provincial intermediate programs across Canada and in other specified countries, will include but not be limited to the following questions:
  - How is the intermediate program delivered on a provincial level in terms of curriculum design and content, focus, breadth, suitability and availability of resources?
  - What are the differences between districts in the delivery model for the intermediate program?
  - How is student achievement at the intermediate level affected by factors such as class size; out-of-field teaching; teaching strategies employed; teacher professional development; teacher pre-service training; evaluation and assessment practices; the learning environment; grade configuration; understanding of the adolescent learner; rural and urban differences; and gender differences?
  - To what extent is the intermediate program leading students to either drop out or choose an inappropriate program at the high school level?
  - How are the needs of exceptional students met at the intermediate level?
  - How does the intermediate curriculum and the context in which the curriculum is delivered in Newfoundland and Labrador compare with other Canadian jurisdictions?
  - How does the intermediate curriculum and the context in which the curriculum is delivered in Newfoundland and Labrador compare to that of other international jurisdictions?

- Carry out an analysis of strengths and challenges of the current intermediate curriculum in Newfoundland and Labrador

    - This analysis would come from, (i) the aforementioned research, (ii) the aforementioned jurisdictional comparative analysis, and (iii) consultations with identified stakeholders.
    - Consultations will occur at the provincial level, and will include appropriate representatives from the upper elementary, intermediate and high school levels within all school districts and encompassing representative regions of the province. These consultations also will include focus groups comprised of administrators, teachers, guidance counselors and others as identified by district personnel.

- Make recommendations intended to strengthen all aspects of the intermediate program in Newfoundland and Labrador

    - These recommendations would come as a result of the research, the comparative analysis, as well as the consultations.

Review Framework

Table 1.1 gives a framework developed by the research team designed to identify the main strands of the study and components within these strands.

Table 1.1
Intermediate Program Review Framework

Strand	Components	Sub-components
Learner	Psychology of adolescence	Developmental stages, Socio-cultural aspects, Learning styles
	Aspirations	Graduation, post-secondary, career
	Differential performance/attitudes	Gender, rural/urban, school size, other
	Exceptionalities	Remediation and enrichment
Teacher	Teacher education	Pre-service
		In-service
	Assignment and specialization	Teaching assignments/workload
		Subject specialization
Curriculum	Structure	Established outcomes; The provincial curriculum; curriculum comparisons
	Content	Scope and sequence; depth and

		breadth, course choice
	Subjects/integration	Core, other
	Resources	Text, media, other
	Time allocations	Overall allocations; lost time
Instruction	Strategies	Generic teaching strategies
	Tactics	Student/teacher interaction; use of time
	Exceptionalities	Course modification, other interventions
Assessment	Policies and practices	School & classroom, district, provincial, national, international
	Use	Formative, summative, individual, system
	Results/trends	Urban/rural, gender, school size, time trends, socioeconomic gradient
Delivery	Planning Initiatives	Provincial, district, school
	School development	School improvement initiatives
	School context	Class size
		Student/teacher ratio
		Grade configurations
		Homeroom versus specialist teaching
	Access to education	Urban/rural gap; socioeconomic gap
Other	External demands on the school/ quasi-curricular requirements	e.g. role of interest groups; smoking; drugs; bullying, preservation of local schools/communities

Overview of Methodology

The range of issues to be addressed in this study was quite broad, requiring an equally broad range of research methods. Since it is not possible in policy studies, with fixed time frames and resources, to do original research on major issues of teaching and learning, the focus of the methodology was mainly synthetic, comparative and consultative. Synthetic work included the literature review and document analysis as well as efforts to compile summary data describing the system (e.g. demographics, school sizes and configurations, assessment results). Comparative analysis involved examination of program structures, curriculum and delivery systems in other jurisdictions, with a view to identifying "best practices" and determining their adaptability to the local setting. Focus groups, key informant interviews and surveys will comprise the consultative component.

Each of the main research methods was designed to contribute to several of the components of the framework. Rather than preparing chapters based on each of

the methods and data, this report is organized into themes corresponding to main areas of the framework. All information relevant to a theme, no matter what the source, is collected into each chapter. A series of background reports has been prepared to convey the detailed results from each of our data gathering activities.

II THE NATURE OF EARLY ADOLESCENCE

What Does the Literature Tell Us?

Early adolescence is a time of great changes. In trying to define this distinctively transitional stage of development, Eichhorn coined the term "transescence" to describe the passage from early childhood to adolescence (Bowers, cited in Wavering, 1995). Others have used terms such as "pubescence" and "emergent adolescence", but "early or young adolescence" appear to be the most common terminology gleaned from the literature (Knowles & Brown, 2000).

Young adolescents between the ages of 10 and 14 years have specific developmental characteristics that are unique to them. The National Middle School Association (2003) and others (Allen, Splittgerber & Manning, 1993; Eccles & Wigfield, 1997; Jackson & Davis, 2000; Romano & Georgiady, 1994; Wiles & Bondi, 1993) outline notable characteristics of young adolescents in the physical, cognitive, moral, social-emotional and psychological dimensions of development. While most adolescents will exhibit these characteristics to some degree, they will vary depending on the individual. Jackson and Davis (2000) maintain that these characteristics are intertwined, each one affecting the other while being affected by other factors such as gender, race, social economic status, and qualities of the community.

Wiles and Bondi (1993) suggest that there are more biological changes in young adolescents than any other age group with the exception of children in their first three years of life. Furthermore, studies in the rates of puberty show that today's youth mature much earlier than in previous generations (Romano & Georgiady, 1994). Growth spurts generally begin for girls at approximately age ten and age twelve for boys, while weight gains can equal as much as ten pounds per year (Walker & Lirgg, 1995). Knowles & Brown (2000) conclude that skeletal and muscular changes often result in "the awkward stage" characterized by adolescents with long legs, underdeveloped muscles, huge feet and long hands. The rapid physical growth results in adolescents tiring more easily, requiring frequent rest periods and eating more (Romano & Georgiady, 1994). It is also during this transitional period that adolescents develop primary and secondary sexual characteristics. In addition to sex hormones, other hormonal secretions

occur which can cause lethargy if under-active and extreme energy if over-active (Knowles & Brown, 2000). Some researchers have found direct links between these hormonal changes and behaviours such as aggression and mood swings (Eccles & Wigfield, 1997).

Understanding young adolescents' physical development leads to several teaching and learning considerations (Allen, Splittberger & Manning, 1993). Wiles and Bondi (1993) maintain that providing a health curriculum that emphasizes self-understanding about body changes is essential. Moreover, due to the pre-occupation of many adolescents with their bodies and subsequent issues of self-esteem that may result, teachers and guidance counselors can help students work through these feelings (Wiles & Bondi, 1993). Furthermore, students should be allowed to move around frequently in classes and long periods of passive work should be avoided (Knowles & Brown, 2000).

In addition to the physical changes that take place during adolescence, cognitive changes are occurring as well. Knowles and Brown (2000) assert that Piaget provides the clearest picture of what may be happening cognitively during this transitional period. The development stages suggested by Piaget have major implications for young adolescents (Knowles & Brown, 2000). These stages include: sensorimotor (birth to two years), preoperational (two to seven years), concrete operational (seven to eleven years) and formal operational (twelve years to adulthood) (Eccles & Wigfield, 1997; Knowles & Brown, 2000; Milgram, 1992; Romano & Georgiady, 1994; Wavering, 1995). From Piaget's work, it would seem that most adolescents function at the concrete and formal operational stages, while some adolescents with cognitive impairment may still operate at the preoperational stage. The implication is that great variation in level of cognitive development is to be expected among young adolescence.

A number of notable characteristics are associated with the intellectual development of young adolescents (Romano & Georgiady, 1994). Those in the concrete stage, still need direct experiences and benefit from real as opposed to abstract objects or thoughts (Milgram, 1992). Knowles & Brown (2000) recommend the use of manipulatives and hands-on activities for middle school students in the concrete stage. In the formal operational stage, Eccles and Wigfield (1997) suggest "the most important cognitive changes during this period relate to the increasing ability of children to think abstractly, consider the hypothetical as well as the real, engage in more sophisticated and elaborate information processing strategies, consider multiple dimensions of a problem at once, and reflect on oneself and on complicated problems" (p. 18). It is important to note that during this transition period students' cognition slip in and out of stages and may not be consistent across subjects.

These variations in intellectual development have great implications for instruction. Jackson and Davis (2000) affirm that middle school teachers can support the intellectual development of young adolescents by differentiating instruction; providing cooperative learning opportunities; encouraging students to pursue their own interests; giving one-on-one feedback through regular student-teacher conferences and focusing on complex thinking skills that encourage students to apply their knowledge and skills to worthwhile tasks.

Closely related to cognitive development is the area of moral development. Kohlberg, taking up where Piaget left off, studied the development of moral reasoning. Kohlberg's well known six stages include: avoiding punishment, seeking reward, social approval, law and order, social contract, and universal ethics (Wavering, 1995). At stage one, individuals make moral decisions to avoid punishment. In stage two, individuals act based on being rewarded for certain behaviours. Stage three sees individuals making decisions to receive social approval. At stage four, individuals make judgements based on law and order. In stage five, individuals act based on the social contract of doing to others as they would want done to them. An individual working at stage six would act based on the universal ethic of compassion for humans. Most adolescents would be between stages three and five (Wavering, 1995). One of the criticisms of Kohlberg's work has been the exclusion of the study of girls in the development of the six stages (Bowers, 1995). It is thus not clear if there are qualitative differences between boys and girls in rate of progression through these stages.

In attempting to explore moral development further, Gilligan and colleagues (as cited in Bowers, 1995) suggest that humans tend to construct a moral perspective in one of two ways. Firstly, individuals may focus "on a justice perspective that is concerned with inequality, unfairness, and individual rights" (p. 101). Secondly, individuals may focus "on a care perspective that views moral questions in terms of disconnection and abandonment, the importance of relationships with others, and being responsive to one another's concerns" (Gilligan, as cited in Bowers, 1995, p. 102). Johnson (as cited in Bowers, 1995) concludes that young adolescents may employ either of the two while discerning moral questions. However, individuals do tend to favour one over the other. Males are more likely to emphasize a justice perspective while females tend to favour a caring perspective (Johnson, as cited in Bowers, 1995). Adolescents can sometimes experience uncertainty and anxiety as a result of their moral development since in adolescence they begin to develop their own views which may be in conflict with previously held standards or values (Romano & Georgiady, 1994).

Gaining an understanding of the nature of young adolescents also necessitates an examination of their social-emotional development. Bowers (1995) concludes that

adolescence is a time when young adolescents are "looking at and relating to others in new ways (social development) and becoming aware of his or her feelings at a much deeper level than before (emotional development)" (p. 79). Adolescents, in their attempt to move from dependence to independence, begin to broaden social affiliations "with allegiance split between the family and the peer group" (Knowles & Brown, 2000, p. 23). This move to greater independence is often characterized by a rejection of adult authority (Romano & Georgiady, 1994). Interestingly though, according to Knowles and Brown (2000), despite the adolescents' apparent rejection of parental authority, "parents continue to play a primary role in the young adolescent's life" (p. 24), with adolescents almost universally identifying their parents as the most important people in their lives.

Due to the importance of social acceptance during this period, adolescent conformity to their peers peaks during early adolescence (Eccles & Wigfield, 1997). The peer group becomes "the primary source of new standards and models of behaviour" (Knowles & Brown, 2000, p. 25). In fact, Harter (as cited in Eccles & Wigfield, 1997) maintains that "young adolescents' confidence in their physical appearance and social acceptance is often a more important predictor of self-esteem than confidence in their cognitive/academic competence" (p. 19).

Knowles and Brown (2000) claim that "in addition to the need for successful peer interaction comes an increased awareness of the broader social world with an accompanying concern for social justice" (p. 26). While parents may seem to have less influence in the lives of their children, these young adolescents will listen to and model other adult influences whether they be teachers, community members or parents of friends. In this regard, adults have a huge influence over adolescents and can lead them in positive directions.

An examination of adolescents' social development would not be complete without the acknowledgement of the huge impact that mass media (television, movies, music, internet) has on their world. The Carnegie Council (as cited in Knowles & Brown, 2000) concludes that "these electronic conduits for programming and advertising have become strong competitors to the traditional societal institutions in shaping young people's attitudes and values" (p. 27).

Family, peer groups, community and media all play a role in assisting the young adolescent develop a sense of self (Knowles & Brown, 2000). This search for identity is one of the defining characteristics of young adolescents (Eccles & Wigfield, 1997). Identity development can prove especially difficult for minorities since cultural values may vary from societal norms (Gay, as cited in Knowles & Brown, 2000). Educators can assist adolescents in their quest for meaning and identity. As adolescents explore their identity, it is important to present them with

many opportunities to explore options (Knowles & Brown, 2000). Additionally, Knowles and Brown (2000) further contend that "teachers must deliberately create learning environments that attend to cultural, ethnic and racial issues" (p. 30).

Inconsistencies in behaviour, sensitivity to criticisms, moodiness, a heightened sense of self-consciousness and a desire to seek self-identity are some of the emotional/psychological characteristics common among young adolescents (National Middle School Association, 2003). A comprehensive understanding of these characteristics is essential to middle school educators.

The Consultations

Many of the points made by interview and focus group respondents correspond, in a more concrete way, to what the psychological literature indicates.

There was general agreement among these respondents that young adolescent learners are a challenge to teach because they are going through significant physical and psychological changes. The challenge is compounded because the onset and ongoing nature of these changes varies considerably. A number of participants commented that the beginning of adolescence occurs at a much earlier age than in the past. Today, for some students, puberty commences in grade 5.

Many agreed with one senior educator who commented that during the adolescent years "the tree is being bent significantly ... adolescents are confused about who they are and as a result they are unsure of themselves and apprehensive." One focus group participant pointed out that family life makes a big difference in the lives of young adolescents. Since family remains important to early adolescents, despite an emerging independence, those from less fortunate backgrounds have jaded expectations compared to those from sheltered home environments. These students may not want to accept help because they have been hurt.

It was frequently reported that many intermediate students, especially boys, are unable to focus for longer periods of time. They also challenge things that appear to lack relevance to their lives. Many young adolescents question the relevance of schoolwork and lose interest in school. Some of the disaffected go on to become behaviour problems. The following comment summarizes accurately the general held view of those teachers and administrators who work with intermediate students:

> *The junior high student is not focused on the goal of education. Elementary children are more easily led by the teacher while the junior high kids are less focused and more independent. It is at this stage, as well, that levels of maturity vary the most. As a result it is quite difficult to meet the diverse needs of this group.*
> (Grade 7-12 school principal)

A principal of a large intermediate school commented on the difference in attitude between those in grade 7 compared to grade 9. Her experience is that "98 percent of grade 7 students come in with a positive attitude so we do as many things as possible to promote school as fun and interesting to keep up their level of motivation … as adult interests take hold we can't keep them as interested ... fewer of them are as interested at grade 9 as they are at grade 7." The same principal also commented that, through grades K-6, students are intrinsically motivated, but as they progress through intermediate they are increasingly motivated by extrinsic factors.

A fair number of respondents reported a major difference in maturity levels between grades 7-8 and grade 9. During the summer in which students finish grade 8, many feel that a significant change occurs, and at that time grade 9s come to have much more in common with the grade 10s than with the 8s.

Emotional Characteristics: A principal of a small K-12 school suggested that adolescents thrive on encouragement. She emphasized that young adolescents feel vulnerable and a focus must be placed on engaging them in extracurricular activities, giving them responsibility, and demonstrating they can be trusted in order to enhance their self concept and self worth. Other participants pointed out that "everything is a drama" to early adolescents. They react emotionally to events and tend to exaggerate their responses. One participant described young adolescents as walking – talking paradoxes, constantly doing mental gymnastics to reconcile their needs for independence with confirmation. Others commented that this age group wants to be invisible but also wants to stand out.

A teacher in one of the focus groups reported that adolescents like to lead adults to believe they are older than their actual age and cautioned that we must remember they are still children. One senior district administrator commented that during adolescence, learners have many unanswered questions in their minds about what schooling is all about. This requires us to re-think the linkage between schools in middle years and what happens subsequently in life. We need to instill personal self-discipline and a balance in lifestyle and fitness. Many participants commented that the adolescent's need for connectedness and relationships run deep. A principal noted that it is not unusual for members of this age group to

have love-hate relationship with their teachers.

Social Characteristics: Quite a few respondents indicated that young adolescents are full of zeal and energy and that socialization is extremely important to them. Friends are paramount and isolation from the peer network is very traumatic. A Director of Education observed that young adolescents are more focused on pleasing their peers than parents or other adults. Focus group participants indicated that young adolescents are beginning to exert a new level of independence from adults. Adolescents test boundaries and push the envelope and need to feel that they have the freedom to make their own choices. They look for adults to demonstrate value for that which they (adolescents) choose as important rather than what adults choose. One person remarked, "at this age it is not cool to care about what adults believe is important." Some focus group participants described adolescent students as anti-authority, but not in a disrespectful way. This manifests itself more so as a lack of responding to authority (e.g. yes, you caught me smoking, but so what?). Some participants referred to risk-taking behaviour among adolescence such as experimentation with sex, drugs, and alcohol.

The adolescent mind-set creates a particular challenge for teachers and parents who have to find an acceptable balance between control and student independence. Most respondents noted that this balance is difficult to achieve and, as a result, student disruptive behaviour, drug-related youth issues, and related violence and bullying represent a serious challenge to the school system at the intermediate school level. A former Director of Education suggested that students at this age become much more aware of other children in terms of their physical attractiveness, social standing, clothing and other material resources. Those considered to be less fortunate often become marginalized and sometimes drift into more unacceptable activities and behaviours.

Various other key informants and focus group participants commented that young adolescents pick up quickly on whether or not teachers like them. If they can connect with a teacher they will generally still try to please. Others commented that intermediate students are learning how to react to situations and that at times their reactions and comments may be awkward or inappropriate.

Physical and Behavioural Characteristics: Intermediate students vary in terms of physical development as much as they do in emotional maturity. One teacher compared two grade 9 male students; one who is quite diminutive and still plays with toys and a second who is over six feet tall, dates, and shaves regularly. While this may the extremes at the grade 9 level, since many by that time have grown to near full maturity, the difference is closer to the norm between grade 7

and 9 students.

Many in the focus group and key informant sessions spoke about the young adolescents' internal clock, indicating that, unlike primary and elementary students, early morning is not their most alert time of the day. Many do not become fully engaged until at least 10:30 a.m., and they are only waking up during the morning recess. The need for frequent physical movement was also commented on by a large number of participants. A number of principals indicated that, mainly for this reason, they arrange for students to move from room to room, between class periods, instead of having the teachers move. On the other hand, some principals found that this practice resulted in too much unruly behaviour and lost instructional time. The need to jostle, carry on (e.g., punching), especially among boys, was reported to be strong. These behaviours sometimes lead to fights among friends which may start out innocently but escalate to full blown confrontations. One principal reported that boys sometimes need to be reminded to keep their hands to themselves.

While student behaviour problems may appear to be more pronounced in the urban schools, principals of mid to large size rural schools expressed similar concerns and emphasized that the system has not been able to respond adequately to the challenges. Several principals suggested that low expectations related to student misbehaviour have been normalized. As well, they observed that this is compounded when students begin their intermediate experience with an accumulation of unachieved learning objectives from elementary school.

Gender Differences: There was a consensus that, in general, boys are less focused on school work than girls and that females participate "better and more." It was reported that girls can pay attention and stay focused longer, while boys need a change every twenty minutes or so. One K-12 principal used the example that, in terms of Governor General Award recipients, there was a 5:1 ratio in favor of girls. Another principal indicated that, over the last few years, ninety percent of academic scholarships in his school have been awarded to females.

A number of people suggested that in our zeal to address gender imbalance, going back to the 1980's, the school system may have unwittingly neglected the needs of male intermediate learners. Prior to this decade, boys outperformed girls in science and mathematics. In attempting to correct this imbalance, it appears that we now have the opposite reality where girls outperform boys in practically all subject areas. Several principals suggested that a new strategy is needed to bring about a balance between the genders in terms of achievement. One director suggested that traditional transmission approaches to teaching and learning remain dominant and such approaches appear to be better suited to how girls

learn.

A least a couple of participants suggested that there may be compelling reasons to segregate males and females. We lose males in the way we structure classrooms and maybe single gender classes would be a more effective grouping model. The same participants suggested compelling reasons to remain with the coed model. They cited the needs of the sexes to socialize together and wondered if the segregated model would require that males teach males and females teach females.

Girls were described as generally being far more interested than boys in emotions and feelings, more inspired, better listeners, and as not having the same need for movement as boys. One teacher remarked that intermediate level girls tend to form dating relationships with boys from senior high while male classmates are left to wonder where their female classmates are during non-school time. A principal of a large intermediate school reported that in group projects girls generally will do most of the work. Guys generally ask "why do we have to do this?" The principal indicated that "guys are content with minimum success … leadership is also non-existent among fellows ... we have 32 students involved in student leadership activities and only three are guys … 80 percent of attendees at student leadership conferences are females … guys are just not interested." One teacher remarked that male leadership does exist but is usually manifested "below the surface." She speculated that boys do not want to stick out as leaders and will lead from behind the scenes.

While most principals noted that behaviour problems were more common among boys, the view was widely expressed that when girls exhibit negative behaviours, these are often much more serious and more difficult to remediate. Several principals observed that the guidance counselor spends more time dealing with girls, particularly with respect to social relationships and cyber bullying.

Implications for Schooling

Many of the points made in the review of literature about early adolescent development are straightforward enough, since they document obvious physical and socio-emotional changes that occur around ages 10-14 and the individual variations in the timing (though not the pattern) of these changes. On the other hand, the literature on cognitive and moral development takes on a much more theoretical flavour. The work of Piaget, Kohlberg and others, while not without some empirical backing, gives us little in the way of concrete direction to guide teaching and learning. Part of the problem lies in the rapidity of change at these

age levels and the variation in the pace of change. Taking Piaget's stages as an example, the fact that a teacher may have in a classroom students who range from the pre-operational to the formal operational stage tells us little except that this is an extremely complex and challenging environment in which to teach. One might conclude that the most obvious implication for teaching from Piaget's stage theory is that classrooms should be organized by developmental level rather than age or grade in the traditional sense. However, as far as we can tell, this has never been done on a large scale so there is no evidence how workable such an organization might be or if it would ever be accepted by a public accustomed to an age-based structure.

It is reasonable to argue that teachers should be exposed to theories of adolescent development as part of their professional education and that they should be conscious of the variation that is likely to be found in the typical intermediate classroom. The same can be said for those responsible for curriculum development, guidance and other services in the school. However, the focus groups and interviews indicate that there is no lack of knowledge of these issues on the part of teachers, principals and others in the field. The difficulty is translating this knowledge into practices that can maximize learning while minimizing the trauma that seems to accompany the journey into adolescence for many students.

While we do not believe that definitive prescriptions for teaching and learning can be derived from the literature on adolescence, a number of general points may be made which can inform the remainder of the report.

- Students at the intermediate level are at a stage of rapid transition from childhood to adolescence. This occurs at different rates for different individuals and it is to be expected that intermediate teachers will encounter a wide range of ability to deal with the more abstract aspects of academic work.

- In particular, there are substantial differences in the rate of development of girls and boys at this stage. It should not be surprising that boys are less motivated than girls and that this has an impact on performance.

- Many of the behaviour problems encountered at this age are a consequence of this transition. Most students will eventually mature and find their place without long term problems.

- Curriculum and instruction should be designed to capture the interests of early adolescents. A larger repertoire of teaching techniques is likely required at this level than at other levels.

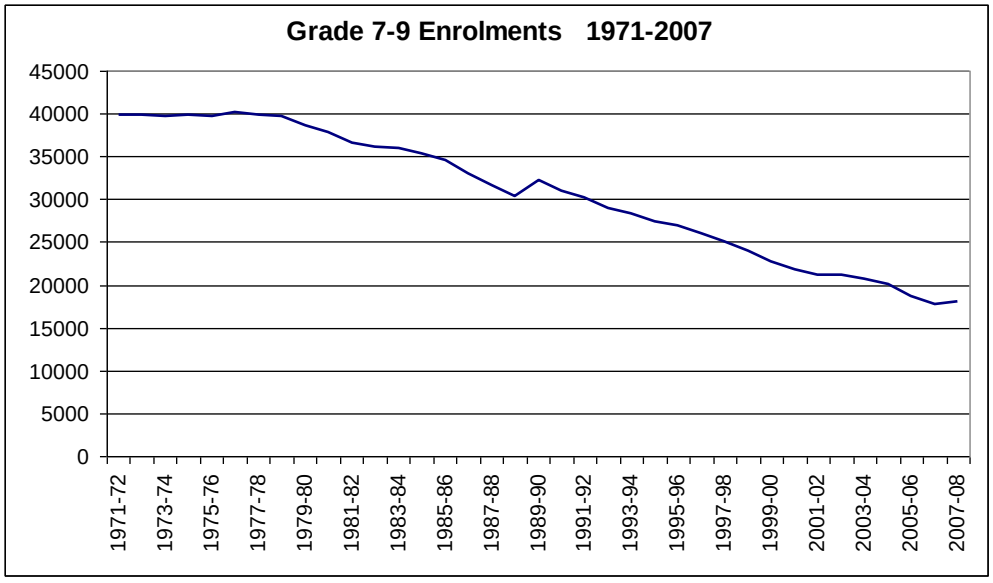
III SCHOOL AND GRADE CONFIGURATIONS

The Current Context

The school program in this province recognizes grades 7-9 as a distinct intermediate level. In particular, curriculum documents are organized with this structure in mind. However, before looking at possible directions for change in program structure it is important to examine the reality of the school system in which this program operates. This includes actual schools sizes and configurations, enrolment trends and the trend towards school consolidation.

Figure 3.1 gives the long term trend in Grade 7-9 enrolment. This shows relatively steady decline for close to thirty years, to the point where current enrolment is less than half that of the peak years in the 1970s. This mirrors a decline in enrolment at all grade levels. The levelling off for 2007-08 is not likely to be the start of a new trend because it is clear that enrolment in earlier grades is continuing to decline.

Figure 3.1



The long term enrolment trend is reflected in an equally long-term trend in the number of schools. The total number of schools has declined from more than 700 at the beginning of the enrolment period reported above to just 292 in 2007-08. The result is that average school size has actually increased slightly in recent years, from around 230 in the 1990s to closer to 260 in 2007-08.

Nevertheless, a large number of small schools remain in rural areas, many of which cannot easily be further consolidated. In reality total enrolment is not the best measure of school size from a program perspective because larger enrolment can be achieved by bringing more grades into a school. Indeed, total school enrolments have been maintained in many instances by creating more K-12 schools. While this may be efficient from the point of view of space utilization, it creates significant difficulties from a program perspective because of the existence of small numbers of students in a grade or, at the high school level, in a course.

This pattern, as it applies to Grades 7-9, is shown in Figure 3.2. It is clear from this that more than half the schools with these grades have fewer than 60 students in these three grades, or fewer than 20 students per grade. Numbers as small as this reduce the possibilities for grouping students and, at the lowest levels, requires the existence of multi-grade classes.

Figure 3.2

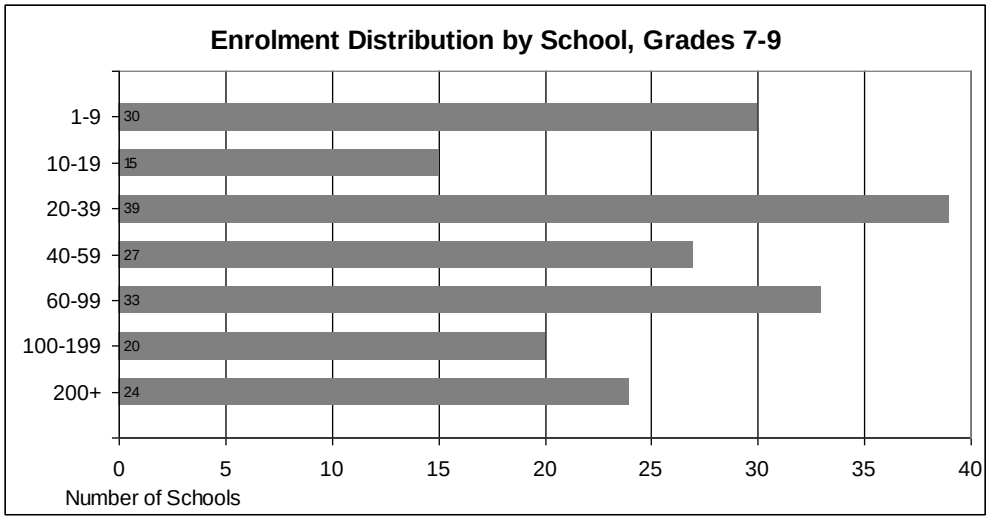
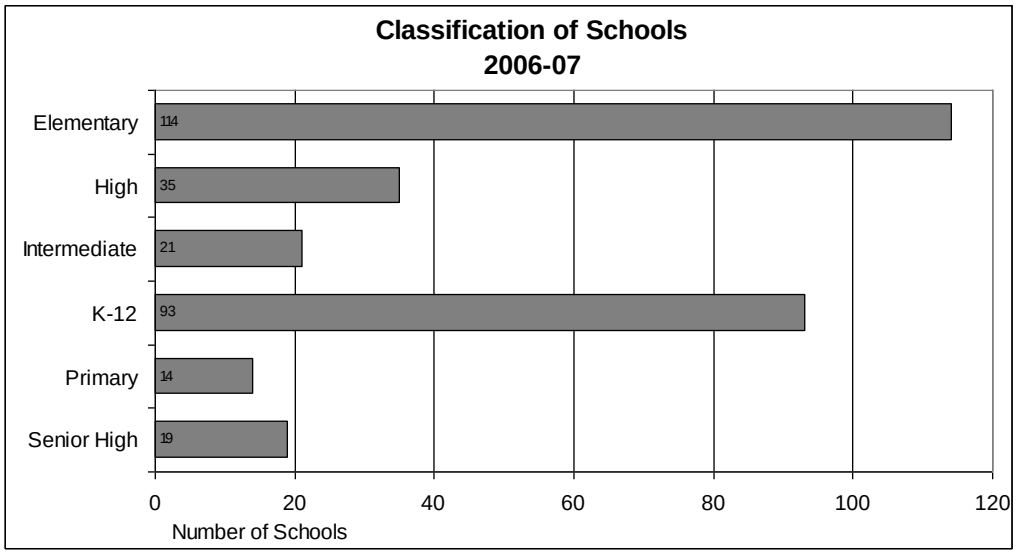


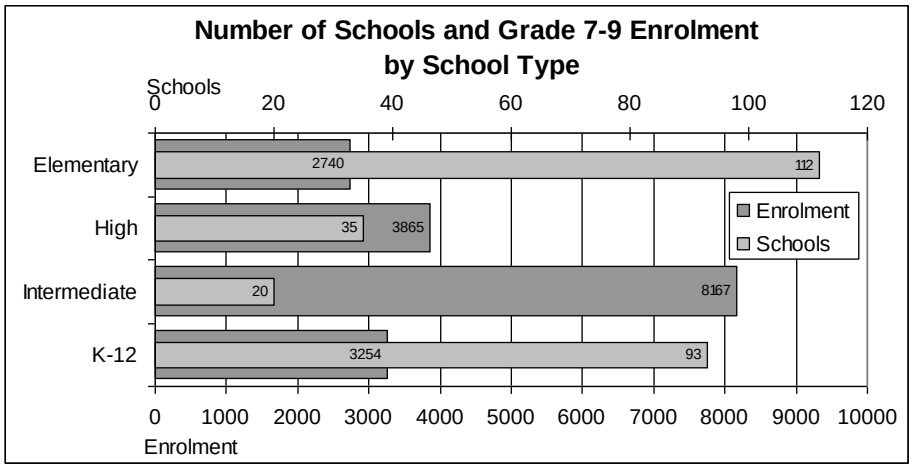
Figure 3.3



Another way of looking at schools with grades 7-9 is to examine the overall grade configurations found in schools. Almost any grade configuration that can be imagined can be found in at least one school in the province. However, it is possible to classify schools by type, based on the predominant grade levels found. This classification for 2006-07 is shown in Figure 3.3. In this case, an elementary school, for example is defined formally as having Grades K-6. However, schools of this type which include Grade 7 or 8 would also be called elementary. Similarly, an intermediate school is one for which 7-9 are the dominant grades. This could include schools that, in other jurisdictions, might be called middle schools (e.g. grades 5-8). It is immediately obvious that stand-alone intermediate schools are, in reality, the exception in this province. Indeed, of the 21 schools classified as intermediate, only 14 have grades 7-9 exclusively.

Finally, the picture can be made a bit clearer by examining the types of schools in which grade 7-9 students are found. This breakdown is given in Figure 3.4. This shows that by far most schools that have grade 7-9 students are either elementary or K-12 schools. On the other hand, the largest number of grade 7-9 students are found in the 20 schools classified as intermediate. A significant number of grade 7-9 students are also found in high schools, defined in this case as those with grades 7-12. Since the latter types account for close to two-thirds of all grade 7-9 students, it is reasonable to argue that these grades are more closely linked to a high school than to an elementary school structure.

Figure 3.4



The Middle School Concept

One might expect there to be a substantial difference in how programs for grades 7-9 are likely to function in an elementary as opposed to a high school, because of the ways in which teachers are hired and assigned in the different kinds of schools. Indeed, one of the arguments made for middle schools is that they represent a break from the tendency to organize students in grades 7-9 along the same lines as those in high schools. It is therefore useful to examine the idea of middle schools in more detail.

Typically identified as grades 6-8, rather than the grade 7-9 configuration more commonly known as intermediate or junior high schools, middle schools represent an effort to "fine tune" the grade structure of schools to more appropriately reflect the age levels during which most of the changes of early adolescence occur. According to this line of thinking, by age 14, which is typical of students entering grade 9, most individuals have progressed beyond the changes described earlier as characteristic of early adolescence.

As far as we can determine from the literature, the middle school grew out of the work of Eichhorn and others, and was built on the educational concept that the adolescent learner needs a special learning environment that is developmentally responsive to the unique needs of ten to fourteen year olds as they develop into adolescence at different cognitive, emotional, social and physical growth rates (Weller, 2004, p. 1). The underlying concept derives from the constructivist view which holds that education should focus on the connectedness of knowledge and should thus build on student interests and prior experience. Curriculum integration

is thus a major underlying theme. This is often operationalized through reduced emphasis on subject teaching, which, in turn, is thought to be accommodated by extending the generalist or homeroom teaching structure of elementary schools into the middle grades. Curriculum integration is also linked to the formation of teaching teams, with a small number of teachers assuming responsibility for a particular group of students within the school.

A significant middle school movement, as represented by the National Middle Schools Association (NMSA) has emerged in the United States. This organization engages in both research and advocacy around middle schools. The following are some key characteristics of successful middle schools, as identified by NMSA. (We have abbreviated these to highlight what appear to be defining characteristics of middle schools, rather than generic characteristics of any successful school.):

- Curriculum integration and opportunities for students to pose and answer questions that are important to them.
- A school staff which values working with this age group
- Multiple learning and teaching approaches responding to the diversity of early adolescents.
- Continuous, authentic assessment that goes beyond grades in assessing the goals of middle level education.
- Interdisciplinary teams of two to four teachers working with a common group of students, incorporating the idea of having an adult advocate for every student.
- School-wide efforts and policies that foster health, wellness and safety.
- Multi-faceted guidance and support services, involving both teachers and specialized professionals.
  (http://www.nmsa.org)

The Consultations

Grade configurations. Views on school and grade level configuration were mixed, with many respondents making the point that configuration is often determined by existing school facilities and student demographics. This places significant constraints on the ability to reconfigure schools into potentially more desirable grade setups.

Many focus group participants expressed a belief that the grade configuration affects student behaviour, noting specifically that intermediate students exhibit differing behaviours depending on whether they are housed with students younger or older than them. It appears that when they are in a school environment with

more mature students they appear to exhibit more mature behaviour. Contrary to that view, a principal of a rural 7-12 school expressed the concern that junior high school students can be negatively influenced by the negative attitudes and habits (e.g. smoking, drugs, skipping school) of the senior high school students. One teacher opined that 7-12 schools are focused on senior high issues such as high school sports competitions and graduation, and intermediate students get lost in the mix.

For areas with larger populations, the issue of what is the best school configuration for the intermediate grades has been around for quite some time. It was noted that in St. John's, prior to the board consolidation of the mid-1990s, one board was generally organized around K-8 and 9-12 schools and the second as K-6, 7-9, and 10-12 schools. The consolidated board (since further restructured as the Eastern School Board) struck a committee to look at grade structure. That committee reported that there were as many positives as negatives with either configuration model. The board decided to create more discrete7-9 schools, apparently more for financial than for program reasons. Our sense from the interviews is that the board would have preferred a middle school model but that establishing that model would have required even more disruption of schools than was already occurring because of board consolidation.

Among those consulted, there was widespread support for K-12 schools, K-8 schools, and 4-8 schools, even among participants who had not worked in these configurations. Principals of several large intermediate schools felt that they served the needs of their students very well. This view was supported by their district office personnel. One principal of a similar size grade 7-9 school disagreed. Support for grades 7-9 schools was less evident among those who were not presently teaching in one. Some suggested avoiding this configuration at all costs, with one educator describing the configuration as an abomination.

Several principals and senior district administrators who supported intermediate schools noted the importance of lengthening the time a student spends in a particular school to reduce the number of transitions for students. This was seen as important for developing a school culture of ownership and belonging among students and parents. While the majority of the principals of 7-9 schools were positively disposed to their school configuration, several drew attention to the limitations of having students for only three years. The short time frame does not provide time for school culture building that includes students, parents, the community, and teachers. On the other hand, most principals of K-12 or 7-12 schools emphasized that having students for six or more years allowed for the building of a positive school culture of ownership and belonging.

Intermediate students were perceived as being a challenge to teach, irrespective of school configuration. One school district has adopted as a principle for school reorganization that intermediate schools should not be over 400 students. A director in another district noted that there appeared to be little empirical literature related to the optimal grade configuration for intermediate schooling and that attention would be better spent on developing a student-focused culture in the school regardless of the school size or configuration.

Placement of Grade 9. Much discussion in the focus groups centered around whether grade 9 should be considered as part of the senior high division, and, if so, should the credit system be extended to include grade 9. Opinions were mixed on both issues. The same was true for extending the credit system into grade 9. Some suggested that grade 9 be included as part of the senior high division but not necessarily the credit system.

A number of teachers and principals who supported a grade 9-12 division and the extension of the credit system into grade 9 cited the following reasons to support their position:

- grade 9 as an endpoint results in more school leavers, as those who have repeated a grade are now 16 and have access to social services, the job market, and driver's licenses.
- those who fail a subject (e.g. math) at the 9th grade will not have to repeat the whole grade … they can go on into the credit system and only repeat the mathematics course. The result is fewer dropouts.
- there is much literature on the middle school concept that supports grade 8 as an end point.
- there are many good role models and mentors at the senior high level
- Grade 9's are no longer at the top of the pecking order and will therefore be on their best behaviour.
- negative behaviours of the grade 9s will not rub off on the grade 7s and 8s.
- the needs of gifted students will be better addressed.

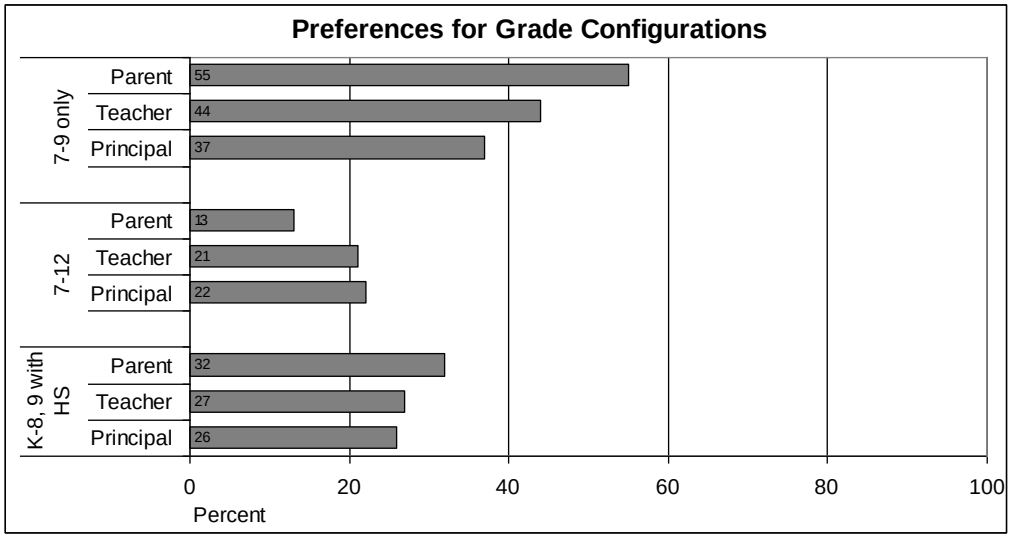
Those opposed including grade 9 as part of the senior high program spoke of lack of maturity among grade 9 students. One teacher cautioned that we should not be fooled by their physical appearance; they are still children. Others were concerned about male predators and bullies among the older school population. A number of principals with one or more intermediate grades in their schools, along with senior high, indicated that they separated the younger group from the seniors in a wing or section of the school for those reasons.

Survey Results

Although the interviews and focus groups provide some interesting detail about views on the school structures, the mixture of opinion leaves considerable uncertainty about prevailing views. The surveys can give a much more representative, though less detailed, picture on these issues as survey results may be generalized to the relevant populations.

Parents, teachers and principals were asked about their preferences for grade configurations. The results are shown in Figure 3.5. It is clears from this that, while the level of support for the grade 7-9 configuration varies across groups, this is the most widely supported grade configuration overall. The lowest level, especially for parents, is for the grade 7-12 grade structure. This is reinforced by another parent question which indicated that parents whose children were in grade 7-12 schools were less pleased with this configuration than parents with children in any other type of school. On a more specific question about placement of grade 9 with the high school program, about 60% of parents opposed this idea.

Figure 3.5



Comparison with other Jurisdictions

At least one Canadian province (New Brunswick), and some school districts in other provinces, have moved from an intermediate (7-9) to a middle school (6-8) format. Ontario has placed grade 9 within its high schools and retained grades 6-8 as part of the elementary school structure. Quebec has no middle or intermediate schools, with the system being divided into primary (K-6) and secondary (7-11) divisions. Most other provinces have defined their middle school division as grades 7-9.

As part of the consultations for this project, we visited several middle schools in British Columbia and New Brunswick and interviewed principals as well as provincial and school district officials responsible for these schools. It is evident that the middle schools visited are organized along the lines of the above features. In particular, curriculum integration, interdisciplinary teaching teams and school-wide support services are strongly characteristic of these schools. New Brunswick, in particular, adopted the middle school philosophy as the basis for school organization in the mid-1990s and has now established grade 6-8 schools in most localities.

It is interesting to note that, although grade 9 students have been placed in high schools in some provinces, the grade 9 program has not generally been integrated into the senior high school credit system. Wide course choice, differentiation of courses by levels and other features of the typical high school credit system are generally not found in grade 9 programs. As will be discussed in more detail in the next chapter, programs for grades 7-9 in other jurisdictions look similar to intermediate program in this province. New Brunswick does separate grade 9 from the grade 7-8 program but, as far as we can tell, the differences are small and are certainly not in the direction of integrating grade 9 with the rest of the high school program. The Western and Northern Canadian Protocol, which forms the basis for programs in all of the western provinces and the territories, outlines a K-9 program in some core areas and a K-12 program in others. Alberta adds to this to form a program that is similar to but narrower than that found in this province. Ontario does appear to have a somewhat broader program in grade 9 than in grades 7-8, reflecting mainly a greater focus on aboriginal and other second languages.

Overall, the pattern in Canada can be said to be more similar to than different from the grade 7-9 structure found in this province. For the most part, the same is true internationally. While middle schools have taken a prominent place in the United States, school structures are a local decision and both 6-8 and 7-9 formats remain common. In the United Kingdom, the program is formally divided into four key

stages corresponding to grades 1-2, 3-6, 7-9 and 10-11. However, as far as we can determine most schools are organized along primary (1-6) and secondary (7-11) lines. South Australia, the only Australian state we examined in detail identifies four "bands" similar to the U.K. key stages, with the middle band comprising grades 6-9. Although there appears to be a substantial middle school movement in Australia, similar to that in the United States, it is not known how far that has penetrated the school system. New Zealand defines intermediate schools as comprising grades 7 and 8. Finally, we examined Finland as an example of a high achieving country. However, because formal schooling in Finland, as in other Nordic countries, does not start until age 7, it is difficult to compare the Finnish structure to those in the other countries reviewed. In that system, years 7-9 are called "lower secondary" but students at this level are older than those in our grades 7-9.

Conclusions and Recommendations

All of the sources of evidence examined here lead us to the conclusion that the argument for a major shift in the definition or grade configuration for intermediate schools is not strong enough to warrant the significant disruption that would be required to implement such a shift. The size and distribution of schools in this province is so strongly driven by geographic and demographic forces that it would be almost impossible to impose any uniformity of grade structure. Furthermore, while some of the principles underlying the middle school movement seem appropriate in addressing the developmental characteristics of early adolescents, we are not convinced that a simple shift from a grade 7-9 to a grade 6-8 structure would accomplish this or even that the latter is the optimum grade range in which many of the changes of adolescence occur.

In our view, it is important to separate the grade configurations found in schools from those adopted for programming purposes. Programs designed for particular grade sequences may be implemented in schools with a wide variety of grade configurations, as the current situation in the province illustrates. We believe that programming for a particular grade sequence is more fundamental than the type of school in which programs have to be implemented. While implementation may be simpler in schools whose grade structure corresponds to the program structure, this is not an essential requirement. We see no argument to support forcing a grade 7-9 structure where this would lead, for example, to long distance bussing of students or to inefficient utilization of facilities.

Recommendation 1

That the current grade 7-9 configuration continue to be the basis for intermediate school programming in the province.

Recommendation 2

That grade configurations in schools continue to be based on geographic, demographic circumstances and space utilization requirements.

IV CURRICULUM

As the Williams Royal Commission (Government of Newfoundland and Labrador, 1992) pointed out, "of all the components of the education system, the curriculum affects students most directly." Several of the research questions posed for this study were related to the intermediate curriculum and curriculum delivery. Accordingly, a considerable amount of the work done in this study was directed towards determining the state of the curriculum in the province and how this compares to what is found in other jurisdictions. Many of the survey and consultation questions also focused on curriculum.

Early in the study, as well as in the context of other studies we have conducted, many complaints were heard to the effect that the curriculum is too crowded, with too many subjects and too many outcomes. Indeed, in the mathematics study which immediately preceded this one (Atlantic Evaluation and Research Consulants, 2007), this was by far the most common concern expressed. The research team thus judged it essential to determine if the intermediate curriculum should, or could, be streamlined. The ideas on curriculum integration expounded by advocates of the middle school model offered one possible way to address this. However, many other considerations also had to be examined, including the need to focus on core areas and the question of whether some choice of subject areas is appropriate at the intermediate school level.

The Existing Intermediate Program

In this province, the intermediate level is treated as a distinct division for curriculum purposes. The intermediate section of the 2007-08 Program of Studies has this to say about the intermediate curriculum:

> *The concepts, values, and skills of the curricula in English language arts, mathematics, science, social studies, music, industrial arts, technology education, art, physical education, French, health, home economics, and religious education are relevant to the interests and needs of twelve- to fifteen-year-olds. The program achieves balance by placing equal emphasis on the cognitive, affective, and psychomotor domains and by taking into consideration the wide range of individual differences in the intermediate school.*

As far as we can tell, there is no attempt to promote curriculum integration in this program. The subjects are outlined as discrete areas and the content and outcome statements are all subject-specific.

The thirteen subject areas given above, plus a course called "career exploration" in Grade 9 comprise the program. These have been given time allocations as follows:

English Language Arts	20%
Mathematics	18%
Social Studies	10%
Science	10%
French	10%
Religious Education	8%
Technology Education/Industrial Arts, Home Economics	8%
Physical Education	6%
Music and Art	5%
Health	5%

It is not clear from the program if the 8% allocation for Technology Education/ Industrial Arts/Home Economics is intended to be divided among these areas or if it is intended that a choice be offered among these. However, the Program of Studies does note that Industrial Arts may be offered in grade 9. It is also interesting that Career Exploration has not been given a specific time allocation. Since the above allocations total 98%, 2% is presumably available for other activities.

Industrial arts is being phased out in favour of technology education. The Program of Studies also states that career exploration and enterprise/economic education are to be integrated into one or more of the other listed subjects. Although not immediately evident from the Program of Studies, it seems likely that students have the option of doing one of Industrial Arts/Technology Education or Home Economics. This point is supported by the survey results, which actually indicate that few students are taking home economics

Translating these times into a 25 hour weekly schedule[1] we can see that English Language Arts would get five hours and Mathematics about 4.5 hours per week. The 10% subjects would receive 2.5 hours, the 8% subjects two hours and the 5%

[1] Although most schools operate on cycles that are typically longer than a week, a weekly schedule is perhaps more easily understood as a way of comparing times.

subjects 1 ¼ hours. Physical Education, at 6% would receive 1.5 hours or three thirty-minute sessions per week. The latter is interesting because this seems to correspond to the minimum suggested for fitness-oriented exercise. However, it is not clear if the program as outlined, though focused on movement, is effectively an exercise program.

None of this time allows for class changes or other interruptions. However, some of this can perhaps be accounted for by the missing 2%.

Curriculum Comparisons

Table 4.1 gives a brief summary of intermediate or equivalent programs in other provinces, compared to that in Newfoundland and Labrador. While there is some variation in programs across provinces, the general pattern, and certainly the core subjects, are common across all jurisdictions. In general, most jurisdictions have a slightly narrower program than found in this province and some of the subjects required in this province are treated as electives in other provinces. Home economics is found only in Prince Edward Island, though this may be embedded in courses such as family studies in other jurisdictions. As far as we can tell, Alberta is the only other province which mentions religious education, which is offered at the discretion of school boards. Health and physical education are combined in several jurisdictions.

Among the areas generally regarded as core, social studies exhibits the most variation across jurisdictions. For example, Ontario has separate history and geography courses in grades 7-8 and two streams in Canadian and world studies in Grade 9. Newfoundland and Labrador has a course dedicated to the history of this province in grade 8. As far as we can determine, this is the only province with such a course.

Mathematics courses have been studied in some detail in the Mathematics Curriculum Review (AERC, 2007). This detail will not be repeated here. Suffice it to say that the jurisdictions operating under the Western and Northern Canadian Protocol have developed new K-9 and 10-12 mathematics sequences, which represent a significant streamlining of mathematics programs and a decision has recently been made by this province to adopt that program.

The curriculum comparisons revealed frequent suggestions for cross-curricular learning. This especially applies to information technologies which may be used in most subjects either as a tool for learning or as a skill to be learned. There were also references to the integration of mathematics and language arts skills into other subjects. The Nova Scotia documentation specifically refers to exploratory

courses (or mini-courses) that may be incorporated into existing courses to enrich the curriculum in Grades 8 and 9. We also saw a form of this in visiting middle schools in New Brunswick, where "exploratories" is essentially treated as a subject, with various modules catering to a variety of student interests.

The international comparisons reveal several patterns of interest. In the United Kingdom, the list of subjects is longer than in most Canadian jurisdictions, and includes separate history, geography and citizenship courses which, in Canada, are typically integrated as social studies. Sex education and religious education are also required, though students may be exempted from the latter on parent request.

The program in South Australia covers much the same subjects as the local program, including religious education and subjects called "society and environment" and "equity cross curriculum perspectives." Health and physical education are combined.

New Zealand has one of the narrowest lists of subjects; English, mathematics & statistics, social sciences, science, languages, the arts (music, dance, drama, visual arts), health & physical education (combined) and technology. The inclusion of statistics in the subject title for mathematics is unique. However, most mathematics programs include statistics as a topic, so the title does not necessarily imply that the program is very different from other mathematics programs.

Finally, the program in Finland is a bit broader and more specialized. This is perhaps because the intermediate level encompasses students who are one year older than those in Canada. There is stronger emphasis on languages, with all students taking both their mother tongue and the second national language of the country (Finnish or Swedish) as well as a foreign language. The sciences are also more specialized with physics/chemistry and biology/geography combinations as well as environmental studies. Religious education is also part of the program.

Comments on Selected Core Subjects

As part of the curriculum analysis, we compared curriculum documents in specific subject areas in the Atlantic Provinces, Ontario and the four western provinces and three territories operating under the Western and Northern Canadian Protocol

(WNCP). Details of these comparisons are given in the Background Report on Curriculum. These comparisons are complex and difficult to summarize concisely. However, the summary in Table 4.2 is intended to convey some sense of similarities and differences in core subjects.

Table 4.1
Grade 7-9 Curriculum Comparisons for Canadian Jurisdictions

Province	Core	Electives (courses/time)
Nova Scotia	**7 compulsory subject areas**: French (or Mi'kmaw or Gaelic), Language Arts, Mathematics, Science, Social Studies, Health/Personal development and Relationships*, Physical Education. IT is integrated. No religious education, no home economics. *The term "Health" is not mentioned in Grades 8 & 9.	One elective from Art, Family Studies, Technical Education, Music. The documentation also mentions advanced courses, local courses and exploratory courses (mini-courses), the latter to be integrated into existing courses. Suggested instructional time not available.
New Brunswick	**11 discrete subject areas in Grades 7 & 8 (middle school)**: Art, Health, English Language Arts, French, Guidance (Personal Development & Career Planning), Mathematics, Music, Physical Education, Science, Social Studies, Technology Education. No religious education, no home economics. Core French is not mentioned in provincial documents, however, "there is some core French in Elem and High school but every school district is different". (Jan 8, 2008 email from NB, see Appendix 4) Guidance has some scheduled blocks (20 hours in Grade 9) and some integrated delivery. **Additional information for Grade 9 (high school)**: coop education, health & physical education combined, technology/ vocational education combined, art is expanded to "the arts" (i.e., visual, dance, drama, music) (**for a total of 10 discrete subject area**s **in Grade 9**)	On-line information re subject choice (e.g. in the arts) was not available.
Prince Edward Island	**11 discrete subject areas**: Language Arts, Mathematics, Social Studies, Science, Second official language, Art, Music, Industrial Technology (with optional Manufacturing Technology module for Grade 9), Home Economics, etc., Physical Education, Health Education. CIT (Communications & Information Technologies) is integrated across the curriculum. Religious education not listed. Career education not overtly listed.	While Art, Music, Industrial Technology, and Home Economics, etc.*, are grouped for 7 - 13% of instructional time, it is not clear if there is choice among these subjects. *There is no clear meaning for "etc" being attached to Art, Music, Industrial Technology, and Home Economics. That is, there is no evidence of other subjects in the documentation.
Ontario	**8 discrete subject areas in Grades 7 & 8 (elementary school)**: The Arts (music, visual arts, drama, dance), French & Native languages, Health and Physical Education Language, Mathematics, Science and Technology, History, Geography. Note: arts combined; history and geography separated; health and physical education combined; no industrial	No clear on-line information on the availability of course choice (except in the language category, and the choice of the Grade 9 "academic" or "applied" program according to ability. There are also "transfer" courses to facilitate transition from applied to academic programs). Also, in Grade 9, the choice associated with the credit system is available to the

	arts, home economics, enterprise/economic education, or technology education. **Additional information for Grade 9 (secondary school)**: Business Studies, Languages (French / Classical / International / Native) Guidance & Career Education, Native Studies, Social Sciences, Technological Education (**for a total of 14 discrete subject areas in Grade 9**). Geography is done in Grade 9 (History in Grade 10). 2 streams in core areas; emphasis on native and international languages; ESL is a separate subject.	students.
WNCP	**4 discrete subject areas in the K-9 core program**: English language arts, mathematics, social studies and international languages.	Students have a choice among the proliferation of international languages, and, in other subjects according to the extent indicated in the western provinces below.
Alberta	**8 discrete subject areas**: English Language Arts, Fine Arts (visual art, drama, music), French Language Arts, Health & Life Skills, Mathematics, Physical Education, Science, Social Studies, (overwhelmingly history). ICT is integrated. Career & life management begins in Grade 10.	Schools must offer two provincially authorized optional courses except where instruction in a language other than English is offered, then only one other provincially authorized optional course is required. The optional subjects are career & technology studies, ESL, fine & performing arts (art, drama, music, choral, general, instrumental), FSL, green certificate programme, integrated occupational programme, international and native languages, social sciences, locally developed courses, and other subjects, such as career internship, environmental and outdoor education, ethics, and religious education (the latter at the discretion of school board). Recommended time for optional courses: 150 hours. Knowledge & Employability courses are available for students who intend going directly into the work force from school.
British Columbia	**9 discrete subject areas**: English Language Arts, Social Studies, a second language, Mathematics, Science, Physical Education, Fine Arts, Applied Arts (not in grade 7, see detail in cell to the right) and Health & Career Education (combined) . IT is integrated.	**Beginning in Grade 8**: (i) one or more of the four Fine Arts subjects each year (dance, drama/theatre, music and visual arts). Recommended time: 5%. (ii) one or more of the four subject options of Applied Skills (technology education, information technology, home economics, business education). Rec. time: 5%.
Saskatchewan	**7 *required* areas of study**: Language Arts, Mathematics, Arts Education, Health, Physical Education, Science, Social Studies. Career Guidance is to be scheduled at 50 min/week with some integration; 50 hours of Computer Literacy over 3-year period (integration allowed); **PLUS** elective courses as indicated in the cell to the right.	Over 3-year period do at least 3 of Practical and Applied Arts courses: Agriculture, Care and Hospitality, Communication, Design, Resources, Transportation, Other (Career and Work Exploration, Entrepreneurship). Recommended time: 75 min. per week. Local Courses—may be delivered by reducing the time to be spent in one or more of the required areas up to a maximum of 20%. The status of core French is unclear from the on-line documentation.
Manitoba	**7 compulsory subject areas in the Middle Years (Grades 5—8)**: Lang. Arts, Math, Science, Social Studies, Phys Educ/Health Ed (comb.), Arts Education, Music. **5 compulsory subject areas in Senior Years (Grades 9—12)**: Language arts, Mathematics, Science, Social Studies, Physical Education/Health Education.	Grade 7—8 Optional subjects are basic French, other Languages, Aboriginal Studies, and Technology Education (the latter being Home Economics and Industrial Arts in the Middle Years). Recommended time 13%. Career Development not offered until Grade 9 (Senior Years Group). In Grade 9, the choice associated with the credit system is available to the students.

Table 4.2
Curriculum Comparisons in Selected Subjects

Subject	Newfoundland and Labrador	Other Atlantic	Ontario	West
English Language Arts	Three strands: 1. Speaking and Listening, 2. Reading & Viewing, 3. Writing & Other Ways of Representing	Identical to Newfoundland & Labrador	Four strands: 1. Oral Communication, 2. Reading, 3. writing, 4. Media Literacy. In Ontario more attention paid to media literacy. In Newfoundland & Labrador "media texts" are covered in just one outcome statement.	WNCP LA has 5 general goals: students will listen, speak, read, write, view, and represent to: 1. explore thoughts, ideas, feelings, and experiences; 2. comprehend and respond personally and critically to oral, print, and other media texts; 3. manage ideas and information; 4. enhance the clarity and artistry of communication; 5. celebrate and build community.
Mathematics	Six strands: 1. Number Concepts/Number & Relationship Operations, 2. Patterns and Relations, 3. Measurement, 4. Shape & Space/Geometry, 5. Data Management, 6. Probability	Prince Edward Island, and New Brunswick documents are identical to those of Newfoundland & Labrador. Nova Scotia documents not available for download, but suspected to be identical.	The 5 math strands in Ontario: 1. Number Sense and Numeration, 2. Measurement, 3. Geometry and Spatial Sense, 4. Patterning and Algebra, 5. Data Management and Probability. In Grade 9 (which is HS) in ON, there is no "data management & probability" strand.	While there is some slight variation in the wording, the number and nature of the WNCP math strands closely match those of Newfoundland & Labrador.
Science	Grade 7, 8 and 9 Science follow the same pattern in that there are four units: one on Life science, two on Physical Science (physics & chemistry) and one on Earth & Space Science (with earth science treated in Grades 7 & 8, and space science in Grade 9).	While not always presented in the same order, all other Atlantic Provinces Grade 7, 8, and 9 science topics are identical to those of NL.	Ontario topics are identical to those of the Atlantic provinces with the addition of a fifth strand related to "structural strength & mechanisms" in Grades 7 and 8 only. Also the Ontario subject is called "Science & Technology" and develops the relationship between the two.	To date there are no WNCP Science documents on line. Alberta 7 Science is quite similar to NL in that four major science fields (Biology, Physics, Chemistry, & Earth/Space Science) are represented. In British Columbia there is no Physics topic. BC Grade 8 & 9 science appears to be identical to NL courses. In AB, like ON, Grade 8 has a unit on "mechanical systems". AB Grade 9 science has no "physics" unit. *However, the similarities far outweigh the differences (right down to all reported jurisdictions doing space science in Grade 9).*

Social Studies	Grade 7 develops the theme of "empowerment". Grade 8 SS is a unique course "The History of Newfoundland and Labrador". Grade 9 SS focuses on Atlantic Canada in the Global Community.	Except for the special Grade 8 course in NL, and the fact that NB has reversed the Grade 8 and 9 "Atlantic Canada Social Studies Curriculum", there is an over-all common treatment of Social Studies in the Atlantic Provinces.	Ontario Grade 7 Social Studies is presented as two separate subjects—History (of early Canada) and Geography (themes of geographic enquiry, patterns of physical geography and natural resources). The Grade 8 program also has two courses—History (confederation, the development of Western Canada, and a changing Canadian society), and Geography (patterns in human geography, economic systems, and migration). In Grade 9 there is a Geography course only (a general course that develops broad geographic themes while focusing on Canada and global connections).	The WNCP Grade 7 Social Studies course deals with Northern Canada and its connections with other countries of the North. The Grade 8 SS explores world views and civilizations of the past. The title of Grade 9 SS is "Canada: Opportunities and Challenges".
Second language	The on-line documentation suggests that the Atlantic Provinces are following the framework as proposed by the APEF document "The Orientation Document for Atlantic Canada Core French program". The three strands are 1. communi-cation, 2. culture, and 3. general language education.	See comment in cell to the left. In addition to French, Nova Scotia delivers courses in Mi'kmaw and Gaelic.	Ontario Grades 7, 8, and 9 French has 3 strands: 1. oral communications, 2. reading, 3. writing. As in Nova Scotia, Native Languages are also taught.	There are no WNCP core French documents. There is however much information on a great proliferation of International Languages. British Columbia Grade 7, 8 and 9 core French has four strands: 1. Communicating, 2. Acquiring information, 3. Experiencing Creative Works, 4. Understanding Cultural Influences.

Views from the Literature

There has been sustained debate in the literature over whether student-centered or subject-based curriculum should prevail in schools (Beane, cited in Stevenson & Carr, 1993). Dewey and others who take a constructivist approach to learning have argued that the two are not mutually exclusive and that it is possible to design a curriculum that appeals to the interests of students and also helps them to become knowledgeable and skilled (Beane, cited in Stevenson & Carr, 1993; Henson, 2004). In fact, young adolescents' questions and concerns about their world offer a broad-based context for the acquisition of this knowledge.

Taking this debate to the middle school level, a key element of the middle school philosophy is that the nature and needs of the learner should be the primary concern of the middle school curriculum (Caskey, 2006; Weller, 2004). Beane, cited in Knowles and Brown (2000), advocates "developing a curriculum that has meaning to adolescents by focusing on their lives to design themes for study" (p. 85). Various terms have been used in the literature to refer to such a student-centred, problem-based curriculum including: core curriculum, common learnings, general education. Most recently curriculum integration has become the preferred theme (Caskey, 2006).

Curriculum integration is one of the seven design elements of middle schools found in *Turning Points 2000* (Jackson & Davis, 2000), and is a critical program characteristic of successful middle level schools in *This We Believe: Successful Schools for Young Adolescents* (National Middle School Association, 2003) and *This We Believe in Action* (Erb, 2005). By blending the core courses of English, mathematics, science, social sciences, fine arts and foreign languages, boundaries between subjects begin to blur as subject areas are combined to explore themes (Knowles & Brown, 2000).

Some authors consider Interdisciplinary teaming to be essential to the development of an integrative curriculum (Ames & Miller, 1994; Arhar, 1997; Vars, 1997; Wiles & Bondi, 1993). George and Alexander, cited in Arhar (1997), explain that interdisciplinary team organization is "a way of organizing the faculty so that a group of teachers share the same group of students, the responsibility for planning, teaching and evaluating curriculum and instruction in more than one academic area, the same schedule and the same area of the building" (p. 50). Such an approach affords teacher teams the ability to "weave together a variety of subjects into creative patterns of instruction" (Weller, 2004, p. 174).

There is some research evidence to support the use of integrated curriculum designs for the middle grades (Beane, 1997; Caskey, 2006; Dowden, 2007;

Jackson & Davis, 2000; Weller, 2004; Witschonke, 2006; Wood, Soares & Watson, 2006). Vars, cited in Dowden (2007), in a review of more than 100 studies of curriculum integration, concludes that students in integrated programs "do as well as or often better than students in conventional single-subject programmes" (p. 54). Pate, Homestead and McGinnis among others cited in Dowden (2007) have shown that student-centred designs for curriculum integration respond well to the developmental needs of adolescent learners. Further research has shown that schools implementing the philosophy of the National Middle School Association, specifically the integrated curriculum, have achieved improved outcomes in the areas of language arts, mathematics, social studies and science; have out-performed students in traditional classes on national standardized tests; and shown statistically larger student growth (Anfara & Lipka, 2003; Mertens & Flowers, 2003). In New Zealand, Nolan and McKinnon, cited in Dowden (2007), report that a five year longitudinal study in that country "demonstrated that student-centered integrated programs generated achievement effects in the order of one standard deviation above the norm in National School Certificate results for English, Mathematics, and Science" (p. 54).

Despite these research findings, a number of difficulties with the middle school organization have become apparent. In analyzing middle school success, Lipsitz, Mizell, Jackson and Austin, cited in Mizell (2005), conclude that "we have not seen the widespread dramatic improvement in academic outcomes we had hoped for" (p. 15). With the pressures of accountability and raising academic standards, there has been a "cry for back to the basics" and therefore an increased emphasis in education on direct basic skills instruction to prepare students for standardized tests (Weller, 2004). Research suggests that as middle school learners make the transition to senior high school, many students experience a drop in grades as well as attendance (Barone et al., cited in Mizelle & Mullins, 1997; Reyes, Gillock & Kobus, cited in Mizelle & Mullins, 1997).

Furthermore, the integrated curriculum is viewed by some as breaking away from "the traditions so many adults have come to know, and which are far easier to keep than to change, no matter how undesirable they may be" (Beane, cited in Stevenson & Carr, 1993). As a result, conventional departmentalized approaches to curriculum have continued to dominate in many of the school systems in the United States (Caskey, 2006).

A further barrier to integration is the training of teachers who have largely been educated in a particular subject. Teachers may view curriculum integration "as a weakening or watering down of their subject fields" (Weller, 2004, p. 172). Coupled with these sentiments of subject matter being "watered down", teachers may feel they do not have sufficient time to plan for and implement the integrated

curriculum. Providing adequate planning time for teachers is an essential element of successful middle schools (Weller, 2004).

The research on curriculum integration in middle schools is not particularly conclusive and that there are many practical barriers to implementing an integrated approach. It is appropriate to think of possible areas of integration at the curriculum design stage in order to highlight connections between disciplinary areas and to avoid duplication of content across courses. It is also appropriate for teachers to use every opportunity to address, for example, language issues in mathematics courses or quantitative analysis in social studies. Having a team of teachers responsible for a group of students, as discussed previously, also affords an opportunity for teachers to share curriculum themes and perhaps collaborate in many areas. However we do not believe that a convincing enough case can be made from the literature for adoption of integration as the core approach to curriculum development or delivery. Furthermore, doing this would require that teachers take on a role which takes them outside their areas of specialization, something which our survey results indicate is not supported by either teachers or parents and which is not supported by research on teacher specialization (Crocker, 2007).

The Consultations

There was general support for the broad overarching design around which the intermediate curriculum is built. Few participants, if any, expressed disagreement with the essential graduation learning or with organizing the curriculum around the disciplines. In the meantime, it was unanimous that the intermediate curriculum is too broad, lacks depth, and that integration across the disciplines is necessary.

The interviewers heard repeatedly that the current intermediate curriculum is dull and un-engaging, much too crowded, and not flexible enough to meet the developmental needs of young adolescents. Almost all of the participants spoke about curriculum overload. There is too much jammed into the curriculum, too many priorities, not enough time in the instructional day to do what is mandated. There were also comments on loss of time, with much less than the mandated 187 days actually being available for instruction.

It was reported that many intermediate students find schoolwork to be irrelevant to their everyday lives and that this leads to loss of interest and behavioural problems. There was a near unanimous consensus that course choice and opportunities for remediation need to be built into the curriculum. It was also felt to

be essential that the curriculum and its delivery be based on the needs and nature of the adolescent learner.

A significant number of participants felt that the intermediate curriculum is heavily weighted in favor of academic programs. Courses such as music, art, health, music, religion, etc. regularly get short-changed to ensure that outcomes in the so-called core courses get completed by the end of the school year.

These points were emphasized by senior district administrators as well. They noted that there must be a balance of academic and personal development in the intermediate program and that can be best accomplished by reducing the curriculum foci while at the same time offering more student choice. There was widespread agreement that the curriculum should promote life skills, be experiential, and include courses such as industrial arts, home economics, and outdoor education. These are courses that help develop deep relationships between students and teachers. It was noted that it has become a challenge to offer experiential learning type courses as everything is now driven by data, especially CRTs.

Young adolescents were reported to operate in the here-and-now and therefore look to see the relevance of curriculum in their lives. If students do not see the immediate need for a particular course, they do not want to devote time to it. Participants also pointed out that programs must be relevant for both genders. Mention was made of Manitoba's efforts at the intermediate level to link what gets taught to the learners' direct experience.

Several suggested that to be relevant to adolescents of both genders the physical education program must be focused on healthy living rather than organized sports. A number of participants expressed the view that quality daily physical education should be built into the curriculum. The view was also expressed that the curriculum must be more focused on life skills such as citizenship, resolving disputes, and appropriate social behaviours.

Some respondents expressed the view that the courses from which intermediate students get most satisfaction are those in the arts (including industrial arts and home economics), physical education, and technology. This is understandable considering young adolescents need for socialization, contact, movement, and physical activity. Teachers pointed out that these subjects have less pressure to be successful and that, for struggling students, the normal frustrations that accompany more academic courses are non-existent.

On the question of curriculum design, participants asserted that having students complete thirteen disconnected courses at each of the intermediate grades is inappropriate and unmanageable for many students. Many individuals spoke about the overlap in skills in various programs and expressed a concern that that the intermediate curriculum is too subject oriented. They advocated for more integration across subject areas, and for a more integrated and seamless program across the three grade levels. Some suggested the elimination of grade levels altogether.

Nevertheless, some respondents took the position that we should not do away with subject-based courses, suggesting that an inter-disciplinary approach theoretically works, but only with a tremendous amount of planning. It was noted by a couple of participants that the practice of specialist teaching tends to inhibit integration across subject areas.

A significant number of participants commented that the intermediate curriculum has become more prescriptive and less flexible and many supported choice on a graduated scale from grades 7-9. The existing program requires students to do all courses outlined in the Program of Studies. A significant number of participants commented that, if given the choice, many students would drop religion, physical education, and French. Some suggested that choice should be provided within these and other personal development programs. Others suggested that choice should be extended to courses such as mathematics as well. Some commented that that grade 9 students in particular are ready for more choice. It was argued that French should be a choice in grade 9. One respondent commented that if skilled trades were part of the grade 9 program, half the behaviour problems would be eliminated.

To provide some variety in programming and better cater to student interests, many schools have implemented different forms of program modules. Through the district's 'exploratories' program, some Labrador schools offer intermediate students up to 30 mini-courses over six-week blocks. Many of the courses are non-academic in nature. One of the larger intermediate schools in Central Newfoundland has modularized technology, music, and industrial arts for grade 7-8 and technology, home economics, and art in grade 9. Students from two classrooms are combined into three groups and each group rotates through the modules over 3 terms in the school year. Western district's enrichment program, which offers 50-60 courses through grades 7-9, was reported to very successful and popular with students.

Various forms of student streaming were mentioned during the consultations. Some suggested extending the senior high credit system down into grade 9.

However, as many people opposed these ideas as supported them. A number of key informants and focus group participants were wary of advising students to take less rigorous academic courses at the intermediate level. A concern was also expressed that many parents permit their children to make decisions around course selection. We have to be careful that students choose wisely and make decisions for the right reasons. Otherwise, some capable students will choose the easy way out.

A number of principals, especially in larger schools, expressed concern about the amount of time consumed by in-school and out-of-school extra-curricular activities. A principal of a large intermediate school argued that these activities are disruptive and indicated that her school recently initiated a project to monitor student time-on-task. Despite their impact on classroom instructional time, most everyone agreed that co-curricular activities are essential to the intermediate schooling process.

Many respondents reported that there is little focus on career exploration at the intermediate level. Several principals took the position that there should not be a great deal of emphasis on career education at this level, other than as part of other course work. Principals confirmed that the current counseling service is taken up primarily with student assessments, special education, students' personal issues and bullying rather than with career advising.

A significant number of participants at all levels expressed concern that the current instructional model does not allow for remedial opportunities in the intermediate program. Several key informants and focus group participants made the point that the intermediate curriculum assumes students leaving elementary schools have sufficient mastery of reading, writing, and mathematics. According to them, this is a false assumption and the percentage of students arriving at the intermediate level "without the basics" was not insignificant.

It appears that whatever remediation is available takes place after school hours. Some respondents indicated that remediation is being addressed (presumably inadequately) by excessive homework and private tutoring. Participants also commented that even if the instructional schedule did permit time for remedial activities, many intermediate teachers are only minimally trained to provide such services, particularly as it pertains to reading.

The consultations, like the literature, give a mixed picture of issues such as curriculum design, integration and choice. Similarly, there is substantial disagreement on what subjects should be emphasized. At the same time, the almost unanimous view that the current curriculum is over-crowded amounts to a

call for action to streamline the program in some way. Also, it is clear from the consultations that there is a need to take account of the unique characteristics of early adolescents and to design curriculum that is more engaging and more in keeping with student interests.

Survey Results

Subject ratings. Survey respondents were asked a number of questions about curriculum, including the importance of subjects and the extent of choice that should be available. These questions took slightly different forms for different groups.

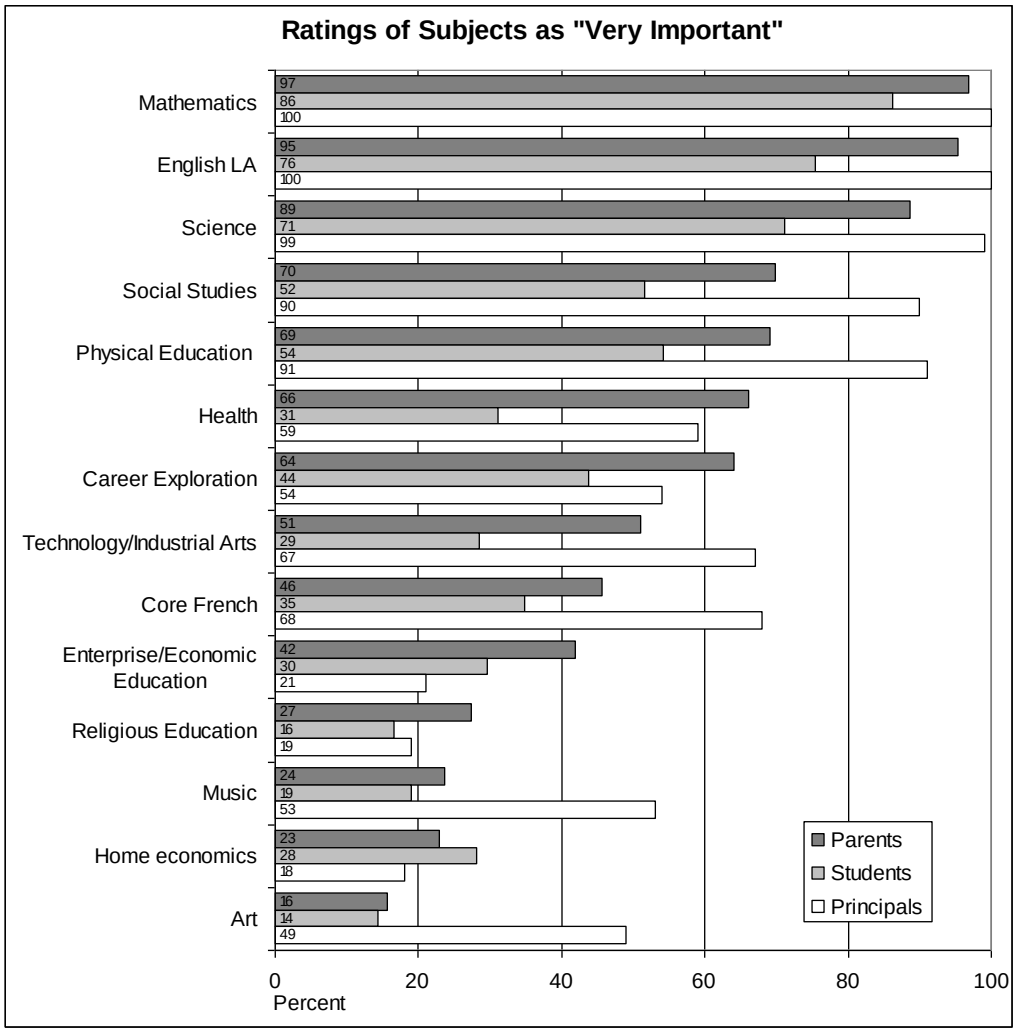
Parents, students and school principals were asked to rate the subjects in the intermediate school program on a three point scale from very important to not at all important.[2] This scale could be combined to yield a ranking of importance as seen by the three groups. Results from this question are given in Figure 4.1. It is clear from this graph that there is a substantial difference in ratings for different subjects. Subjects generally considered as core, specifically mathematics, English language arts and science are rated as very important by all respondents. Social studies and physical education also receive high ratings, with principals giving significantly higher ratings than other groups for these subjects. Indeed, with a few exceptions, principals tended to give higher ratings than either parents or students. Four subjects, religious education, music, home economics and art were given low ratings by all groups though, again, principals rated music and art higher than did parents and students.

It might be noted that the precise pattern given here relates to the decision to report only the "very important" category. Most respondents from all groups consider most subjects to be at least "somewhat important." However, since our concern here is to identify subjects which might be considered as optional rather than required, the very important ratings are judged to be the most useful. Also, a different form of ranking, based on mean scores for each subject, yields a similar pattern to that shown.

Although the program is built on the assumption that all subjects (with the exception of career exploration which is designated as a grade 9 subject) are to be offered in all years, many students reported that they are not taking some of the subjects. For example, only 16% of students reported that they are taking enterprise/economic education and 39% reported taking home economics. Only

2 Teachers were not asked this question because of the possibility that responses would be influenced by subject specialty.

Figure 4.1



14% reported taking career exploration, which is less than half of the grade 9 students in the sample. This suggests that schools are making some adjustments to the program. Indeed, responses to a principal question on whether their school is offering each course in each grade showed a similar or more extreme pattern. For example, only 16% of principals reported offering career exploration in grade 9, 3% to 6% (depending on the grade) enterprise/economic education and 15%-20% home economics. This is consistent with the intent that the first two of these areas be integrated into other subjects.

Differences in student and principal responses may be accounted for by the fact that larger schools are more likely to offer these courses, thus reaching more students than is indicated by school offerings. There was also a pattern in both

principal and student responses which indicates that fewer schools are offering, and fewer students taking, particular courses in grade 9 compared to the earlier grades. For example, while 78% of schools offer art in grade 7, only 61% offer that subject in grade 9.

In response to a further student question on the usefulness of their school subjects in later life, the ratings were generally much lower than those for importance. Only three subjects mathematics (85%). English language arts (66%) and science (60%) were considered by more than half the students as being very useful in later life. At the other extreme were music (12%), religious education (10%) and enterprise/economic education (4%). The position of mathematics is interesting because mathematics was also rated by both students and parents as the most difficult subject.

One way to interpret these ratings from the point of view of relieving curriculum overload is to argue that those subjects receiving the lowest ratings should be dropped or made optional. Another possibility is to adjust the time allocations to more closely reflect the ratings. Under an options model, consideration could be given to offering some of the lower ranked subjects in only one year rather than all three. Under a time model, science, social studies and physical education could be given greater time allocations at the expense of some of the lower ranked subjects which now have similar time allocations to these.

Course choice. A program of options obviously requires having a selection of courses from which students can choose. The extreme example of this is the high school credit system, with an extensive menu including options within subject areas and a wider variety of subjects. A more limited version would involve selection from the existing suite of courses, with a student taking fewer courses with more time on each course.

Respondents were asked for their views on the issue of course choice. In response to these questions, 79% of students indicated that they had no choice of courses this year. Almost all students wanted more choice, with 55% indicating they would like to see a lot more courses from which to choose. Nevertheless, when asked if they would take more or fewer courses if there were a choice, students were evenly divided on the two alternatives. As for principals, 55% supported the proposition that there should be choice among one or two optional courses, with the remainder about equally divided in preference for giving no chore or wider choice. Teachers were even more strongly supportive of limited choice, with 73% selecting that option and the remainder equally divided between no choice and wider choice.

The Crowded Curriculum

A clear view was expressed by interview and focus group respondents that the curriculum as it now exists is too crowded. This raises two sub-questions. Are there too many subjects in the curriculum and is there too much content or too many outcomes within the subjects. Much of what we heard seems to relate to the latter. Certainly this was the main point made in the mathematics review consultations. In that case, the views expressed in the field were strongly supported by a comparative review involving the of the full set of outcomes in mathematics, including the most detailed level, referred to as specific curriculum outcomes (SCOs). It was not possible in this study to review all of the subject areas at the level of specificity of the mathematics study However, the less detailed comparisons reported in the background report on curriculum suggest that the concern with too many outcomes has some validity in other areas.

In order to shed a bit more light on this, members of the research team examined two subject areas at the more detailed level of the SCOs. In social studies, the total number of outcomes was counted for grade 7 and 8 for four other provinces. This revealed a fairly close match in numbers (though not necessarily in specific content) for grade 7 but a large gap for grade 8 (Newfoundland and Labrador history). The latter course is conveyed in 167 outcome statements, compared to 89 in Saskatchewan, the next highest number and 22 in Alberta, the lowest number. This suggests that the local course might be seen as almost overwhelming in its expectations. Part of the reason for this is that the curriculum document also includes what are called “delineations” or sub-outcomes.

A second probe into curriculum detail involved grade 8 science. This showed 263 outcome statements in the local curriculum document compared to 108 in Prince Edward Island, where the program is supposedly identical. The Ontario curriculum document was found to have 93 outcome statements, Alberta 159 and British Columbia only 16. Looking more closely at a single unit, “optics” it was found that the program in this province contains 73 outcomes statements compared to 18 in Prince Edward Island for the same unit based on the same curriculum.

It is important to note that the number of outcome statements, in itself, does not convey the full picture. Content can be broken down into increasingly more specific statements, to the level of specific examples or even what might look like test items. To some extent, this is what is happening locally, and accounts for at least some of the differences in outcome counts. It is therefore not appropriate to try to solve the problem of crowedness by simply aggregating the outcomes to a higher level. This would merely create an illusion.

Nevertheless, having a large number of outcome statements does add to the appearance of complexity and likely contributes to the impression that there is no time for anything except to wade through the outcomes as quickly as possible. The result is less room for teacher discretion or adjustment for the characteristics of particular classes. The experience with the mathematics analysis also indicates that an excessively large number of outcomes results in both duplication and loss of a sense of priority.

The recent work of the consortium comprising the Western and Northern Canadian Protocol) has resulted in a significant streamlining of the mathematics curriculum, without any reduction in the basic structure or content. This was accomplished by having a clear set of priorities at the different grade levels and by moving away from the spiral approach which, interpreted in the extreme, leads to a notion that everything has to be done in every year. While we did not focus on this work in other subjects, the general thrust is in the direction of simplifying the curriculum. In our view all of the core subjects should now be subjected to a review with the goal of finding areas for streamlining. The model used in the mathematics curriculum review is likely applicable to this work and the level of effort required, with this model in place, should be considerably less than that taken for the mathematics review.

The second way of addressing curriculum crowdedness is by increasing flexibility in the program through defining a core program and electives. This approach is strongly supported by the subject ratings from our surveys and by the comparative analysis, which shows most jurisdictions having a narrower program than is found in this province. Redefining the program at the subject level is simpler than any attempt to streamline within subjects and is certainly much simpler than attempting to develop a more integrated curriculum. For all the support that seems to exist in the literature for the latter approach, we nave not seen a large scale attempt to develop and implement an integrated curriculum, though some jurisdictions refer to integration in their documents. Our view is that, if policy makers and curriculum developers believe that integration across subjects is desirable, they should be under some obligation to prepare programs with this in mind. It is not reasonable for curriculum documents to simply reference or promote the desirability of integration but leave it to teachers to actually try to accomplish this. We have not seen clear enough examples of integrated programs to determine what this would look like and how it might be implemented.

Curriculum Differentiation

The view expressed in the consultations that the existing intermediate program is dull, un-engaging and inflexible requires some attention. We believe that some progress in this direction can be made by making some subjects optional. However, given also that students at this level are at widely different levels of intellectual development, the question remains whether it is possible to offer a range of subjects or levels that would help span the range of abilities and prior achievement that is found.

Some school systems, including Ontario, attempt to address this problem by assignment of students to two different program levels. However, we are wary of even this mild form of streaming this early in a student's school career because there is little research support for streaming and because, in particular, early allocation to streams in almost all cases works to the disadvantage of lower performing students. Once placed in a "lower" stream, these students find it virtually possible to move upward. Such students tend to be taught in accordance with the low expectations created for them and hence are placed in a position never to advance to the higher streams.

As an alternative to streaming, it is possible to use the availability of course choice and the allocation of time for electives as a way of introducing flexibility into the curriculum that may be used for both remediation and enrichment purposes. Although we did not hear much about enrichment in the consultations, it is reasonable to argue that as many students could benefit from courses which challenge their academic capabilities than can benefit from remediation. Specifically, we would propose that the available elective time be used not only for the subjects already identified but also for a limited amount of both remedial and enrichment activity. On the remedial side, students entering grade 7 who are not performing at grade level in language and mathematics should have additional time allocated to these areas, in addition to the regular time.[3] This would require that specific courses or modules be developed for this purpose.

As for enrichment, the most obvious way to accommodate this would be to allow intermediate students access to a limited number of high school courses. Courses in English language arts, mathematics and science are obvious candidates. Since most schools with grade 7-9 students also have high school students, these courses are already available. In fact, having a larger pool of students as candidates for some high school courses would facilitate scheduling in some small schools. In larger exclusively intermediate schools, it would be possible to bring together sufficient students to have stand-alone classes in these areas. In fact,

[3] Instructional time is also discussed at greater length in the next chapter.

we understand that this was common practice some years ago before being discouraged in favour of the current program in which essentially all subjects are required.

While the evidence is not clear on the effectiveness of what is often called "exploratories" in the intermediate grades, we feel that this idea has merit and fits well with the idea of having some time for electives. Areas such as music, fine arts, introduction to skilled trades, media studies and others are examples of what is often found in exploratories. The proposed time allocations gives sufficient time for at least a couple of these areas to be taken as electives at each grade level. This could be accomplished, even in smaller schools, by offering these areas on an alternating basis each year, encompassing students at all grade levels. This would reduce the fragmentation of these areas and allow a substantial program to be developed in each area.

Conclusions and Recommendations

The intermediate program in this province is similar to, but somewhat broader than, programs found in most other jurisdictions. Many jurisdictions have narrowed the program by some subject combinations such as fine arts or health/physical education, while others have allowed electives. Others have streamlined within subjects, reducing the number of expected outcomes and the amount of repetition across grades.

While there is some support in the literature for an integrated approach to the intermediate curriculum, this research is by no means conclusive. There is also some support for this idea among interview and focus group respondents. Again, however, enough caveats were expressed to lead us to doubt if there would be sufficient support in the field to implement an integrated program. We did not ask directly about integration in the surveys. Nevertheless, it is clear from other questions that respondents see intermediate teachers as specialists and prefer this to be the case.[4]

The question the research team has had to grapple with is whether to accept the idea of integration as an organizing principle for curriculum. After reviewing the evidence, our answer to this is "no." However, that is not to say that nothing can be done. We can think of a number of areas in which this might be appropriate. These include commonalities in methods of inquiry across disciplines, the use of

[4] While the issue of curriculum integration is not exactly the same as that of whether teachers should be subject specialists, the two are closely linked. More detail on teacher specialization is presented in the next chapter.

quantitative concepts and processes in areas such as social studies, the development of study and research skills including the use and limitations of technology to gather information, ways of assessing the quality of information and, perhaps most obvious, the need to focus on developing language skills (reading, speaking and writing) in all areas of the curriculum. To the extent that these and other possible integrative themes are appropriate, then this should be reflected in a direct way in curriculum documents.

The view that the existing curriculum is rigid and inflexible raises the question of the need for some means of differentiation to accommodate the breadth of student interests, and to open up room in the program to address the needs of students who are entering the intermediate level without having mastered the core knowledge and skill that will allow them to succeed at this level. The means proposed for this was to make some of the courses judged by respondents to be of lower priority and value electives, to introduce a bridging program for students needing additional time to meet grade level expectations in language and mathematics and to allow intermediate students to take some courses from the senior high school program.

Recommendation 3

That the intermediate curriculum continue to be subject-based.

Recommendation 4

That the intermediate curriculum be restructured into core and elective courses.

Recommendation 5

That among the current subjects, art, music, home economics and religious education be considered electives.

Recommendation 6

That health and physical education be combined and that enterprise/ economic education be discontinued and its content integrated with social studies.

Recommendation 7

That the intermediate program be based on specific time allocations rather than on percentages of total time. As a tentative model, we offer the following schedule, based on a 1500 minute school week. This may be translated into school cycles at the discretion of the school.

Subject	Minutes per week
English language arts	300
Mathematics	300
Science	150
Social studies	150
French	150
Health/physical education	150
Technology	100
Electives	200

Recommendation 8

That the Department of Education conduct a more detailed comparative review of intermediate curriculum documents in the core areas to determine which areas are repetitive or suitable for streamlining.

Recommendation 9

That the Department of Education include within curriculum documents an indication of areas which may lend themselves to curriculum integration. The most obvious of these is the inclusion of outcomes which address the use of language skills across the curriculum.

Recommendation 10

That a bridging program be developed in each of English language arts and mathematics to be taken, in addition to the regular courses in these areas, by students entering the intermediate grades who are not performing at grade level expectations. These courses would be offered in the times allocated for electives for these students and be available to students in all three grades as needed.

Recommendation 11

That students in the bridging program be exempted from core French if required to find time to take part in the bridging program.

Recommendation 12

That intermediate students be allowed access to selected high school credit courses either as electives or through accelerated progress through appropriate subjects within the intermediate program but that students not be exempted from any non-elective subjects within the intermediate program in order to take high school courses.

It should be noted that this recommendation would appear to support a grade 7-12 grade configuration, even though this was the least favoured by our survey respondents, because this would facilitate fitting intermediate students into existing high school courses. This would be a particular advantage in small schools. In reality, most schools already have some combination of grades 7-9 and high school grades. Stand-alone grade 7-9 schools are generally large enough to allow the level of differentiation required by this recommendation. Given that, in practice, grade configurations will continue to be determined by enrollment and space utilization considerations, we see no reason to make a particular case for 7-12 schools. We also feel that implementation of a later recommendation on a system of teacher advisors for intermediate students will work in the direction of ensuring that intermediate students have a proper place and their own advocates in schools with more senior students.

Recommendation 13

That current courses in music, fine arts, industrial arts, career exploration and selected other areas be structured as modules to facilitate their offering on flexible schedules, combining students across grades where necessary.

We caution that these recommendations should not be interpreted as a mandate for streaming at the intermediate level. It is not intended that either the bridging or the enrichment courses replace any of the core subjects for intermediate students. Rather, they are intended to replace other lower-priority areas, for students who either need remediation or would be challenged by access to more advanced academic work.

V TEACHING AND TEACHERS

This chapter addresses a range of issues related to how the curriculum is delivered in the schools including teacher assignments, teaching practices, time allocation and use, class size and classroom practices

It is useful to look at the state of teaching at three levels of increasing specificity. At the macro level, teaching is driven by the way in which teachers are educated, allocated, and employed and by the resources available to support teaching and learning. At an intermediate level teaching is influenced by how teachers are assigned to and within schools, class sizes, subject specialization and a range of other teacher attributes and work assignment factors. At the most micro level, teaching is a process of interaction between teachers and students. The moment-to-moment details of this interaction are known to have a significant impact on student behaviours and outcomes. These interactions are also influenced by the larger factors which influence the particular groups of students and the areas the teacher is assigned to teach.

All of this makes for a highly complex picture. We have to state at the outset that these issues are more difficult to address than curriculum because they relate to what is done at the school and classroom level rather than at a more centralized level. While the Department of Education can exert considerable influence over curriculum by virtue of its prescriptive power, it is not as easy, nor as appropriate, to prescribe the details of how teachers are hired or assigned, much less how they function in the classroom. Also, although a good deal is known about effective teaching practices, much of this is generic and is difficult to narrow down to the grade levels of interest in this study.

The Local Context

Starting with the macro level, the number of teachers available to the system is a significant determinant of what can be done in schools and classrooms. Teacher allocations in this province has been the topic of a recent major review and policy change and we have no desire to revisit this issue in any detail. Suffice it to say that, although there has been a significant reduction in teacher numbers over the long term, this has not been as rapid as enrolment decline. Overall

student/teacher ratios have thus improved substantially. Successive governments have allowed more teachers to be retained than would be the case had the enrolment-driven allocation formula been strictly maintained. Strong arguments have been made that the student/teacher ratio is not a meaningful measure of the ability to deliver programs, mainly because small schools struggle to maintain sufficient teachers to cover the program. It is also true that improved student/teacher ratios do not necessarily translate into smaller class sizes. Class size is a function of how teachers are deployed to schools and assigned within schools.

Independent of whether intermediate schools are organized along homeroom or subject teaching lines (a point which we address later in this chapter), an argument can be made that the teaching force needs to be reasonably balanced across the various specialties. The 2002-03 Educational Staff Record did not report the subject area expertise of teachers other than those at the senior high school level. However, since most schools encompass both intermediate and high school grades, the ESR results are perhaps a reasonable approximation to the intermediate situation. The ESR indicates that including overlaps, where teachers could report more than one area, close to half of all high school teachers reported having expertise (defined as 6 or more university courses in a subject) in English. The next most common areas were social studies (defined as history and geography in this case) with about 39%, sciences (combined) at 33% and mathematics with 25%. Most other areas accounted for 12% or fewer.

To the extent that these results apply to the intermediate level, and considering the proportions of time allocated to each subject, it can be argued that most areas should have an adequate total number of teachers and that English language arts probably has a considerable surplus. Our own survey results, to be reported later in this chapter, give a somewhat more detailed picture of this, along with teachers' own perceptions of the areas in which they feel prepared to teach.

At the micro level, the Program of Studies has this to say about teaching strategies in the intermediate grades:

> *Early adolescence is a time of rapid physical growth, of intense desire for autonomy, of questioning, and of searching for values. Young adolescents need someone with whom they can talk over problems and work out solutions. The homeroom, where students spend a substantial amount of time with the same teacher every day, provides stability.*
>
> *In the intermediate grades, students consolidate skills for continued learning (e.g., communication and numeracy skills) and develop competence in decision making, leadership, self reliance and taking*

> *responsibility. Problem solving, discussion, group procedures, and strategies that promote independent thinking are the primary approaches to education in the intermediate school. Ongoing assessment and evaluation determine students' remedial and enrichment needs.*

Within the curriculum documents for various subject areas, there are many comments on teaching strategies. For example, the curriculum guide for the grade 8 Newfoundland and Labrador History course has this to say about instruction at the intermediate level:

> *Today's students come with increasingly diverse backgrounds and experiences. An effective instructional environment must incorporate principles and strategies that support this diversity, while recognizing and accommodating the varied learning styles, multiple intelligences, and abilities of individual students. Teaching approaches and strategies must actively engage all students in the learning process, through their involvement in a wide variety of experiences. The nature and scope of history provide unique opportunities to do this. To meet these challenges, this history course must be*
>
> - *student centered*
> - *inviting and inclusive*
> - *respectful of diversity*
> - *participatory, interactive, and collaborative*
> - *engaging and relevant*
> - *challenging*
> - *inquiry-based and issues-oriented*
> - *reflective*

Similarly, the grade 7 mathematics curriculum guide makes the following statement:

> *The learning environment will be one in which students and teachers make regular use of manipulative materials and technology, and actively participate in discourse and conjecture, verify reasoning, and share solutions. This environment will be one in which respect is given to all ideas in which reasoning and sense making are valued above "getting the right answer." Students will have access to a variety of learning resources, will balance the acquisition of procedural skills with attaining conceptual understanding, will estimate routinely to verify the reasonableness of their work, will compute in a variety of ways while continuing to place emphasis on basic mental computation skills, and will engage in homework as a useful extension of their classroom experiences. . . .*
>
> *The reality of individual student differences must not be ignored when making instructional decisions. While this curriculum guide presents*

> *specific curriculum outcomes for each grade level, it must be acknowledged that all students will not progress at the same pace and will not be equally positioned with respect to attaining any given outcome at any given time. . . .*
>
> *As well, teachers must understand, and design instruction to accommodate differences in student learning styles. Different instructional modes are clearly appropriate, for example, for those students who are primarily visual learners versus those who learn best by doing. Further, the practice of designing classroom activities to support a variety of learning styles must be extended to the assessment realm; such an extension implies the use of a wide variety of assessment techniques, including journal writing, portfolios, projects, presentations, and structured interviews.*

All of these statements and most others that we were able to locate stress the desirability of an investigative approach, focus on diverse student needs and abilities, indicate that students will not progress at the same pace and exhort teachers to use a wide variety of teaching strategies. While we support, in general terms, the spirit of such statements we also sense from experience and from the consultations that this is placing a large burden on teachers. When combined with other issues, such as the presence of students with severe disabilities or behaviour problems, our concern is that this approach to instruction presents an almost impossible burden on teachers.

The Consultations

Focus groups and interview respondents made a number of points about teachers and teaching. In particular, specialist versus generalist teaching and the issue of structured versus more student-centered teaching received some attention.

Specialist versus generalist teaching. Administrators admitted to being conflicted about the degree to which specialist teaching should be practiced at the intermediate level. Interestingly, there seems to be little debate around specialists for music, physical education, art, and French. It is the need for specialists for mathematics, science, social studies, and the humanities which seems to be controversial. The main concern seems to be that specialist teachers for academic subject sometimes take too much for granted in terms of student background knowledge and teach the curriculum rather that the child. Also, concern was expressed that too many specialist teachers for a given class result in a loss of connection with the student as a whole person. This manifests itself, for example, in each teacher assigning homework independently of what other teachers are doing. In contrast, those in support of specialist teaching pointed to the need for subject expertise. The comment was made that “the days are gone

when just anyone can teach grades 7-8-9 math." Supporters emphasized that it is essential for teachers to be competent in any subjects they teach and the determination of that level of competence must outweigh any preference for homeroom teaching.

Most principals and teachers felt that it is important to minimize the number of specialists at grade 7 and to gradually increase specialization in grades 8 and 9. Many principals reported they have assigned small teams of teachers (2-3 teachers per class) at grade 7 and added to this number for grade 8 and 9. Most senior district administrators supported this approach, but were emphatic that specialization is essential in mathematics, science, and French.

A number of principals reported much success with a teacher advisory (TA) program. The intent of this program is that each teacher in the school, including specialists, is assigned a group of students. This results in smaller groups of students and greater individual contact.

Characteristics of intermediate teachers. A number of comments were made about desirable characteristics of intermediate teachers. A common theme was that it is essential for those teaching intermediate students to understand the nature of the adolescent learner. It was also stated many times that intermediate teachers need to be familiar with the latest research on brain development and be able to apply findings to their classroom management and instructional strategies. Both of these points have implications for both pre-service teacher education and teacher professional development.

The ability for teachers to connect with intermediate learners, as whole persons, was highlighted. It was suggested that those who genuinely enjoy working with this age group and successfully connect with their teenage culture, find students still eager to please.

Many participants reported that academic work is not the number one priority of intermediate students and that it takes creativity and hard work to engage them. Teachers need to be creative and adaptable and always prepared to begin each class with a number of different lesson plans designed to tune in to students' interest at the time. As well, intermediate teachers need to have good routines and good people skills for building rapport. It was noted that teachers most successful at this level are outgoing and personable.

There was a consensus that elementary trained teachers are more effective working at the intermediate level than those trained at the high school level. However, it was noted that many senior high teachers are assigned to the

intermediate level despite any preference they may have for working with older students. This is obviously a function of the location of most intermediate students in high schools.

Some other desirable characteristics highlighted during the consultations were that teachers need to be comfortable with noise, open-minded, motivational, trendy, and compassionate. Many mentioned that a high teacher energy level is essential if learners are to be kept engaged and on-task. A number of participants felt that the intermediate teacher needs to be a risk-taker, willing to try new things.

Teaching methodologies. There was a convergence of opinion around the teaching methodologies that work best with young adolescent students. However, the consultations revealed a wide gap between what was reported to be appropriate instructional strategies and what was reported to be actual practice. The consultations also revealed a disconnect for teachers between covering course content and teaching to the student. Time built into the curriculum for remedial support was recommended. Initiatives to reduce classroom diversity, and balance specialist with generalist teaching also comprised much of the discussion.

Many participants were of the view that instructional methodologies are not consistent with the nature of the adolescent learner and, with the exception of some all-grade schools, the transition from grade 6 to grade 7 was stifling for students. There was a consensus that teaching at the intermediate level continues to be mainly teacher-directed. Many commented that the instructional model is predominantly that used in senior high schools, and that intermediate classrooms resemble senior high environments.

Acknowledging the adolescent's need for movement and social interaction, many commented on the need for a student centered instructional model that incorporates inquiry-based learning, hands-on activities, and project based group work. There was widespread agreement that many intermediate teachers lack the strategies designed to promote such an instructional model.

The Constructivist Model and Middle School Teaching

The literature on instruction for the middle grades takes several different threads. Thus, rather than presenting a unitary section based on the initial literature review, three different lines of research are described. The first, derived from constructivist theory, argues for student-centered teaching involving a wide variety of techniques intended to reflect the wide range of developmental levels and the rapid changes that occur in young adolescents. This approach is clearly reflected in the local

curriculum documents, as the above examples attest. A second thread, less theoretically oriented but with substantial empirical backing, argues for a more direct approach to teaching, emphasizing content orientation and creating a productive task-oriented classroom environment. A third thread is related to the second but more explicitly focuses on time allocation and use.

This section looks briefly at the literature deriving from constructivist theory. This theory, derived from the works of Dewey, Piaget, Vigotsky and others holds that individuals actively construct knowledge, based on their stage of development, their past environment and experience and their interactions with the learning environment. Under this model, the teacher's role is seen in terms of mediation of learning. Constructivists argue that middle school teachers should "set up an environment that promotes active learning through providing authentic hands-on and minds-on learning experiences within a social context" (Knowles & Brown, 2000, p. 110). This form of instruction links content to students' lives (Davies, 1995). In so doing, students are mentally engaged and build their own understandings. A variety of teaching strategies create lifelike experiences for young adolescents including: the use of artifacts; role plays; community service projects and immersion projects (Davies, 1995).

Again, according to this line of argument, middle school teachers should take advantage of the socialization needs of young adolescents by designing collaborative student learning experiences. Of course, to ensure success adequate time must be spent early on in developing the necessary interpersonal skills needed to work in such collaborative settings. When structured appropriately, collaborative learning enhances achievement, improves self-esteem and improves relationships (Slavin, as cited in Knowles & Brown, 2000). Writing workshops, literature circles and group projects are examples of collaborative learning experiences which offer students the opportunity to construct their knowledge while collaborating with others. Through such exchanges, students develop skills in processing information, creating meaning and critical thinking (Knowles & Brown, 2003). Research projects and group oral presentations are other examples of collaborative activities that help engage students in meaningful learning.

While theoretically strong, the constructivist approach is somewhat lacking in empirical evidence on its application to classroom environments. Although some specific classroom strategies, such as cooperative learning, have been well researched, this technique is not easy for teachers to implement in classroom (Gillies, 2007). Such techniques are complex and require considerable refinement to work as well in large scale applications as they do in more controlled research settings. In fact it is interesting to note that in the 2003 PISA mathematics assessment (Busière, Cartwright and Knighton, 2004), student preference for

cooperative learning situations showed a negative and preference for competitive learning situations a positive association with achievement. While the definition of cooperative learning used in PISA was not the same as that used by proponents of cooperative learning, this is one of the few pieces of empirical evidence which seems to contradict the conventional wisdom in education that a cooperative environment is preferable to a competitive one.

Classroom Processes and Student Achievement

A second line of research on teaching strategies is that based on a large number of studies of the relationship between classroom interaction and student achievement. Such studies have typically used classroom observation as the means of measuring classroom process and conventional achievement tests as outcome measures. Other results have come from large scale assessment studies, where data on classroom processes have been gathered through questionnaires and the results correlated with achievement in core subjects , particularly language arts, mathematics and science.

Much early work on teaching strategies was based on a relatively simple "process-product" model. The archetypical study under this model was a small scale classroom observation study in which various classroom processes were categorized and correlated with some measures of achievement. During the 1970s, this approach was elaborated in a number of relatively large scale quasi-experimental field studies (e.g. Brophy & Evertson, 1974; Stallings & Kaskowitz, 1974; Berliner, et. al., 1978; Clark, et. al., 1979). Although research of this nature seems to have declined in recent years, these studies continue to have a significant impact, especially since their results are supported by those from more recent large scale assessments.

Much of the early research on teaching was summarized in a volume by Dunkin and Biddle (1974). Other major syntheses of such work appeared in the Third Edition of the Handbook of Research on Teaching (Wittrock, Ed., 1986, particularly chapters by Shulman, Brophy and Good, Rosenshine, and Stevens and Doyle). A major extension of the process-product model involves considering intellectual and social/organizational transactions under which teaching is mediated to produce learning. This concept of mediation forms the basis for a broader approach that can help integrate research on teaching and learning. Indeed, this model is closer to the constructivist perspective than to the behaviourist view which characterized earlier research and serves to bridge the gap between these theories.

Many of the effects identified in this research are supported by recent research syntheses, particularly those by Wang, Haertel and Walberg (1993) and Marzano (2003) and by a number of reports based on the PISA studies (e.g. Kirsch, et. al., 2002; Artelt, et, al., 2003). In their well-known synthesis of factors influencing achievement, Wang, Haertel and Walberg (1993) advanced the concept of "proximity" as a way of thinking about the relative effects of various factors. The general hypothesis is that "proximal" factors - those which touch most closely on the day to day lives of students - are likely to be more influential than more "distal" factors. Thus, classroom management, cognitive processes, meta-cognitive processes (i.e. learning about learning), home environment, parental support and student/teacher social interactions showed stronger relationships to achievement than broad state and district level educational policies. This point is of crucial importance for policy research because it suggests that broad policy initiatives are likely to result in improved learning only if they can be translated into change at the individual teacher or student level.

More specifically, that synthesis showed that the variables showing the strongest relationships with achievement are those in the areas of classroom management, meta-cognitive processes, cognitive processes, home environment/parental support and student/teacher social interactions. Motivation, peer group influences, quantity of instruction, classroom climate, and other proximal variables also received high rankings (Wang, Haertel & Walberg, 1994). Variables related to broad state and district level educational policies were shown to be less influential. However, no consideration was given in the Wang, Haertel & Walberg formulation to the possibility of indirect influences of such factors, through their more direct impact on instructional processes.

Some recent syntheses have been more specific in identifying positive influences on achievement. For example, Scheerens and Bosker (1998) produced a ranking of school level factors found to have positive influences on learning. These include time, monitoring, pressure to achieve, parental involvement and content coverage. The type of school climate most likely to enhance learning is an orderly atmosphere, rules and regulations and good student conduct and behaviour. Similarly, effective classroom management strategies include direct instruction, monitoring student progress and positive work attitude.

Some results directly relevant to achievement for students at the intermediate level in Canada and the Atlantic region in particular are available from a recent report completed for the Council of Atlantic Ministers of Education and Training (CAMET) (Crocker, 2005). This report used data from the SAIP and PISA studies to examine various factors influencing achievement of 13- 15- and 16-year-olds in Canada. The following are some highlights of that report:

- Teacher note-giving, showing students how to do problems and working on textbook exercises are positively associated with mathematics achievement.
- Teacher asking questions is positively associated with writing achievement.
- Number of pages of writing per month is positively associated with writing achievement.
- Doing group work and working on mathematics projects are negatively associated with mathematics achievement.
- Teacher reading from the textbook is negatively associated with writing achievement.
- Teacher assignment of homework is positively associated with achievement
- Teacher specialization is positively associated with achievement for mathematics problem solving but not for mathematics content or writing.
- Compared to other regions of Canada, there is less teacher specialization in subject areas and lower levels of teacher assignment to their areas of specialization in the Atlantic Region
- Disciplinary climate tends to be relatively positive in Canada compared to other countries. In PISA, positive disciplinary climate is associated with higher achievement in some, but not all, Canadian jurisdictions.
- Similar results were found for teacher-student relationships.
- Noise and disruption and lost time in the classroom are negatively associated with SAIP mathematics achievement.

Taken together, these results reinforce other research which indicates that variables identified with "structured teaching," positive teacher-student relationships, positive disciplinary climate and less disruption and lost time all positively influence achievement while those linked to more indirect approaches to instruction have a negative effect. We hesitate to add that the term "structured teaching" is not synonymous with a transmissive, often called "chalk and talk," model of teaching. Rather, the term should be taken as referring to an orderly, on-task learning environment, no matter what the specific instructional strategy.

Time and Opportunity to Learn

An overarching feature of much of the research summarized above is that it is desirable to create a classroom environment which maximizes time and student engagement with academic tasks. Even before much of this research occurred, this idea was captured in a time-based model of teaching and learning proposed by John Carroll (1963). Formally, Carroll's model was a mathematical formulation

of how teaching influences learning. The key components were opportunity to learn, time allocated by the teacher and quality of instruction. This model is further linked to a broad approach to teaching, and to educational policy, in its extension by Bloom (1981) to the concept of "mastery learning." In an attempt to directly address the issue of equity in learning, Bloom proposed that time be varied sufficiently to allow almost all students to achieve specified learning outcomes. Doing this, of course, requires significant variation in both school organization and teaching strategies, to the extent that it is difficult to find examples of large scale implementation of mastery learning, despite its strong research support. The research on time and opportunity to learn has also been summarized in a recent paper prepared for CAMET (Crocker and Gill, 2006). This paper made a number of recommendations on time allocation and use and minimizing disruptions. Some of this requires action at a broad policy level while other elements are in the hands of schools and teachers.

One of the syntheses documents cited in that report has particular relevance to our proposals to relieve the pressures on teaching and learning by reducing the number of required subjects and streamlining the outcomes within subjects. A review by Marzano (2003) concluded that time is at the top or very close to the top of any list of school level factors Yet, Marzano pointed out that, at least in the past, the required curriculum outcomes were too many to fit into the classroom time available. Moreover, much classroom time is lost due to factors having nothing to do with learning. Under such conditions, opportunity to learn is severely compromised. Marzano argued that, because of severe time constraints, schools should reduce the amount of content teachers are required to address. Curriculum should be fine-tuned to identify its essential elements and should be organized and sequenced to optimize the learning experience. Teachers need to be diligent in not straying from the assigned curriculum and should not make idiosyncratic decisions regarding what to cover and what to leave out.

It is interesting to note that many of the other factors known to affect learning, particularly classroom management and teaching strategies, may themselves be conceptualized as ways of increasing student academic learning time. Indeed, such factors are an inherent part of the Carroll model itself, affecting both time spent and time needed. For example, the Carroll model implies that higher quality of instruction should reduce time needed and that improved classroom management processes should increase time spent.

An obvious consequence of the time model is that finding additional productive learning time is a key way to improve achievement for students who are falling behind in core areas. Moving to a more flexible program, including some electives, would allow this time to be found within the regular school schedule.

However, this time needs to be used productively by focusing on gaps in student knowledge and skill in core areas. This provides strong justification for the earlier recommendation for the development of bridging courses and finding time within the school schedule to implement these courses.

We did not investigate time allocations, uses and losses in this study as this was the subject of a recent comprehensive review for both this and the other Atlantic Provinces (Crocker & Gill, 2006). However, we did look at homework and absenteeism, which are addressed in the following sections.

Homework

Homework is a well established element of schooling, and is an obvious way of adding to learning time. At the same time, homework is controversial because it is not particularly easy to manage in light of other commitments on the part of students and parents and because the assignment and monitoring of homework adds to teacher workload. We have two concerns here. First, whether there is any evidence that homework has any impact on learning, and second, whether the amount of homework being assigned to and done by intermediate students is reasonable.

Fortunately, a recent comprehensive review of the effects of homework on academic achievement is available (Cooper, Robinson & Patall, 2006). Of more than 900 empirical studies conducted between 1987 and 2003, about 75 met the selection criteria established by the reviewers. These studies were reviewed using established qualitative and quantitative synthesis methods. Most studies referred to homework in either language arts or mathematics.

The results showed the effects of homework to be generally positive. Effects are very small at the elementary level but increase at higher grades. Like other factors affecting learning, the effects are not large enough to make a decisive difference for most students but can certainly contribute to a difference between pass and fail for a marginal student. Limited information was available from the research on the optimum amount of homework but this suggests that the upper range for high school students is between 90 and 150 minutes per day.

Data on homework from the large scale assessments (SAIP, PISA, TIMSS), as reported by Crocker (2006) are consistent with the results given in the Cooper, et. al. review.

Parents responding to our survey reported a wide range of homework times for their children when they were in grade 9. The modal amount was 4-6 hours per

week, with about one-third of parents reporting this range. About 25% reported each of 1-3 or 7-10 hours, while 10% indicated that their children spent more than 10 hours per week on homework. About two-thirds of parents felt that the amount of homework was about right. However, 47% of those reporting 1-3 hours of homework felt that this is not enough, while 38% of those with more than 10 hours felt that this is too much. A large majority of parents thus seem prepared to accept homework of as much as 10 hours per week. Close to 80% of parents reported that they spent at least some time helping their children with homework.

Students were asked more specific questions about the amount of homework they do in an average week in four core subjects and in all other subjects. On average, students reported spending just over one hour (1.12 hours) per week on mathematics and just under one hour (.70-.89 hours) in each of English language arts, science, social studies and all others combined, for an average of 4.3 hours per week total. Although the range was relatively narrow (more than 50% were in the less than one hour range for each subject), a few students reported large amounts of more than two hours per subject.

A small positive relationship was found between the amount of homework and student reported average marks. However, there was a levelling-off effect at more than 4-6 hours with those reporting more homework than this doing no better than those in the 4-6 hour range. Again, this may be related to ability or prior achievement. Assigning homework above some optimal level is unlikely to offset other factors that contribute to low achievement.

Despite complaints about excessive homework, for the most part, the amounts of homework reported are by no means excessive and are a bit below the range that most respondents might find acceptable. This suggests the possibility that the homework concerns are coming from those exposed to the upper limits of the distribution. Certainly, efforts need to be made to curtail homework in excess of 7-10 hours per week. Six hours or so seems more reasonable and is more consistent with the literature and most common local practice.

Absenteeism

Not surprisingly, absenteeism has been shown to be significantly associated with lower achievement (e.g. CMEC, 2002). Students cannot be expected to learn if they are not in school. Generally speaking, absenteeism is a significant issue only for the small numbers of students who are chronically absent. Students were asked to report the number of says they were absent from school last year. Results broken down by grade are shown in Figure 5.1.

Figure 5.1

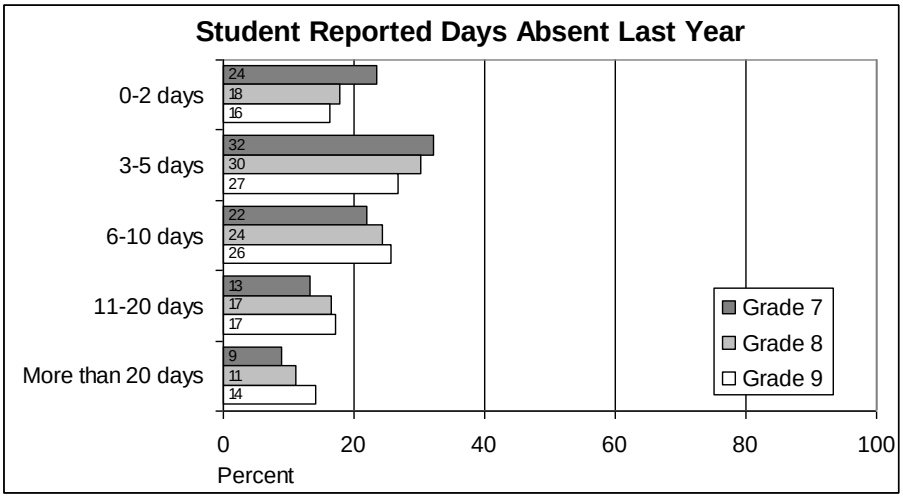
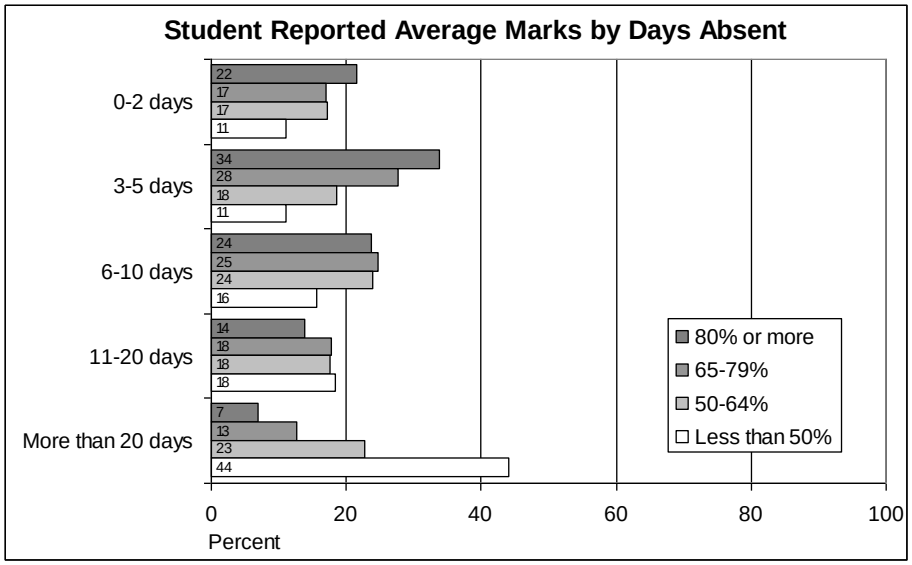


Figure 5.2



These results indicate that there is cause for serious concern about student absence. First, the proportions of students absent for 11-20 and 20 or more days are much higher than we had anticipated. Absenteeism increases with grade level, though not to as large an extent as might be expected. The more important point is that high absenteeism is strongly associated with student marks. This is especially true for those absent for 20 days or more.

The CAMET time study (Crocker & Gill, 2006) noted that chronic absenteeism does not seem to be a severe problem in the region, but argued that school districts need to have clear policies on absenteeism and a means of monitoring absenteeism, especially for students with high absence rates. This study shows that absenteeism of intermediate students in this province is higher than that report indicated. We also note that most intermediate students have not reached legal school-leaving age and that schools have an obligation to report instances of chronic absenteeism. We reiterate that the recommendations made in the CAMET report remain valid and note that it is likely that the focal point for addressing absenteeism probably needs to be on students at the intermediate level.

Grade Retention

Grade retention or requiring students to repeat a grade is a commonly used means of giving students more time to bring themselves up to grade level expectations. Grade retention has a common-sense ring to it and certainly enjoys a considerable measure of public support. In terms of the time model, grade retention is an obvious way to find a substantial block of additional time for students who have fallen behind grade level expectations.

Grade retention has been highly controversial, with its proponents frequently decrying the practice of "social promotion" or advancing students with their age group regardless of their performance and its detractors citing the ample evidence that it does not work. With the increased concern with the relatively poor performance of students in the United States, grade retention has become an increasingly popular way to address this problem. In particular, several large city school boards (Chicago, New York) have mandated grade retention as a means of addressing achievement difficulties. This has spawned a large amount of literature, of both a political and research nature, to the point where it can be argued that grade retention is one of the most widely studied areas of educational policy.

The problem with grade retention is that there is strong evidence that it does little or nothing to improve student achievement, that it increased the risk of students dropping out and that, even if here is a benefit, that benefit would have to be quite large to offset the cost of keeping a child in school for an additional year, relative to lower cost alternatives. These points are supported by a well known synthesis by Shepard and Smith (1990) and a more recent meta- analysis by Jimerson (2001). The cost-effectiveness issue has been addressed from an econometric perspective in a paper by Eide and Goldhaber (2005). One thing that seems clear

from these syntheses is that grade retention can be effective only with the addition of other interventions to address the problems of the children being retained.

Some authors have recently called for an end to both grade retention and social promotion, in favour of a more refined approach to ensuring that more students can meet grade expectations. For example, Darling-Hammond (1999) has argued that skilful teaching, redesigning schools to allow closer relationships between teachers and students and targeting services to students most in need are ways of avoiding having to face the dilemma of whether to retain students or allow them to advance regardless of their performance.

Grade retention actually found strong support among the parents surveyed in this study, with 85% of parents preferring this to promoting students with their age group if they have fallen behind in their academic work. A majority (56%) of teachers also supported grade retention for students who do not meet grade expectations, with a further 38% indicating that it should be used as a last resort. Support was lower among principals, with 33% indicating that this should be used for students who do not meet grade expectations and 50% as a last resort. Very few respondents in any of the groups indicated that grade retention should not be used at all.

As for the incidence of grade retention, seven percent of parents indicated that their child had repeated a grade in school, while six percent of students gave the same response. This indicates that, while grade retention is not highly prevalent in the province, it has not been abandoned entirely. This incidence is perhaps consistent with the view that grade retention is being used as a last resort. Interestingly, enrolment figures tend to show a small bump in enrolments in grade 7 compared to grade 6, which may suggest that the transition to intermediate school is a focal point for grade retention. However, we do not have more definitive data on this and our surveys did not ask the specific grade at which a student was retained.

Again, it may be argued that schools need the ability to use more refined methods of ensuring that students meet grade expectations. Grade retention is a rather blunt instrument, especially if a full year is repeated because a student fails a course or two. This is actually the most likely scenario as students are almost always retained because of difficulties in either language arts or mathematics or both but not in other subjects. The reality is that students are not required to repeat grades because they fail in art, physical education, music or social studies but because they fail in the two core areas where high performance is expected.

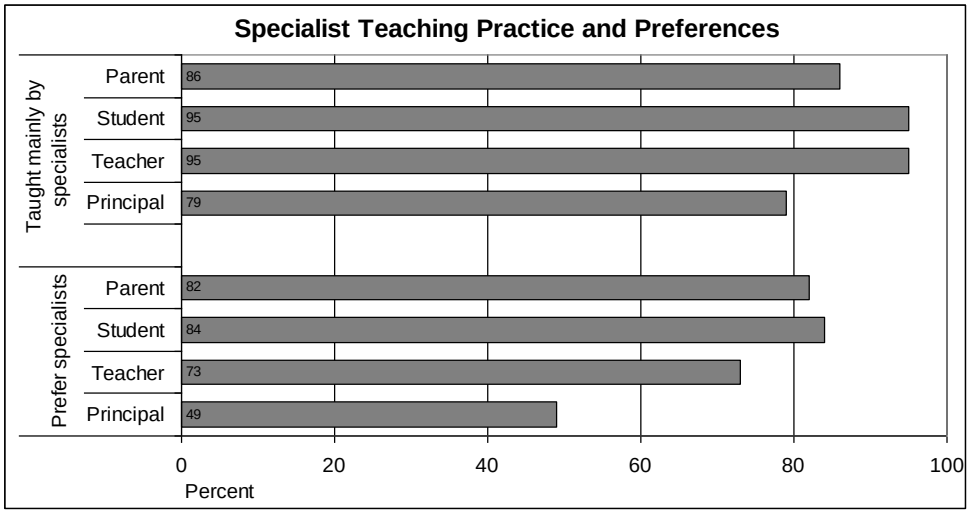
Specialist Versus Generalist Teaching

This issue has not been extensively researched and no syntheses were found to give a broad picture of the value of teacher specialization. However, some recent results from the large scale assessments indicate that, while general teacher qualifications is unrelated, specialization within subject areas is positively associated with achievement. Also, principal reports of whether they have teachers with qualifications in the subject of the test showed a positive relationship and reports of a shortage of such teachers a negative relationship with achievement (Crocker, 2007). David Berliner, who has conducted extensive studies of novice and expert teachers, identified "extensive pedagogical content knowledge, including deep representations of subject matter knowledge" as one of the attributes of an expert teacher (Berliner, 2004)

The concept of "pedagogical content knowledge" has been used by Berliner, Shulman (1987) and others to refer to a combination of subject matter expertise and a feel for what it takes to convey subject matter to new learners. Subject matter knowledge might thus be thought of as a necessary but not a sufficient condition for expert teaching, a point which seems reflected in the views of some of our interview and focus group informants, who seem to fear that exposing intermediate school students to the subject matter specialists at the high school level would be detrimental. On the other hand, the concept of pedagogical content knowledge would seem to us to be as applicable to the high school teacher as to the intermediate teacher. We would have to question the value of teacher education if high school teachers are being prepared solely as content experts.

All of the survey groups were asked if students in grades 7-9 are being taught by specialist or generalist teachers and their preferences for each of these ways of organizing teaching. The results are summarized in Figure 5.3. It is clear from this that existing practice is strongly in the direction of specialist teaching and that preferences lie mainly in the same direction. Only principals show a departure from the general pattern here, with only about half preferring a specialist approach. In response to a more specific question, about two-thirds of principals indicated that they prefer teachers to have a strong concentration in a subject area but be capable of teaching most subjects. This is no doubt a pragmatic response to the realities of balancing teaching assignments.

Figure 5.3

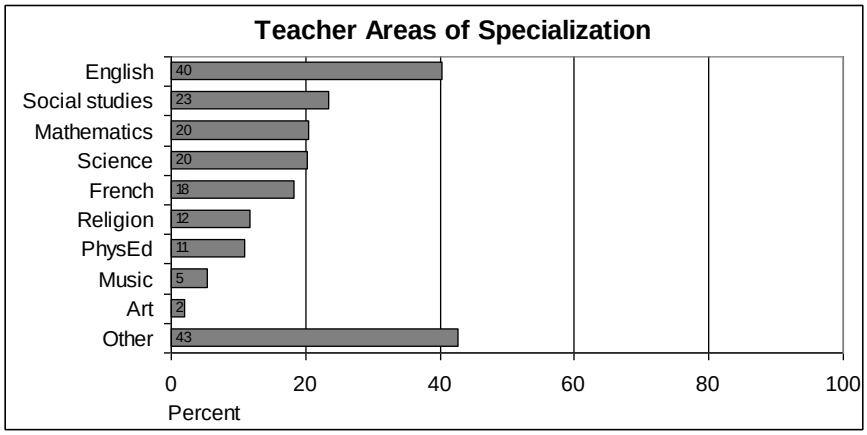


Teachers were asked further questions about homerooms and the proportion of time spent teaching their homeroom classes. Only 55% reported having a homeroom, suggesting that many teachers have "floating" assignments with no specific responsibility for a class. Homeroom teaching is slightly more prevalent in grades 7 and 8 than in grade 9. Overall, just over 40% of teachers spend 25% or less of their total teaching time in their homerooms while about 25% spend more than half their time in homerooms.

The survey results do not show the same level of conflict on this issue that is reflected in the consultations. Only principals show that kind of split. We note that the surveys are clearly more representative of their respective populations and hence must be declared more accurate than the consultations. At the same time, the populations surveyed were not considered "key informants" but rather as major stakeholder groups. Differences in views are thus likely related to the status of the interview and focus group respondents and perhaps to their greater acquaintance with the literature on early adolescence and middle schools.

Following these general questions, teachers were asked to indicate their areas of specialization, where specialization was defined as a major, minor or area of concentration in their first degree program. The results are shown in Figure 5.4. Relative to the time allocations for curriculum areas, mathematics has close to a match between available teachers and time allocations, while almost all other areas have more teachers reporting the specialization than the time allocated. This, of course, reflects the fact that almost all teachers reported both a major and a minor and may thus be considered specialized in at least these two areas. Of

Figure 5.4

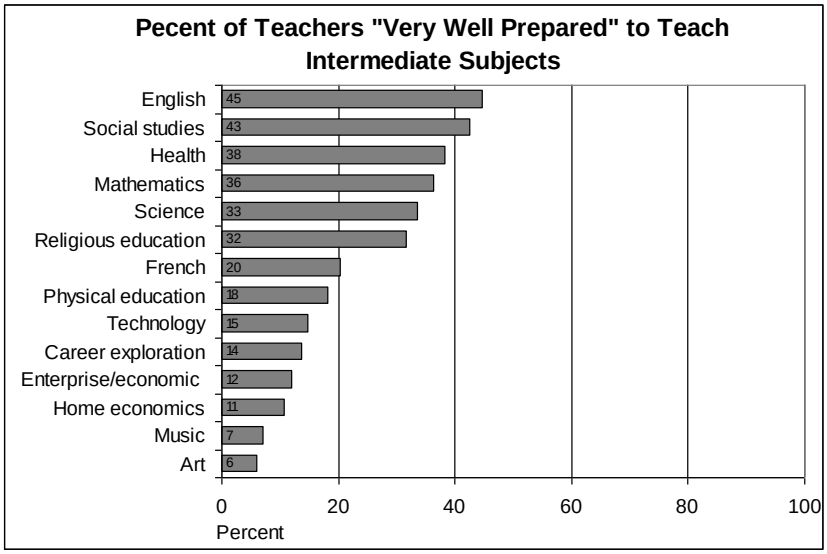


the large number of teachers reporting “other” majors or minors, no single area stood out except that some teachers reported general science and social studies as specialties. Interestingly, almost nobody reported technology, industrial arts, or home economics as areas of specialization, as these tend not to be considered academic subjects within the university context.

Having an academic major or minor is not the only way of acquiring expertise in a subject area. Another way of looking at specialization is to ask teachers about the subjects they feel comfortable in teaching. This allows us to look more directly at the subjects actually taught. Teacher responses to a question on preparedness to teacher intermediate subjects are given in Figure 5.5. This shows a bit more clearly that, relative to time allocations to subjects, there is no shortage of teachers who feel prepared to teach most areas of the curriculum.

Nevertheless, the results raise the issue for subjects having only small numbers of teachers, of whether there are sufficient teachers to allow assignment of a specialist in these areas to all schools. This is an issue for any subject for which there are fewer than 180 or about 15% of teachers with that specialty as this means that there are insufficient teachers to have at least one per school in that area. This is especially true for music and art. The percentages given for these subjects represent 48 teachers in Art and 56 in music, which may be extrapolated to 65 Art and 75 music teachers, clearly not enough for one per school. Looked at this way, an argument can be made that there is a shortage of teachers in these areas, a point made by the Teacher Allocation Review.

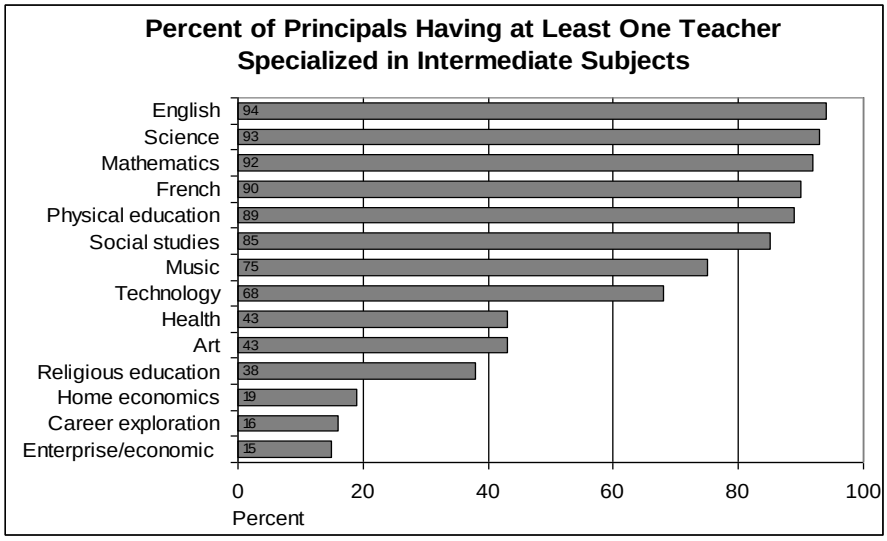
Figure 5.5



The difficulty, of course, is that the time allocated to these subjects would not warrant the allocation of a full time teacher in any but the largest schools. Unlike other areas, it appears as if few teachers have subject combinations that would include music and art, so there is much less room for staffing these subjects through assignment of those who, even without majors, would feel comfortable in teaching. Even if music and art teachers could be assigned to other subjects to make up a full assignment, there are not enough of these teachers to go around. The situation will be exacerbated if, as recommended, these subjects become optional, because it is likely that this will result in less overall demand without reducing the need to have someone in each school prepared to teach these subjects.

Fortunately, a significantly different picture emerges when principals were asked to indicate if they have at least one teacher who may be considered prepared to teach each of the intermediate subjects. The data on this are given in Figure 5.6. While, even in the core subjects, a few principals (mainly those in very small schools) reported not having a specialized teacher, the numbers indicating that various subjects are covered by at least one teacher are much larger than what would be suggested by the number of teachers in some of the smaller areas pf specialization. In fact, home economics, career exploration and enterprise/ economic education, rather than music or art, are considered by principals to be the areas of greatest shortage.

Figure 5.6



We see no solution to this problem within the existing teacher education system. It is unlikely that schools of music or art could produce sufficient teachers in the short term to fill the gap and we sense that art and music teachers tend to be so highly specialized that they would not fit well into a situation which requires them to teach most of their time in other areas, especially since there are other teachers well prepared to take up these areas. As for the subjects suggested by principals as lightly covered, there are no formal programs designed to prepare teachers in these areas. Using itinerant teachers or programs to retrain teachers initially trained in other areas are possible ways to deal with this. In any event, if our recommendations are followed, there would be reduced emphasis on these areas in the curriculum.

Class size

This area requires separate attention because of the widespread belief that class size is a major determinant of how well students do in school. Class size is one of the highest profile public issues in education. Class size is also strongly related to teacher allocations and hence to the resources required to operate the system. However, it is important to note that class size is not the same as the more commonly used measure of teacher resources, that of student/teacher ratio. Student/teacher ratio measures the total teacher resources available to the system. Class size is a function of how these teachers are deployed to and within schools. To the extent that teachers are assigned to specialist, service or

administrative functions and not to homeroom classes, class size will always be larger than the student/ratio would indicate.

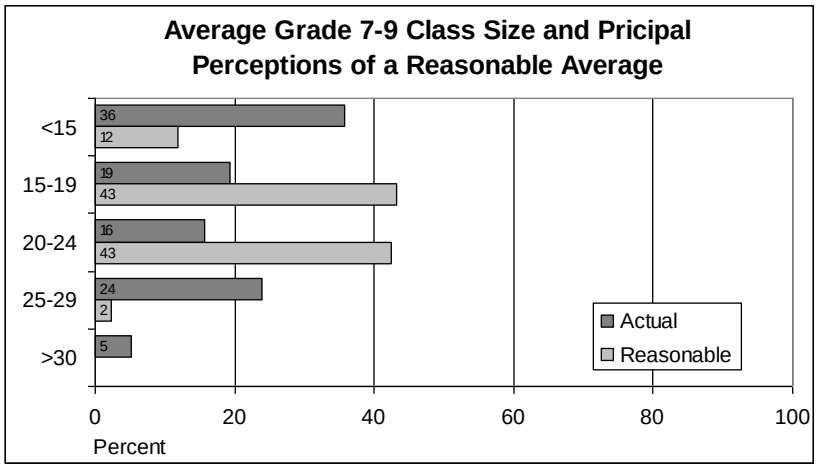
A comprehensive review of the relationship of class size to outcomes (Sheppard, 2006) was conducted as part of the recent Teacher Allocations Review. That review concluded that class size can have a number of significant benefits, including greater attention to individual students, greater student engagement and less disruptive behaviour, and even improved air quality. With respect to the most commonly used outcome that of student achievement, the evidence from recent large scale studies, using experimental designs, makes it reasonably clear that exposure to a sustained period in smaller classes can lead to improved achievement for students in the primary grades. However, the evidence is less clear, and the effects smaller, as grade levels increase. The Sheppard review noted that the definitions of large and small classes differ across studies and that this difference likely contributes to the lack of clarity on impacts. Our own interpretation of the literature is that class sizes have to be quite small (certainly less than 20), or class sizes have to be changed fairly drastically, before benefits can be detected.

The Teacher Allocation Review Commission used this report to make a case for smaller classes and particularly for the imposition of class size caps to limit the size of the largest classes. However, to our surprise, the Teacher Allocation Report did not present any data on actual class sizes in this province, even though such data are readily available.

The report of the 2002 Educational Staff Record, a full population survey of teachers conducted by the Department of Education (Department of Education, 2004), reveals that class sizes are more notable for their variation than anything else. While average class size was 20.7 (more recent data places the provincial average at 19.9), about 25% of classes had 15 or fewer students and 9% had 31 or more. Intermediate schools tended to have the largest average class size, mainly because most of the schools designated as intermediate are fairly large. For example, while grade 7-12 schools had an average class size of 21.5, the average for grade 7-9 schools was 26.0. Class size varied substantially with school size, with schools of fewer than 50 students having an average class size of 7.6 and those with more than 400 students an average of 24.6. Small schools, of course, tend to have multi-grade classes and it is frequently argued that smaller class size is a reasonable accommodation if a teacher has more than one grade.

Some more immediate data on class sizes in the intermediate grades is available from our surveys. Principals were asked to give the average class size in grades 7-9 in their school and to provide an estimate of what they would consider to be

Figure 5.7



reasonable class size. The results are shown in Figure 5.7. More than half of the classes in these grades now have less than 20 students. Taking an average from the mid-points of these ranges gives an average of 17.6 for the province. Again, there is considerable variation.

It is interesting to note that the evidence on class size from SAIP shows relationships in the opposite direction from expectations (Crocker, 2005). Students in larger classes were found to perform significantly better than those in smaller classes. On the other hand, PISA results show a non-linear relationship, in which students in mid-range class sizes do better than those in the smallest and the largest classes. The small class results were attributed to the likelihood that small classes are frequently established for students who are having difficulty which, of course, suggests that having small classes is insufficient to overcome other sources of academic difficulty.

Principals were almost equally divided on preference for classes in the 15-19 or the 20-24 range, with very few suggesting that they should be 25 or larger. Preference for class size is strongly correlated with actual class size. Most principals with classes of less than 15 would prefer classes in the 15-19 range, while those in the latter range almost all prefer to keep that range. Most of those with class sizes of 25 or more would prefer their classes to be in the 20-24 range. Almost no principals want to see their class sizes at 25 or more.

It is clear that large class size is mainly an urban/large school phenomenon. Almost all of the classes with 25 or more students are in urban schools and all with fewer than 20 students are in rural schools. This relates to both the tendency to allocate relatively more teachers to small schools, for program reasons and to how

teachers are utilized in large schools, where more teachers are assigned to specialist, service or administrative responsibilities. With government's intention to implement class size caps, it is clear that class sizes of 30 or more should virtually disappear. The information available suggests that this may have its greatest impact at the intermediate level.

If the impact of class size is most felt when classes become very small, a good many schools in the province are in the range where a positive impact on achievement might be expected. The next chapter presents some data on this issue. For now, we make the point that we support the idea of class size caps, not because we expect this to have any noticeable impact on achievement at the intermediate level but because this can have a variety of other benefits, as documented in the Sheppard report. The fact that our survey reveals that only 55% of intermediate teachers have homeroom responsibilities leads us to believe that, without a cap, there is little incentive, particularly in larger schools, to assign teachers in ways that help minimize class sizes.

Further Survey Results

This section gives a few additional survey results pertinent to teaching and teachers but which did not fit conveniently under earlier headings.

Teacher Characteristics and Grade Preferences. The question of whether intermediate teachers are essentially misassigned high school teachers was examined by two questions in the teacher survey. First, teachers were asked if their initial teacher education was at the primary/elementary or intermediate/secondary level. Close to 80% of respondents indicated that they had taken the intermediate/secondary program. In response to a question on grades they prefer to teach, 40% of teachers indicated a preference for a mix of intermediate and senior high school grades, and 32% a preference for grades 7-9 only. Fifteen percent indicated that they would prefer not to teach grades 7-9 at all. When asked if they found teaching grades 7-9 to be very rewarding, 40% strongly agreed and 49% somewhat agreed.

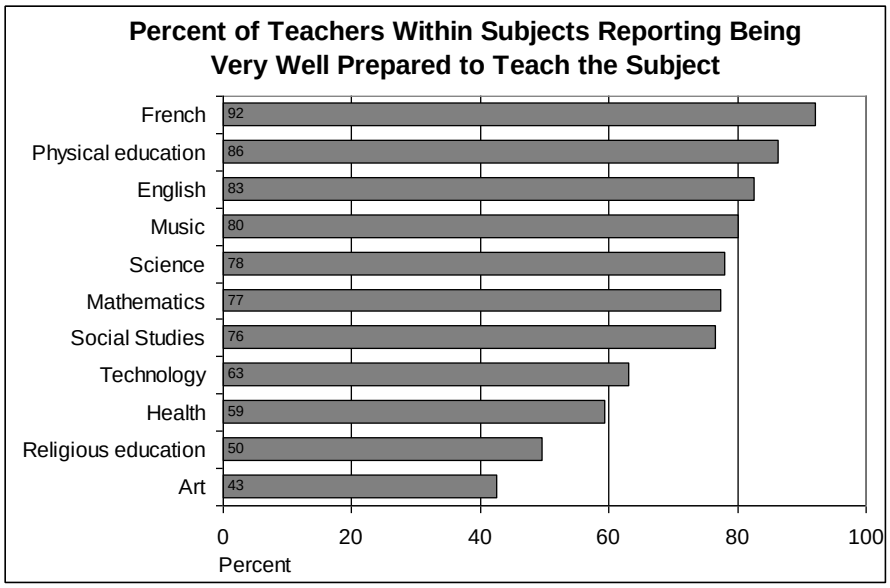
The fact that intermediate teachers are primarily products of the intermediate/secondary program is not surprising, as that is consistent with the intent of that program. Whether or not there is merit in the argument that elementary trained teachers would be preferable at this level, the reality is that this is unlikely to occur and also that this is not consistent with the general preferences for specialists. Also, the responses do not suggest that most grade 7-9 teachers see themselves as misassigned. The fact that 15% prefer not to be working at

these grade levels is a concern. However, we do not know if this is different from the preferences of teachers at other grade levels.

Teacher Assignments. The teacher assignment issue was pursued in more detail by asking teachers to identify all of the courses they are teaching in any of grades 7-9. This was cross-tabulated with teacher reported areas of specialization to give a picture of the match of assignments to specialization. The results are shown in Figure 5.8. (Subjects with only a very small number of teachers reporting are omitted). This indicates that in almost all areas most teachers feel well prepared. The lowest numbers are in religious education and art. The first is somewhat surprising since a significant number of teacher indicated that they feel specialized in that subject. The results for art are more consistent with the small number of teachers specialized in that area. It is interesting that most music teachers feel well prepared in that area, which indicates that the relatively few music teachers in the field are likely assigned within that area of specialization.

Our general conclusion from all of these results is that, with a few exceptions, the teaching force in grades 7-9 is reasonably well balanced and generally well prepared to teach within the subjects to which they have been assigned.

Figure 5.8



Conclusions and Recommendations

The literature presents a conflicting picture of the teaching and learning strategies that are appropriate for intermediate students. The constructivist perspective and the literature on the nature of early adolescence would lead us to believe that intermediate classrooms should be characterized by a wide variety of student-centered, teaching strategies, designed to address the active, social, nature of these students and the wide range of developmental maturity found at this level. On the other hand, research based more directly on the links between classroom processes and achievement leads to the conclusion that a more structured approach is more appropriate, especially when the goal is to maximize achievement.

One of our concerns with the first approach is that this can lead to a highly complex and difficult to manage classroom environment. It seems to us that it is difficult for teachers to finely calibrate a wide repertoire of teaching strategies, using different strategies for different students or groups. At the same time, we are sensitive to the views expressed in the consultations that structured teaching can be dull and uninspiring for students, especially at the intermediate level, where academic work is not the highest priority and where students are likely to be less compliant than at other levels.

There seems to be a tendency to associate the idea of structured teaching as presented here with the much narrower notion of a traditional "chalk and talk"(or perhaps these days "Power Point and talk") approach to teaching. This would be a misrepresentation of the research and of our position on the issue. Under the time model, structured teaching may actually be thought of in terms of time management. The goal is to engender a classroom environment which maximizes on-task behaviour and minimizes lost time at all levels, from the macro to the micro, and includes having most students engaged most of the time. This, in itself, does not dictate any specific form of teacher/student or student/student interaction. In fact, there is no reason to believe that more students would be engaged when the teacher is "lecturing" than under other conditions. What counts in lecturing, as under other strategies, is the quality of the lecture and the provisions made to ensure engagement. The problem is that it is difficult for a teacher to have sufficient expertise to implement a wide variety of teaching strategies while maximizing student engagement. Resorting to familiar and more easily implemented strategies is a pragmatic way to achieve the core goal of engagement.

To some degree, the contrasting views on teaching strategies correspond to differing perspectives on the most valued outcomes of schooling. A less

structured approach may be considered appropriate if the main goal is social and emotional development. If the narrower goal is to maximize academic achievement, then a focus on optimizing instructional time is likely to be most fruitful. The two models are not necessarily incompatible. In particular, the idea that learning occurs through student mediation of classroom experience is not fundamentally different from the constructivist model.

This issue is also related to that of specialization and to curriculum integration. It is difficult to imagine teachers having the necessary expertise in a variety of subject areas to be able to implement a high quality integrated program, especially one which requires a wide repertoire of teaching strategies. In any event, stakeholder preferences are strongly in support of specialization and teacher backgrounds represent a better fit to subject specializations than to integration. The evidence in support of curriculum integration is not strong enough to override these considerations and certainly not strong enough to override the well established subject-based and specialist teaching approach now in place. Even if desirable, we are not convinced that a policy change of this magnitude could be implemented.

Nevertheless, one feature of middle schools that can be implemented fairly easily is the idea of having a team of teachers act as advocates and advisors for students in the intermediate grades. Indeed, the consultations indicate that some schools have already adopted this model. In larger, schools, this typically involves dividing the school into “houses” with a core group of teachers, selected for their affinity with young adolescents, taking responsibility for each house. In smaller schools, the homeroom teachers for grades 7-9 would be the obvious choice.

Our conclusion from the surveys is that the intermediate teaching force is reasonably well balanced across subject areas and that teaching assignments are reasonably well in accord with teacher capabilities. Other than a few areas where there are insufficient teachers to permit assignment of a full-time teacher to a school, there seems to be little shortage of teachers to deliver the intermediate program as now structured or to accommodate the modifications proposed in the previous chapter. Very small schools will always have difficulties of this nature because, even with the best efforts to balance teacher capabilities, there can never be enough teachers to cover all areas. We do expect that the revised approach to teacher allocations will help address this problem and have little to add to the thrust of the recommendations of that report.

In light of the Teacher Allocation Report, we do not feel that there is any need to make further recommendations on either teacher allocations or class size. However, we feel that there is room for further research on class size using local

data. Some preliminary results will be given in the next chapter, along with suggestions for further research.

Recommendation 14

That intermediate teachers be considered mainly subject specialists and that the goal in school staffing be to assign teachers in accordance with their areas of specialization.

Recommendation 15

That the Department of Education develop guidelines for establishing a system of teacher advocates/advisors for intermediate students and encourage schools with intermediate grades to appoint teachers to these roles.

Recommendation 16

That Department of Education curriculum documents reflect the idea that the main goal of teaching is to establish a classroom environment which minimizes lost time and maximizes student engagement. Specific recommendations on teaching strategies within curriculum documents should be accompanied by discussion of ways to implement such strategies without detracting from that goal.

It is noted that a recommendation that the Department of Education prepare guidelines on homework and disseminate a parent guide to homework was included in the report of the mathematics program review. We understand that the Department of Education intends to act on this recommendation. The results of this study provide further information which indicates that most respondents do not believe the amount of homework assigned to intermediate students is excessive. In particular, weekly homework assignments of as much as 6 – 8 hours are considered acceptable at this level. Also, there are good indications that homework has greater value at intermediate and higher levels than at the elementary level.

Recommendation 17
That the guidelines on homework differentiate between acceptable weekly assignments at elementary, intermediate and high school levels, with intermediate assignments to include a range acceptable by respondents to the intermediate surveys.

The data presented here on absenteeism indicates that this is a significant problem at the intermediate level and that this has a significant impact on outcomes. Of course, we cannot be sure of the causal direction here – does absenteeism lead to poor performance or do poor performing students tend to give up and absent themselves? Nor do we have any information about what proportion of chronic absences are unexcused. Nevertheless, the utmost effort must be made to reduce the incidence of chronic absenteeism. Sections 17 through 19 of the Schools Act (1997) outlines the obligations of parents, teachers and Directors in this respect and prescribes the sanctions available for dealing with unexcused absences. We reiterate that the recommendations made in the 2006 CAMET report remain valid and argue that these need to be acted upon. For the record, these are repeated, with minor modifications, as recommendations of this study.

Recommendation 18

That Directors of Education be reminded that they are required to report instances of chronic unexcused absenteeism and that Department of Education officials work with other relevant government departments and agencies to develop a process under which parents are held accountable for unexcused absenteeism.

VI ASSESSMENT AND STUDENT ACHIEVEMENT

For many years, the quality of education tended to be judged largely by input indicators such as participation, expenditures or teacher numbers. Indeed, there is evidence that this continues, as evidenced by the Teacher Allocation Review. Governments continue to justify new expenditures on the assumption that these will buy improved quality. In some cases, there may be evidence that this is so. However, the expenditures themselves are often seen as a measure of attention to quality. However, since at least the early 1990s, there has been increasing emphasis on evaluating quality by means of outcome indicators and particularly indicators of student achievement.

A number of provinces introduced provincial assessment programs in the mid-1980s. A pan-Canadian assessment, the School Achievement Indicators Program (SAIP) was introduced in the early 1990s. SAIP has recently been replaced by a new program called the Pan-Canadian Assessment Program (PCAP). In this province there is a history of provincial assessments using commercial standardized tests going back to the 1980s. The current program of criterion referenced tests (CRTs), keyed to the curriculum, dates from the late 1990s. International comparative studies of achievement also have a history going back to the establishment of the International Association for the Evaluation of Educational Achievement (IEA) in the 1960s. However, it was not until the late 1990s that the first large scale project sponsored by a quasi-government agency, the Organization for Economic Cooperation and Development (OECD) began a large scale cyclical assessment project. Since then, the Programme for International Student Assessment (PISA) has become one of the most widely cited comparative measures.

As it happens, more assessment data is available for students at the intermediate level than at other levels. In almost all countries, all students remain in school until about age 15-16 and are thus natural targets for large scale assessment. This chapter summarizes the information gathered through our consultations and comparative analyses, presents results from local, national and international assessments involving intermediate students in this province and attempts to link these results, and particularly the need to improve, to changes in the intermediate program.

PISA and SAIP Results

Although both of these projects have been around for many years, and both are focused on improving, as well as simply recording achievement, there are few compilations of the results of these assessments which allow us to see the trends over time, locally and nationally. The results presented here have been compiled specifically for this study. Much of the comparative detail in the original reports has been stripped away so as to highlight performance trends for students in this province.

The School Achievement Indicators Program (SAIP) was an initiative of the Council of Ministers of Education, Canada. From 1994 to 2004, nine assessments were conduced on a cyclic basis, involving 13-year-old and 16-year-old students in all Canadian jurisdictions. Data are available from three cycles in each of mathematics, science and writing and from two cycles in reading. Because the assessment was criterion-referenced, with an expected standard of performance for each age group, the results are presented in terms of the percentage of students at or above the expected level. These results are difficult to present in a compact way, so we decided to limit the presentation to comparisons over time in each subject for students in this province. These results are shown in Figure 6.1. The following trends may be identified from this chart:

- In mathematics content, there were only small changes for 13-year-olds from 1994 to 2001. However, the performance of 16-year-olds declined during that period.

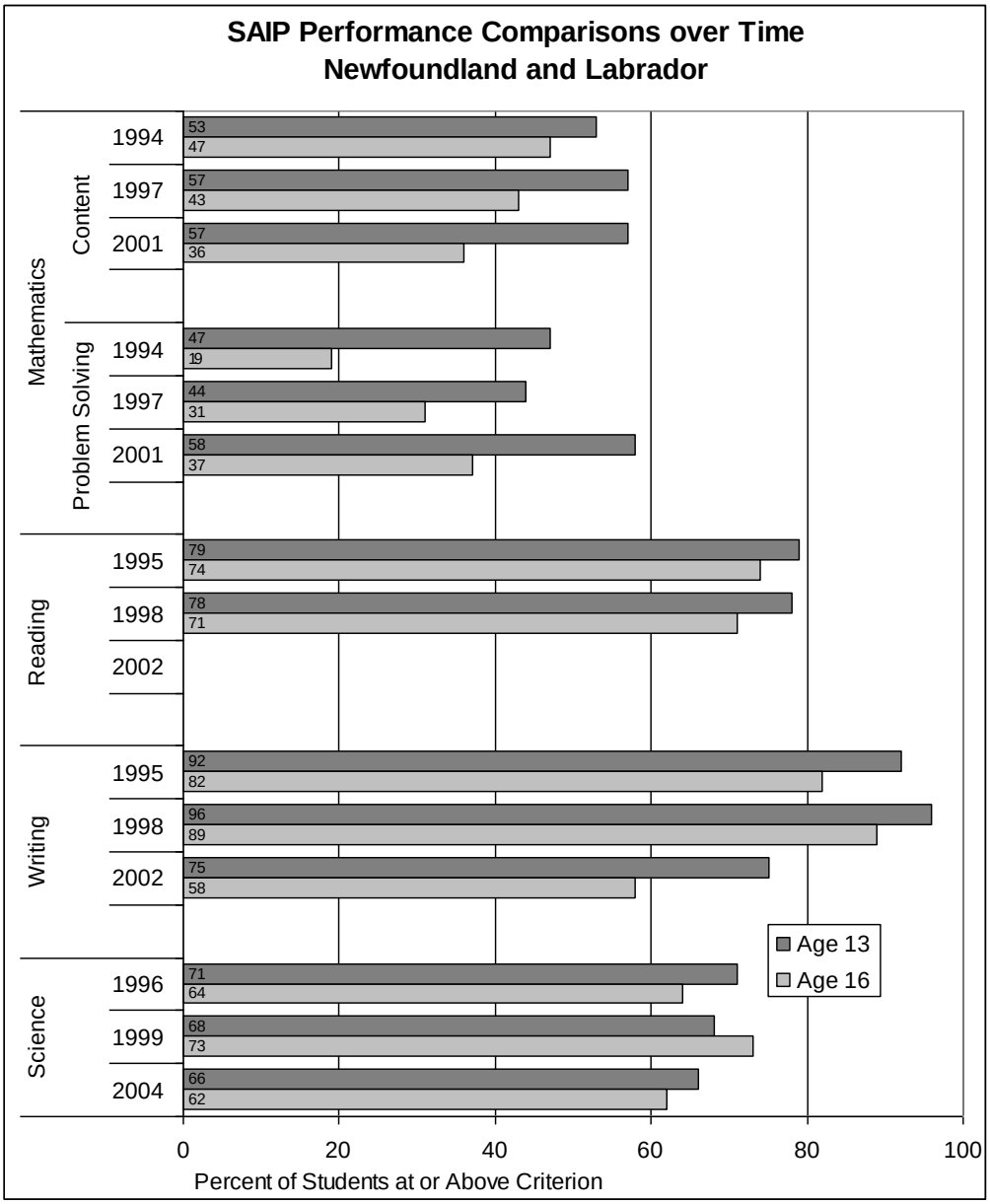
- The mathematics problem solving performance of 13-year-olds improved in 2001 compared to the results in 1994 and 1997. Performance of 16-year-olds in the same area showed steady improvement over that time, from a very low base in 1994.

- There was virtually no change in reading performance for either age group from the 1995 to the 1998 assessment. Reading was not measured after that.

- Writing performance changed only slightly from 1995 to 1998 but showed a significant decline in 2002 for both age groups.

- Science performance did not show major changes over the three cycles for either age group.

Figure 6.1


SAIP Performance Comparisons over Time
Newfoundland and Labrador
Mathematics
Content
1994
53
47
1997
57
43
2001
57
36
Problem Solving
1994
47
19
1997
44
31
2001
58
37
Reading
1995
79
74
1998
78
71
2002
Writing
1995
92
82
1998
96
89
2002
75
58
Science
1996
71
64
1999
68
73
2004
66
62
Age 13
Age 16
0
20
40
60
80
100
Percent of Students at or Above Criterion

Results were also compiled for students in this province compared to the Canadian average and to the highest performing jurisdictions. These results are difficult to present in compact form.[5] However, the following conclusions may be drawn:

- Mathematics performance of students in this province was lower than the Canadian average and considerably lower than that of the highest performing provinces (usually Quebec or Alberta) throughout the period.

- Reading and writing performance was consistently high, and not very variable throughout Canada. Newfoundland and Labrador students performed close to the Canadian average and only slightly below the top performing provinces on all reading and writing assessments until 2002, when a significant drop occurred relative to past performance. This drop was also evident in other jurisdictions, especially for 16-year-olds. It is not clear if this indicates a change in the test between the two administrations.

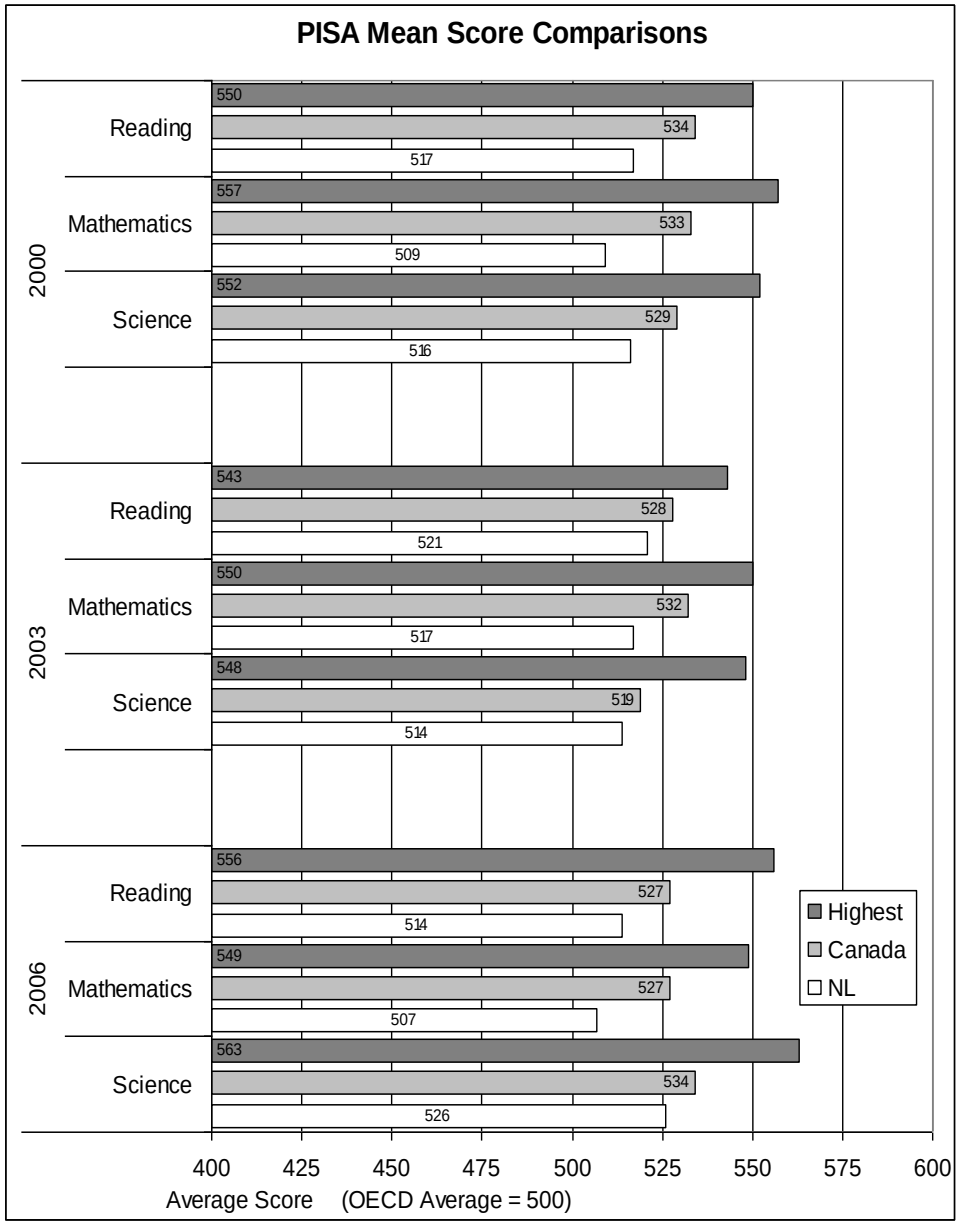
- Science performance of Newfoundland and Labrador students was slightly but consistently lower than the Canadian average and significantly lower than the highest performing provinces. There was no consistent trend over time in science performance.

SAIP was discontinued after 2004 and has now been replaced by a new Pan-Canadian Assessment Program (PCAP), first administered in 2007.[6] Part of the reason for the change was the emergence of the OECD's Programme for International Student Assessment (PISA). PISA was administered in 2000, 2003 and 2006, with reading, mathematics and science being assessed on each occasion. One of these subjects was considered the major focus on each occasion, allowing breakdowns of that subject into separate strands or sub-tests. However, overall results are available for each subject each year.

Unlike SAIP, the PISA results are given in the more conventional form of average scores. However, the scale was set to give an OECD average of 500 with a standard deviation of 100. Country and province results may be compared to the OECD average and also relative to each other. For simplicity, we have compared the average scores of students in this province with the Canadian average and with those for the highest performing country in each case. The results are shown in Figure 6.2.

[5] Tables giving these results will be submitted as part of the background documentation for the study.
[6] Results of the 2007 PCAP were not available at the time of writing.

Figure 6.2


PISA Mean Score Comparisons
2000
Reading
550
534
517
Mathematics
557
533
509
Science
552
529
516
2003
Reading
543
528
521
Mathematics
550
532
517
Science
548
519
514
2006
Reading
556
527
514
Mathematics
549
527
507
Science
563
534
526
Highest
Canada
NL
400
425
450
475
500
525
550
575
600
Average Score (OECD Average = 500)

The following conclusions may be drawn from this chart:

- The performance of students in Newfoundland and Labrador has been above the OECD average in all subjects on all occasions.

- Students in this province have performed consistently below that of the highest performing countries and below the Canadian average, though by only small amounts on some occasions.

- There has been no consistent trend over time. The greatest single improvement is a 12 point gain in science from 2003 to 2006. However, there was a 10 point loss in mathematics performance over the same period. Both of these changes are larger than would be expected from random fluctuations in the test or the student population. However, neither can be taken as indicative of any long term trend.

- Although not shown on the graph, more detailed breakdowns show this province being close to or above the other Atlantic provinces but generally significantly below the highest performing provinces, whose averages have been in the 550 range.

It is noted in passing that a widespread practice exists of reporting ranks for countries or provinces on these assessments. PISA and SAIP have been careful not to emphasize these rankings, as they typically do not take account of statistical error, and thus can exaggerate small differences that result from random error in the measures. While we have not reported the error rates here, in the interest of simplicity, the comments made have taken account of these errors.

Provincial Criterion Referenced Tests

After using for many years a commercial norm-referenced test (the Canadian Test of Basic Skills) as a provincial assessment, the Department of Education undertook in the mid-1990s the development of a new series of Criterion Referenced Tests (CRTs). These may be distinguished from the older test battery in two important ways. First, these tests are keyed to the provincial curriculum and are intended to measure the outcomes identified in local curriculum documents. Second, criterion referenced tests are intended to have an expected standard of performance, which can be used as a benchmark against which to judge whether performance is satisfactory. Typically, the results of CRTs are reported in terms of the percentage of students at acceptable levels (and sometimes at levels identified as outstanding or exceptional). In the case of the local tests, one part, consisting

of multiple choice items, is scored in the conventional way, yielding percentage scores, averages and other familiar statistics. The second part, consisting of constructed-response items, is scored by a panel of teachers and the results reported in terms of the percentage of students at five levels, where level three is considered acceptable performance.

Tests have been developed in English language arts, mathematics and science and, until the last couple of years, were administered on an occasional basis in grades 3, 6 and 9. A decision has now been made to administer the tests on an annual basis to all students in these grade levels, allowing individual student results to be reported. These results may be aggregated to the school, district and provincial levels. Results may also be broken down by topics or strands within each subject to yield a detailed picture of achievement in core areas. This is intended to allow diagnosis of areas of strength and weakness, which can provide a basis for improvement.

Because of the sporadic nature of the CRT administration, detailed time series results are not available for all subjects. Again, in the interest of simplicity, we report only overall subject results. While the main focus is on provincial results, some of the research questions require that breakdowns be made by gender, rural/urban school location and class size. Grades 6 and 9 results are of direct interest here because the first gives a picture of student entering the intermediate grades and the second a measure of exit performance.

Figures 6.3 and 6.4 show the trend in CRT results for the constructed response items in English language arts in grades 6 and 9 for the years for which data are available. Multiple choice results are not reported because these are not available for all years. Scores on the sub-tests have been averaged to give an overall result for reading and writing. The pattern in Grade 6 shows generally improving performance from 2001 to 2006, but a sharp drop in performance in 2007. On the other hand, the grade 9 results show a decline in reading from 2003 to 2006, with a significant recovery in 2007. Writing shows a similar pattern, with a smaller recovery starting in 2006. For grade 9, neither reading nor writing is at the same level as at the beginning of the period.

While these trends are too short term to draw any strong conclusions, the main concern raised by these results is that performance at grade 9 seems to have been declining at the same time as students entering from grade 6 have been improving. Even allowing for some fluctuation from year to year, this is not the pattern one would hope to see.

Figure 6.3

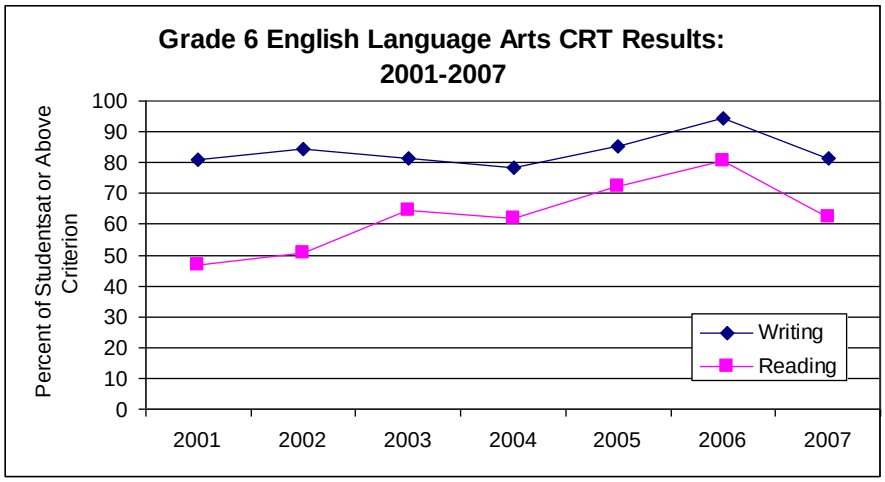


Figure 6.4

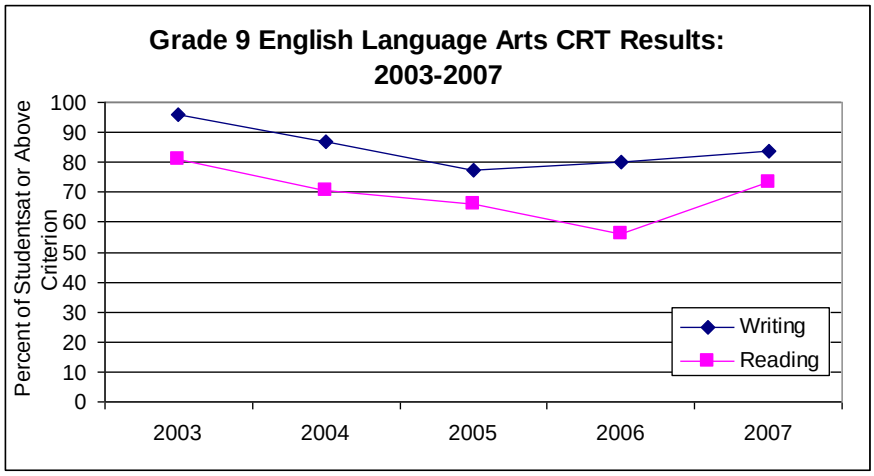
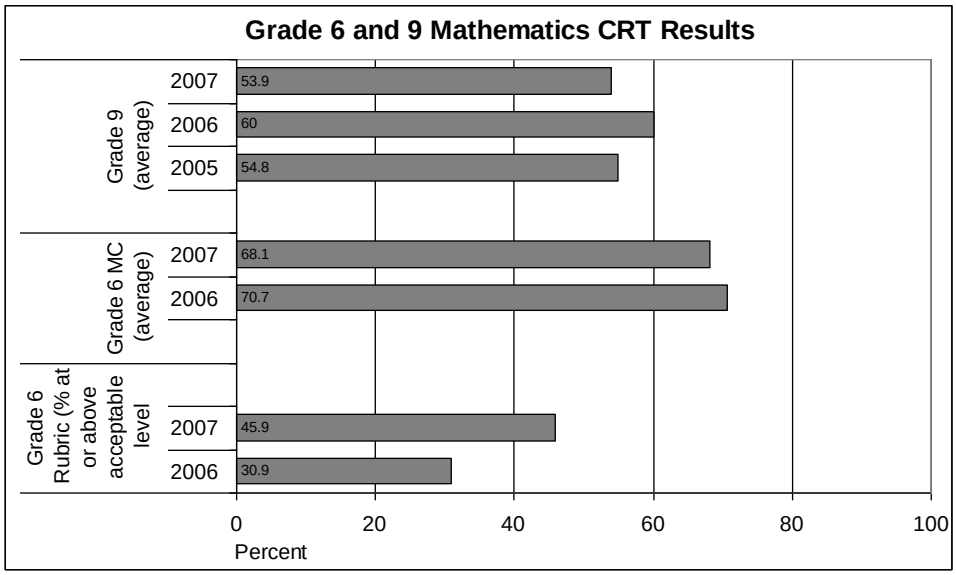


Figure 6.5



The available results for mathematics are given in Figure 6.5. For grade 9 and grade 6 multiple choice items, the results represent average scores. For the grade 6 rubric scored (constructed response) items the figures represent the percentage of students at or above the acceptable level. The results for Grade 9 and for grade 6 multiple choice items have not changed much. Grade 9 rubric scored items show an improvement from 2006 to 2007. However, the percentage of students reaching the acceptable standard remains quite low, at less than 50%. This raises a major difficulty, since the latter results convey a much less positive picture than the multiple choice results. It is difficult to tell if this is an artifact of test construction or if it shows that the focus on conceptual understanding, which is more likely to be revealed by constructed response items, is not having the desired effect.

In this case, the number of testing occasions is insufficient to show any trend. In particular, it is not possible to draw any inferences about the impact on test results of the changes in mathematics curriculum over the past few years.

Taking these results in combination with those presented for SAIP and PISA, we are led to the conclusion that not much has changed in the way of performance of intermediate level students over the past decade or more. Our view is that we need to find a way out of this essential stagnation. While not all of this can be attributed to what is happening in the intermediate grades themselves, we would expect that some of the proposals already made for opening up the intermediate

program, allowing more focus on core areas for those who need it, and allowing students to elect courses more in line with their interests, will go some way to creating a climate of improvement. Further recommendations on the use of assessment results to sharpen the focus on improvement will be made at the end of this chapter.

Factors Related to Grade 9 Achievement

One of the research questions posed for the study required an examination of the effects of various factors on achievement, within the local context. The factors identified were class size; out-of-field teaching; teaching strategies employed; teacher professional development; teacher pre-service training; evaluation and assessment practices; the learning environment; grade configuration; understanding of the adolescent learner; rural and urban differences; and, gender differences?

Because many of these factors are related to each other (for example, class size is strongly related to urban/rural location and grade configuration of the school), it is not easy to disentangle these effects using the data bases available. Other factors, such as teacher pre-service training or evaluation and assessment practices could not be matched to the achievement data because individual teachers could not be identified with individual students. The kind of analysis required to thoroughly analyze these effects is beyond the scope of this type of study.

Nevertheless, it was possible to look at four of these factors; gender, rural/urban class size and grade configurations using the available data bases. We also note that the effect of absenteeism on student marks was examined earlier. The results presented here should be treated as highly preliminary and more indicative of the need for more thorough analysis than as yielding definitive policy implications. The exception to this is gender differences, because boys and girls are distributed about equally across all kinds of schools and are almost always in the same classes. Any gender differences observed are thus more robust than differences on other factors.

As it happens, a more thorough study of the combination of gender and urban/rural effects has also been commissioned by the Department of Education, with a report due at around the same time at this report. The findings of that report will extend beyond the intermediate level and are expected to yield more stable results than those given here.

Figure 6.6

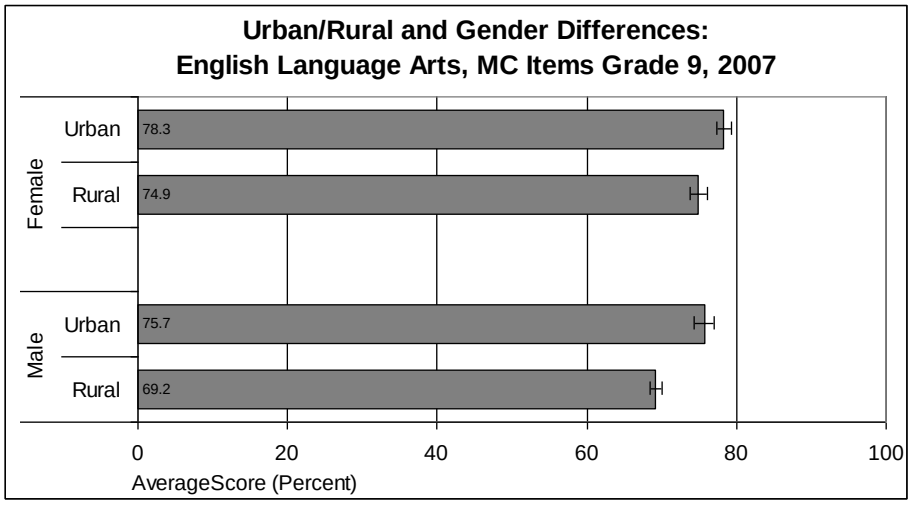
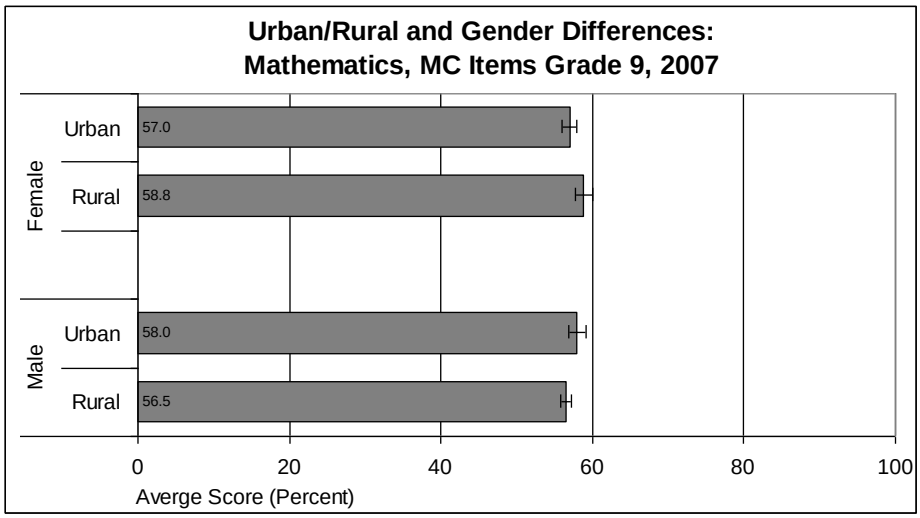


Figure 6.7

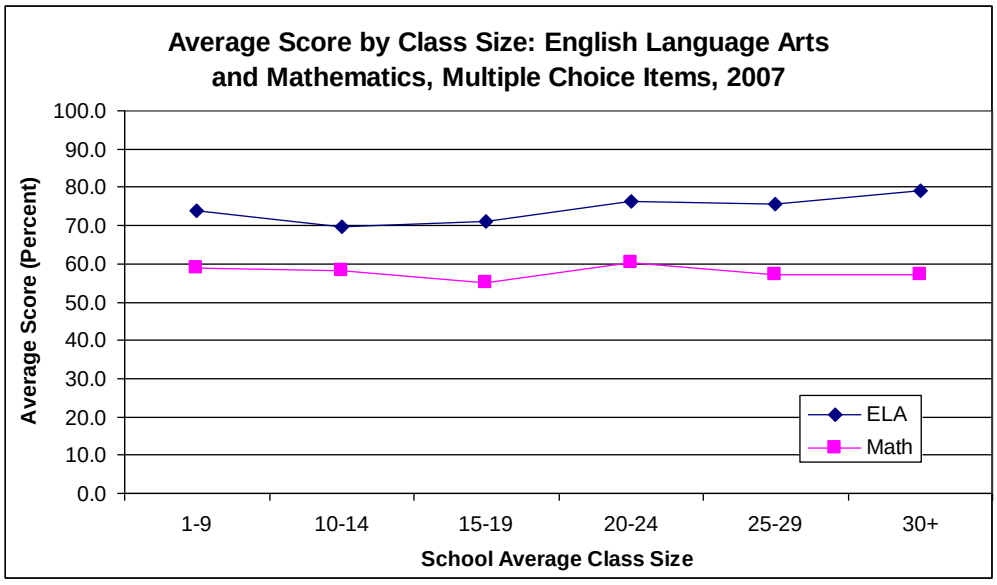


Gender and urban/rural differences have been combined into a single analysis, as there is a particular concern within the province about the performance of males in rural areas. Figures 6.6 and 6.7 show the combined effects of these two variables on grade 9 English language arts and mathematics in 2007. Only the multiple choice items are used here because the measurement properties of these items lend themselves to the type of analysis required. Also, although results for other years are not presented, the general pattern is similar.

The pattern of gender differences shown here is similar to that found in other studies. Females tend to do significantly better in English language arts, while there is no significant difference in mathematics. Urban/rural effects are also significant for English language arts but not for mathematics. The interaction between these two effects is what is of most interest. Again, in English language arts, this shows rural males performing at a significantly lower level than any other group.

The class size pattern for both subjects is shown in Figure 6.8. The general pattern is that scores in English language arts increase as class sizes increase. For mathematics, there is some variation with class size but no clear pattern. In particular, students in the smallest classes do about as well as those in the largest classes. Although these results are counter-intuitive, they are quite consistent with those found in SAIP, PISA and other large scale studies. The problem here is that class size is confounded with so many other factors in these studies that it is almost impossible to judge class size effects. It is important to note, however, that even the best designed experimental studies fail to show very large class size effects at grade levels other than primary. What is clear from these and similar results is that class size is not an overriding factor in achievement at the intermediate level, even at the extremes represented here.

Figure 6.8

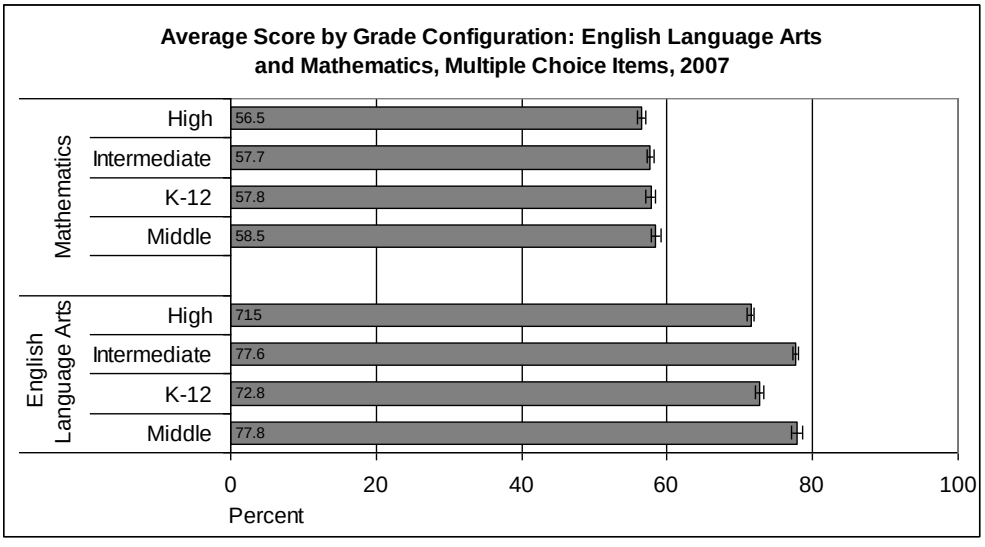


We hasten to point out that we would not take these results as a license to increase class size, but rather as a caution that focusing on class size, in the absence of other changes, is unlikely to have much effect on achievement. Also, these results tell us nothing about other possible benefits of smaller classes, as pointed out in the Teacher Allocation Review. Our sense of the matter is that a strategic approach is needed on class size, with a view to creating smaller classes for specific purposes, such as remediation. We suspect that some of this is already happening in schools but are not convinced that this is being done in any systematic way.

Finally, since grade configurations were a major point of discussion in an earlier chapter, it is worth looking at performance in schools if various grade configurations, again keeping in mind that grade configuration cannot be isolated from other factors such as school size or location. To examine this point, schools were divided into four categories, based on grade configuration. Schools were identified as middle schools if they had grades 5 and/or 6 in addition to grades 7-9. While this is a fine distinction, this is the distinction that is typically made between middle and intermediate schools.

Results for 2007 in English language arts and mathematics are shown in Figure 6.9. These results show little difference in mathematics, but significantly higher averages in English language arts for students in intermediate and middle schools. It is important to note that middle and intermediate schools exist mainly in urban areas, and there is no way to clearly separate the grade configuration results from those for the urban/rural separation.

Figure 6.9



The Consultations

Almost all who spoke to the issue agreed that while progress is being made, improvement is required in the area of student assessment. A number of participants commented that student self-confidence improves when alternative means are provided to demonstrate mastery of skills and content. The consultants were told repeatedly that the predominant assessment tool remains pen and paper tests, despite district policies and guidelines that suggest a variety of strategies to accommodate the full scope of student learning styles.

Many participants agreed that new classroom resources should include innovative assessment strategies such as portfolios, rubrics, and journals, but indicated that these require time unavailable in a crowded curriculum. This, together with the need to cover content area tested by criterion referenced tests (CRT's), results in many teachers reverting to traditional, time efficient, pen and paper testing. Although the use of these techniques was indicated to be a step in the right direction, many commented that, at the end of the day, the biggest challenge for teachers is converting information gathered, to numbers for reporting student achievement.

School districts have policies related to student evaluation at the intermediate level that are student-focused and geared toward assessment for learning. Most policies require a determination of how proficient a student is at the end of the school year, rather than a simple calculation of an accumulation of grades over the course of a school year. The extent to which these policies have been implemented appears to vary from school to school.

A number of teachers and principals spoke to the issue of final and mid-term exams at the intermediate level . Most who commented agreed with restricting the time devoted to these activities and the proportion of the final grade they should constitute. Several principals mentioned that teachers were somewhat concerned that the district evaluation policy that prohibits the assigning of zero for an assignment not submitted on time, failed to teach students personal accountability. Teachers feel that this artificially inflates the student grade and runs counter to the Department of Education D-factor approach to public examinations.

Some discussion arose around the issue of grading practices for reporting student achievement. It was noted that most schools employ a scale of 1-5 for elementary reporting but that this changes to a percentage grade (1-100) at grade 7. Some felt the latter system is inappropriate for intermediate, and wondered what a grade of 67 percent, for example, really means. Others mentioned the practice of using computer generated reports at the intermediate level and questioned the

effectiveness of computer-generated comments.

With respect to the Provincial Criterion Referenced Tests, a number of participants observed that the CRT administered at grade 9, has become a predominant tool to measure the success of a school and, in that regard, has come to resemble senior high public examinations. They commented that this is not the only way success is measured and that many good things happen in a school that cannot be measured. Teachers commented they are afraid to step "outside the box" and try innovative assessment practices because they may not cover all of the objectives assessed by CRT's. They indicated that, similar to many high school teachers, who rely on monthly tests and quizzes and teach to the public exam, intermediate teachers depend mainly on paper testing and teach to the grade 9 CRT. This was reported to be particularly true for mathematics.

There were diverging views with respect to student promotion and retention at the intermediate level. A number of teachers from different focus groups suggested there is a cumulative problem created when students are advanced through the grades. They commented that promotion without the provision of extra supports to optimize opportunities for success is counter-productive.

It was indicated that many underachieving students who are not on ISSP's have low attendance rates and are not inclined to stay behind for extra help, therefore learning gaps continue to grow. This point is supported by the earlier data on the relationship of attendance to achievement.

Comparisons with Other Jurisdictions

As far as we can determine, all provinces now have some form of provincial assessment. The longest standing and most highly developed programs are those in Alberta, British Columbia and Quebec. Ontario is a recent convert to provincial assessment but now has a highly developed system operated by an agency (the Educational Quality and Accountability Office or EQAO), established at arm's length from government.

Most of these assessments take the form of criterion referenced tests for selected levels of schooling, designed to determine the degree to which students are achieving curriculum outcomes. Many of these programs started out with a goal of measuring system-wide performance, with tests administered to samples of students. However, most have now moved to assessing all students at key stages and reporting results at the individual level, with aggregations to schools, districts and the province.

A considerable amount of detail on these assessments is provided in a separate background report, and need not be repeated here. Suffice it to say that the purposes and design of most of these assessments are not very different from what exists in this province. However, there are considerable differences in the extent of reporting and use of the assessment results and in the documentation available. Most jurisdictions now have more substantial reporting processes and appear to make more comprehensive use of the results than is the case locally. We hope that the background report will be of value to the Department of Education in any attempts to be made to improve the documentation available locally. However, as already indicated, we do not feel that the mandate of this study extends to a full evaluation of the provincial testing system, and therefore will make only a general recommendation in that direction.

One point of note is that Ontario and New Brunswick each have introduced what is generally referred to as a "minimum competency test." Such tests are essentially tests of basic literacy/numeracy skills. The key element of such tests is that there is a requirement that students pass the test at some time before graduation. The goal of such tests is to assure the public that high school graduates possess a minimum set of competencies in core areas. These tests are particularly relevant to the intermediate level because they are typically administered as early as grade 8, with failing students being given multiple opportunities to rewrite before graduation.

On the surface, minimum competency tests would appear to fulfill an essential accountability function in certifying the literacy competence of students before they graduate from high school. However, these tests have become quite controversial. The stakes in such tests are so high that various means are found to ensure that virtually all students can pass. These include setting the standard quite low, offering multiple opportunities to write, teaching to the test and the emergence of a tutoring industry to prepare students for the test. In any event, the level of competency tested is typically not higher than would be expected of Grade 7 or 8 students rather than of high school graduates. Our view is that high school graduation outcomes are better assessed provincially using curriculum specific tests of the sort used in provincial public examinations. Indeed, it seems that the jurisdictions most likely to introduce minimum competency tests are those with no history of public examinations. This is true for the United States, where such tests have become common, and for both Ontario and New Brunswick. Our position is that this province should continue to focus its efforts on public examinations and not move to minimum competency testing.

Survey Results

A small number of survey questions are relevant to assessment. Students were asked to estimate their average mark for the past school year. The reported marks were very high, with 57% reporting an average of 80% or more and a further 31% reporting average in the 65-79% range. These were almost exactly consistent with parent reports, which helps confirm the reliability of the reports. While it is difficult to make a case that marks are too high, we note that these marks do not seem consistent with either the CRT results or results for high school courses and certainly not with public exam results. Although these sources are not directly comparable, the concern here is that students may be receiving deceptively high marks, relative to their performance levels, thus giving them no incentive to improve.

Students have high educational aspirations. Almost all, 96% expect to graduate from high school. About half expect to attend university, and another 20% expect to attend a college or trade school. Only 9% indicated that they intent to enter the work force immediately after graduating high school. 22% reported that they do not yet know, a relatively small proportion considering that these students were in grades 7, 8 and 9. Parents have equally high aspirations for their children. Almost exactly the same proportion of parents as of students reported university as the destination after high school. More parents (31%) reported that they expect their children to attend college, and fewer reported “directly to work” or “don’t know.” The latter results perhaps reflect the fact that the students on whom parents were reporting are in grade 10 this year. This is also reflected in student results when broken down by grade, with the number of “don’t know” responses decreasing with grade level.

These results raise some interesting questions about whether the aspirations of students are actually being met. While the university participation rate is high in this province, college participation is relatively low. Unfortunately, it was not possible to pursue this issue further in this study.

Parents were asked if they were aware of the existence of the Criterion Referenced Tests. Almost all (89%) indicated that they were familiar with the tests. However, only about one-third of parents indicated that they knew their child’s scores on the grade 9 CRTs from the previous year. Support for the CRTS is high, at 79% of parents, despite the low level of awareness of the results. However, support falls sharply in response to the question whether the CRT results should be counted towards students’ final marks, with 38% of parents supporting this practice.

Conclusions and Recommendations

What has struck us as most significant about the trends over time in all of the assessments examined is how little things have changed over the past decade or more. Of course, that is not unique to this province, as Canadian and international results show the same trend. A number of reasons may be advanced for these results, including the possibility of saturation effects – that is achievement levels are as high as we can expect. However, differences between jurisdictions and countries remain large enough that most jurisdictions have examples of others that have been able to do better. A second argument is around socioeconomic effects; students from more affluent circumstances typically do better. While socioeconomic status is clearly a significant contributor to achievement, an important goal of schooling is to minimize socioeconomic effects as much as possible. Schools should aim for greater equity as well as higher overall achievement. Other, more technical arguments may be made around the limitations of the testing instruments or the scoring procedures, how seriously students take these kinds of tests and related matters.

In the end, however, it is clear that the achievement of students in this province, though reasonably high by international standards, is not particularly high by Canadian standards. Furthermore, even within our own CRT assessments, not enough students are reaching the locally established expectations, especially in grade 9 mathematics. Low or mediocre achievement in mathematics, perhaps more than in any other area, closes doors to higher educational opportunities. Students leaving grade 9 who are not performing at the expected level are likely to find themselves in lower level high school courses, with significant long term educational consequences. This last point could not be pursued in as much detail as we would have liked in this study because the necessary links between intermediate and high school results are not available.

Other than socioeconomic status, there is no reason to believe that our students should not be able to perform as well as those in other parts of the country. To the extent that socioeconomic status is the cause, there is all the more reason to redouble our efforts and to reduce the impact of this factor. We believe that a focused effort is needed to improve average achievement and to bring about greater equity among students.

The CRTs take considerable effort to develop and administer. They are not universally admired within the system, although our surveys show considerable parent support for their continued use. We sense that the main problem with the CRTs is that they are not used in a sufficiently focused manner, either to report to parents or as a tool for school improvement.

While a full critique of the CRTs was not within the mandate of this study, a number of technical concerns arose during the course of our analysis, including the lack of availability of tables of specifications, codebooks, interpretive bulletins and other documentation that would permit an assessment of their validity and reliability, and facilitate data analysis and reporting. The credibility and usefulness of these tests could be improved considerably with some attention to these matters.

Recommendation 19

That the Department of Education, school districts and schools develop a plan to ensure that CRT results reach the parents of all students who take the tests.

Recommendation 20

That reports to parents of CRT results be simplified, reducing the number of different scores and scales and that reports include sufficient information to ensure that parents can make sense of the results.

Recommendation 21

That the grade 6 CRT results be used, in conjunction with other diagnostic tools, as a means for deciding whether students entering grade 7 should be advised to elect the proposed bridging courses in English language arts and mathematics.

Recommendation 22

That the Department of Education focus its efforts to improve achievement on schools which show a consistent pattern of low performance on the CRTs.

Recommendation 23

That the Department of Education update its document on the evaluation of students in the classroom, focusing on the use of a variety of assessment techniques, frequent and immediate feedback and on how to judge student performance realistically in relation to the achievement of curriculum outcomes.

Recommendation 24

That the Department of Education initiate an external expert review of the CRTs, in comparison with other provincial assessments and in relation to current standards for development and use of large scale assessment instruments.

VIII OTHER ISSUES

This chapter examines three further points that were either raised by the research questions or included in the study framework. First, there is an issue of how schooling is experienced by students, staff and parents. This relates to student behaviour and how this affects other students and the school and classroom environment. Related to this is the issue of parent engagement with the schools and how the system communicates with parents. Finally, though somewhat unrelated, is the question of teacher education and professional development

The Schooling Experience

Because of the age and developmental characteristics of intermediate school students, this level has often been the focal point of concerns over classroom disruption, damage to schools, bullying and other issues of student behaviour. Some of the comments made in the consultations reinforce these concerns. Some points raised include the inability of students, especially boys, at this age to focus on school work, and their questioning of the relevance of school work, the dramatic and emotional nature of their responses, the importance of the peer group and socialization and the emergence of independence from parents and teachers. All of these characteristics are supported by the literature on early adolescence, and reinforce the point made repeatedly that students at this age are a challenge to teach.

More broadly, there are many concerns about student behaviour towards each other. In particular, bullying has recently become a major public issue, with its effects exacerbated by on-line activities, including what has become known as cyber-bullying and the spread of information about incidents of violence and anti-social behaviour through the Internet. The explosive growth of Internet social networking sites over the past few years adds to these concerns. Whether true or not, there is a perception that these problems are more prevalent among intermediate students than at other levels and that they are having an increasing impact on the functioning of schools.

The creation of a safe and caring learning environment is a major thrust in the educational agenda of most provinces in Canada. An analysis of online documents indicates that most educational jurisdictions have developed a comprehensive policy document to set the context for the establishment of a positive learning environment. Provinces have also identified strategies to structure specific initiatives within schools that are intended to address, avert and confront instances of abuse, discrimination, and sexual harassment. These include codes of conduct, preventive measures and disciplinary measures of increasing intensity, depending on seriousness or repeated instances of inappropriate behaviour.

Details of provincial policies are given in the background report and will not be repeated here. However, the situation in the Atlantic Region is worth noting because the provinces, through the Council of Atlantic Ministers of Education and Training (CAMET) have taken a collaborative approach to the issue, based on work originally done in this province.

The CAMET document, *Meeting Behavioural Challenges – Creating Safe and Caring Learning Environments* (2004) includes the following main policy elements:

- philosophical underpinnings, beliefs and the importance of teacher wellness and collegial support that define a framework for school-wide discipline
- a positive school climate premised on the need to belong, a code of conduct, and shaping and reinforcing appropriate behaviours
- a continuum of school-wide and individual interventions
- an examination of the basis of individual behaviours
- appendices that include protocols for crisis response teams, response to the threat of suicide, and time-out guidelines.

In addition to the CAMET initiative, Newfoundland and Labrador has engaged in several initiatives to facilitate a safe and caring learning environment. The guiding principals and code of conduct to shape safe and caring schools initiatives are set out in the document, *Safe and Caring Schools Policy* (2006). This policy docucment provides a framework for the development and implementation of provincial, district and school level initiatives that help ensure a safe and caring environment for learning and teaching. The policy includes the following features:

- guiding principles that underline the importance of a respectful environment; fair and consistently implemented school policies and codes of conduct; an inclusive curriculum; taught social behaviours, beliefs and values; pro-active discipline; and school community involvement.

- a code of conduct to apply to all members of the school community while on school property
- policy statements to foster a safe and caring learning environment through team mandates at the district and school level; and expectations for teachers and school staff, students, and parents/guardians
- policy statements for responding to student behaviour by managing unacceptable behaviours, imposing consequences for unacceptable behaviour, and suspensions where the safety of school members are at risk

A *Safe and Caring Schools Provincial Action Plan* identifies actions for such priorities as policy awareness, provision of resources, professional development, and funding. A deliberate attempt to bring this theme into the classroom learning context is reflected in the availability of lesson plans that specify learning outcomes by grade and by curriculum area for selected aspects of safe and caring environments such as "What is Bullying?", "Be Assertive", "Imagine a School without Bullying".

Our surveys included a number of questions around student behaviour and safe and caring schools. Overall, about 60% of parents indicated that schools are "very safe" and a further 36% said that they are "somewhat safe." A small difference between urban and rural schools was found on this question with more rural than urban parents perceiving their schools to be safe. More specific to the classroom, 37% of parents reported that their child's classes in Grades 7-9 included students with behaviour problems sufficient to interfere with learning. On the other hand, only four percent indicated that they had had contact with the school about the behaviour of their own children. This seems to imply either that many behaviour problems do not come to the attention of parents or that parents generally do not see their own children as the source of the behaviour problems they perceive as occurring.

Students were asked if they feel safe in their school. About 75% responded affirmatively to this question. Again those in rural schools were more likely to feel safe than those in urban schools, though this difference was small. Abut 70% of students indicated that they feel respected in their school. Although these numbers, combined with the reports of parents, indicate that school safety is not a problem for most, even having a small proportion feeling unsafe in their school is a source of concern. This is a situation in which it is insufficient to make a judgment based on majority support for a proposition. The goal of a safe and caring schools agenda must be to ensure that all students feel safe and that safety is not an issue for anyone.

Teachers and principals were asked somewhat different versions of questions on this same issue. Overall 96% of principals and 90% of teachers agreed that their school provides a supportive, safe and caring environment for students. 98% of principals and 93% of teachers also agreed that school staff works actively to eliminate bullying, harassment and verbal abuse. There is thus clearly some difference between staff on the one hand and parent and student views on the other on this issue. There are a number of possible reasons for this disparity. Schools may not be as successful in dealing with these issues as they feel. It is also possible that even the best efforts are not completely paying off. Finally, students and parents may be concerned with issues that are not within the control of the school. Unfortunately, we have no information on whether school safety is improving or becoming worse. This is one of these issues on which public perceptions can be driven by a few high profile incidents, independently of the overall trend.

Only 55% of students indicated that they "like" school. On the other hand, about 80% indicated that their teachers treat them fairly, care about them and challenge them to do their best. 80% or more also rated the quality of teaching to be "excellent "or "good" in English language arts, science, physical education and mathematics. Ratings dropped off gradually in other subjects though more than 60% gave excellent or good ratings to all subjects. Despite these ratings, more than 50% of students also reported that their classes are disrupted by noise and disorder and that 5-10 minutes are lost in most classes because of disruptions.

Teachers and principals also gave a mixed picture of school and classroom conditions. While 89% of teachers and 94% of principals reported that teaching grades 7-9 is very rewarding, only 34% of principals and 47% of teachers agreed that most of their students are motivated to learn. 49% of principals and 79% of teachers reported that student discipline is a challenge in grades 7-9.

Though somewhat mixed, these results give a more positive picture of intermediate schools and classrooms than is sometimes portrayed in the literature, or even in our consultations. The most plausible interpretation of the results seems to be that most students are functioning well but that some are not. The results do not suggest any cause for alarm or point to a need for major changes in how these schools function. At the same time, some students do perceive themselves to be at risk in the school setting.

There is little here that warrants recommendations for major change. Schools must obviously remain vigilant in dealing with the most egregious instances of disruption, harassment and other forms of misbehaviour. Some would argue that stronger measures may be needed to give schools and teachers more power to deal with the most extreme situations, including intimidating and illegal behaviours.

Our own sense is that much more needs to be done to provide better evidence on the incidence of disruptive behaviours of various kinds, from the small-scale disruptions that interfere with effective use of classroom time all the way to severe instances of harassment of students or teachers.

Recommendation 25

That the Department of Education conduct research studies designed to document the incidence of both everyday disruptions which interfere with effective classroom functioning and severe instances of bullying, harassment, or illegal behaviour (including Internet activities) affecting students or school staff.

Parent Engagement and Communication with Parents

Parent engagement in schools is one of the factors contributing to improved performance of students. Almost all provinces now have legislated some form of direct parental influence in the form of school councils or parent advisory committees. In this province, the 1997 Schools Act mandated the formation of school councils and since that time these councils have become quite active at the school level and, through their provincial federation, in presenting a parent perspective at the provincial level.

On a related issue, during the course of the analysis of documents from other jurisdictions, it became apparent that some provinces have made an explicit effort to develop materials specifically for a parent audience. The most obvious example of this is the appearance of a “parent” or similar link on the home page of the Department of Education Web sites in almost all jurisdictions. Locally, this link is found one step past the home page, as part of the K-12 section. The question raised by this was whether there is a need to improve communication with parents and what areas are in need of improvement.

The main reference to parent engagement which arose during the consultations was a concern by some respondents that the three year structure of the grade 7-9 intermediate school does not give enough time for parents to become engaged with the school, at such a critical time in the development of their children. This would suggest that parent engagement would be stronger in a grade 7-12 school, for example, though not in a middle school, with grades 6-8.

In response to this our parent survey included several questions on engagement with the school. Just under half the respondents indicated that they had been in contact with their child's school only once or twice a year when the child was in grades 7-9. We were not able to cross-tabulate this with the school grade configuration because the children were in grade 10 at the time of the parent survey and were no longer in grade 7-9 schools. However, a rural/urban breakdown indicated that urban parents were more likely than rural parents to be in contact once a month or more. Since almost all parents of those attending grade 7-9 schools were urban, this suggests that those parents are a bit more rather than less likely to be engaged with the school. Also, parents of children in grade 7-12 schools or others where the child would have not have changed schools in grade 9 gave a similar pattern of responses to those whose children were in grade 10-12 schools, where the change was more likely to have been from a grade 7-9 school.

Parents were also asked if their contact was mainly about their child's academic work, behaviour or other issues. More than half (55%) reported that the contact was about academic work, while only four percent of contacts were about behaviour. There were no urban/rural differences in these responses.

Finally, 19% of rural and 11% of urban parents reported that they had been members of a school council or other parent body while their child was in grades 7-9. This does suggest a higher level of engagement on the part of rural parents. However, it should be noted that rural schools would typically require a higher level of parent involvement in school councils because of the much smaller total pool of parents from which membership could be drawn.

In general, these results suggest a relatively low level of parent involvement in schools when children are in the intermediate grades, regardless of school type or location. There was a small but significant negative relationship between frequency of contact and reported average marks, indicating that parents of students who are performing less well in school are likely to be in more frequent contact. While not particularly strong evidence, this does indicate that those most in need of contact tend to be those having more contact.

On the documentation question, the "student and parent" link at the Department of Education Web site includes 15 further links to items on curriculum, public examinations and high school certification, safe and caring schools, rubrics for the English language arts CRTs and several other issues. Of particular interest to the intermediate level is a handbook for grade 9 students and parents, which deals with preparation for the high school program. The K-12 home page also contains a wealth of information, accessible to anyone, including all of the detailed curriculum documents, the school profile system, the CRT results, school development and the school report card and many other items. However, most of this information was obviously not designed for parents and would be difficult for anyone without intimate knowledge of the system to penetrate. For example, as commented earlier, the provincial, district and school level CRT results are almost incomprehensible in the form published because of the large number of sub-tests, the small number of items on a sub-test, and the mix of multiple choice and "rubric" items with different ways of presenting the scores in each case. There is also no guide to the meaning and appropriate interpretation of all of these scores.

The latter point illustrates a distinct difference between documents found on the local Web site and those found in some other jurisdictions. Ontario and the Western provinces in particular, have many more documents that are more explicitly intended for parent use. Documents such as Ontario's *A Parent's Guide to EQAO Tests* and Alberta's *Parent Guide to Provincial Achievement Testing* are illustrative of the type. In addition, some jurisdictions prepare brochure style documents related to significant policy or program changes. Details of this documentation are given in the background document, *What Parents Need to Know*. Much of this documentation may be useful as examples of what could be done in this province.

That said, as researchers we spend a considerable amount of time searching provincial web sites for information and the Web has become the essential tool for comparative research. The Department of Education Web site for this province is, in fact, among the more comprehensive ones available and is not particularly difficult for someone with reasonable Web skills to penetrate. The main difficulty is that not many documents have been designed explicitly for parents and we suspect that most parents would have some difficulty in finding what they need. We also do not know the extent to which parents are inclined to use the provincial Web sites as a main source of information. For important policy or program changes, small, brochure-like documents that can be placed directly in the hands of parents (and the media), as well as on provincial, would be desirable.

Our sense is that the documentation on safe and caring schools is the closest available to the kind of material that we think would be most useful. Even here, however, the provincial policy takes 16 pages to convey. A progression from the simplest overview (a page or two or a brochure) to documentation at increased levels of detail is a natural one in structuring a Web site and needs to be used more consistently in documentation intended for a general audience.

Recommendation 26
That the Department of Education initiate a review of the student and parent section of its Web site with a view to presenting material on curriculum, assessment and other important initiatives in a compact and simple form explicitly intended for a parent audience. The simple documents should include links to more detailed documents.

Recommendation 27

That the Department of Education coordinate efforts to ensure that information no important policy and program changes is available through links on the Web pages of districts and schools.

Recommendation 28

That, for major policy or program changes, hard copies of simple documents such as brochures be prepared and widely disseminated to schools, households and the media.

Initial Teacher Education

The area of initial teacher education presented something of a dilemma for the research team. First, three members of the team are experienced teacher educators who have been involved for many years in the evolution of pre-service teacher education program at Memorial University. While this gives us some "insider" knowledge of the details of pre-service teacher education, we can hardly claim to be free of bias in this area. Second, although teacher education has been a topic of considerable controversy, there is little research on what constitutes high quality teacher education and wide variations exist in the structure, duration and

content of teacher education programs.[7] Finally, we did not gather much data on this issue. There seems to be little point in engaging in lengthy discourse on the more controversial aspects of teacher education when there is little to offer in the way of practical proposals for change.

Initial preparation for intermediate teachers is part of the intermediate/secondary program at Memorial University's Faculty of Education. This is a three-semester program, comprising 51 credit hours, which allows students to qualify for a teaching certificate within one year. Though labeled intermediate/secondary, concerns have been expressed that the intermediate level can become lost and that students see themselves mainly as potential senior high school teachers. While we do not know if this is true, our surveys do not give an impression that intermediate teachers would prefer to work at other levels, and certainly not exclusively so.

The literature on teacher education for middle schools has been reviewed and is included in the literature review background report. Much of this research seems to address the question of how to train teachers so that they will subscribe to a middle school philosophy and programming principles, not all of which are supported in this report. We can certainly see a place for the study of early adolescence and for inclusion of material on the middle school philosophy. However, we do not support an integrative approach to curriculum to the extent that is characteristic of middle school proponents. While it seems clear from some of the research that a middle schools identity can be created through teacher education, this seems to be a rather uncritical approach, which seems to call for a program specialized in this area. We are not convinced that it is either desirable or feasible to do this.

Interview and focus group respondents had many critical comments on the state of pre-service teacher education. A significant number of participants were of the view that the program at Memorial does not prepare teachers for the realities of rural schools, even though many new graduates end up in such schools. New teachers sometimes find themselves teaching many different courses, some of which lie outside their specialty, to diverse learners in multi-grade environments. It was suggested that intermediate teachers need subject expertise in at least a couple of curriculum areas.

[7] A national study of initial teacher education is now under way, which we hope will shed some light on some of the issues in this area. Two of the members of the research team are the researchers on that study. A separate report for this province is in preparation, based on a supplementary provincial sample for the surveys.

Almost all teachers, school administrators, and district administrators who spoke to the issue agreed that teachers trained in elementary methods are better prepared to teach at the intermediate level. However, district hiring practices give preference to graduates of the high school program. Consequently, most intermediate teachers in the province are graduates from the high school stream.

The most commonly expressed concern was a perceived lack of differentiation of those who plan to teach at intermediate versus senior high. Many felt that the high school program is largely focused on senior high methodologies and that intermediate teachers "try to be like senior high teachers." We were told repeatedly that Memorial's program must prepare teachers for the intermediate level, particularly as it pertains to diversifying instruction and that there needs to be more focus on the adolescent. There was a particular concern that the methods courses are concerned only with the senior high school program.

More generally, some suggested that the high school teacher education program needs to place more emphasis on diverse learners, inclusive practices, and reading and writing remediation. There is also a perception that little work done in cooperative learning or individualized instruction as is the case in the primary/ elementary program.

A number of participants argued that the teacher education program should be more focused on teaching practice and less on educational theory. One participant who has taught education courses at the university indicated that by the time students get through the theory in fast track (six week duration) courses, only one week or so remains for discussion around application. Many participants felt that important issues such as classroom management, teaching strategies, and assessment strategies do not receive enough attention. They also felt that classroom materials (e.g. text books, teacher guides, curriculum guides) and policy documents are not discussed and analyzed enough in the present program.

Some participants went as far as to suggest that perhaps it is time to consider establishing a provincial teachers college. Somewhat in keeping with this, the view was expressed that university should second master teachers from the field to do teaching blocks. Reference was also made to a teacher training program in England which focuses on "teaching teachers how to teach." It was felt that a teachers college would provide a greater connection between classroom realities and teacher preparation. Other participants thought that a teachers college was not necessary and that Memorial's degree program could be re-designed to accommodate necessary changes.

Participants in a number of sessions expressed concern that the one-year, after-degree, high school program does not permit students early exposure to classrooms and as a consequence less of their education program is informed by practice. It was generally felt that teachers need to see what they can expect in the classroom long before their fifth year of university study. A number of participants also expressed the concern that some internship supervisors have not taught in a K-12 classroom for many years.

A small number of questions on pre-service teacher education were included in our surveys. In response to a question about preference for subject specialization in initial teacher education, close to two-thirds of teachers indicated that they preferred to have strong concentration in a subject but be able to teach most subjects. Almost all of the remainder preferred subject specialization with only four percent indicating that they prefer to be prepared as generalists. This is consistent with teacher views of how they prefer to be seen in their teaching assignments. Principal responses to this question were almost identical to those of teachers.

When asked about an integrated (concurrent) versus the existing consecutive program, two-thirds of teachers indicated that they prefer the latter. However, principals had a different view, with 59% supporting a return to a concurrent program. On a somewhat related question, 59% of teachers supported retaining the current combined intermediate/secondary program rather than introducing a distinct program for intermediate teachers. Principals were asked two slightly different versions of the same question. 76% of principals supported the idea of a program with an intermediate level specialization while 66% agreed that intermediate should be a separate program. The views of principals are clearly in accord with those expressed in the consultations, while the views of teachers are somewhat different.

The divisions of opinion on these matters seem to be indicative of the broader unease with initial teacher education expressed in the consultations. There is little here on which we can base a firm recommendation about program structure. However, it is clear that some of the concerns with initial teacher education are deeply held and should be a source of concern within the Faculty of Education. We understand that possible revisions to the intermediate/secondary program are under discussion within the Faculty of Education and that an option of extending the program to four semesters with 60 credit hours is part of that discussion. We would support such a move, and would suggest that program extension should give some room to introduce additional components that are more specific to the intermediate level.

Recommendation 29

That the Department of Education engage in discussions with the Faculty of Education at Memorial University with a view to ensuring that components be added to the intermediate/secondary teacher education program which would explicitly address the concerns about intermediate teacher education expressed in this study.

Teacher Professional Development

Unlike initial teacher education, there is no single agency responsible for teacher professional development. Many agencies, including the Department of Education, school districts, individual schools and the Newfoundland and Labrador Teachers Association all have some involvement. A virtual teacher centre (VTC) also exists which provides, through its Web site, information and learning activities for teachers. Interestingly, some of the teaching and learning modules available at the VTC site are on issues which have been addressed in this report. Examples are "direct instruction and indirect instruction," "interactive teaching and experiential learning," and "constructivism." We have not examined any of this material in detail and are not able to comment on its quality or usefulness to teachers.

Again, a good deal of commentary on professional development occurred during the interview and focus group sessions. We heard from many teachers and school principals that professional development is haphazard and generally offered as one-day events with little, if any, follow-up. This approach is widely recognized in the empirical literature as a waste of time and resources. Anglophone districts have adopted an annual two-day district shutdown early in the school year, during which up to 60 concurrent sessions are conducted. It appears that for some teachers, this may constitute their entire PD involvement for the year. According to one teacher, these shutdowns offer a potpourri of sessions, but teachers assigned courses new to them must attend related in-service sessions. In reality these teachers are not afforded any choice.

A number of participants commented that much in-service training over the past few years has been related to the introduction of new programs by the Department of Education. While it was acknowledged that the Department has committed significant financial resources to sponsor these sessions, many lamented the fact that follow-up for those attending the original in-service, and a re-offering for future teachers is lacking.

A wide range of needs was identified with respect to professional development for the intermediate teacher. Many pointed to a strong need around differentiated instruction, multiple intelligences, classroom management, co-operative learning, resource-based learning, assessment and evaluation, and technology integration. A smaller number mentioned in-service regarding strategies for effectively engaging parents. There was an overwhelming consensus that intermediate teachers need to become more acquainted with the nature of the adolescent learner and related brain research.

A number of references were made to an increasing amount of out-of-field teaching occurring at the intermediate level. Due, in part, to teacher redundancies created by declining enrolments many teachers end up teaching at the intermediate level for the first time or are assigned new courses at intermediate. Participants noted that the need for in-service around the nature of the adolescent learner and teaching strategies related to newly assigned content is critical in these instances.

Teachers in the focus groups mentioned several effective PD practices of which they would like to see more. Quite a few remarked that some of the best PD involves teachers meeting to reflect on their experience, and sharing resources and strategies. According to these participants, this formerly common practice has all but disappeared from the scene. Many commented that much practitioner knowledge lies untapped and recommended that districts identify exemplary teachers to act as mentors to junior teachers.

A number of participants commented on the delivery style used in most professional development sessions. A couple of teachers observed that most in-service presenters “talk-the-talk,” but fail to “walk-the-walk.” Most PD provides little opportunity for group interaction and hands on training. It was pointed out that the presenter’s approach to workshop delivery has more of an impact on participants than the content and that PD sessions should model how teachers are to conduct themselves in the classroom.

Several interviewees and focus group participants observed that a significant impediment to the implementation of new curriculum is the lack of professional development opportunities for teachers. They suggested that the Department of Education support new initiatives by additional professional development days rather than requiring that the days be taken from an already limited supply in the regular professional development allocation.

District office personnel were emphatic that the reduction in professional staff at the district level has created a major challenge related to the provision of

meaningful teacher professional development. It was pointed out that there are fewer people in district offices overall, and that some lack deep insights in curriculum disciplines.

A number of participants put forward the idea of linking teacher certification to professional development. One participant commented that the certification model is a millstone around our necks, in that it provides no incentive for PD upgrading outside of university credit. It was noted that there has to be some incentive for teachers to become involved in PD institutes during the summer months. Institutes are another PD mechanism that have, for the most part, been discontinued. A district director commented that linking certification to PD is an excellent idea but suggested that it is a challenge to quantify PD and the extent to which a particular PD experience should be credited for pay increment.

The province's virtual teacher centre (VTC) was suggested as a vehicle to deliver PD opportunities. The VTC is currently shifting focus to become more of an instructional support to schools and teachers. The director of the VTC and CDLI indicated that CDLI's interactive synchronous and asynchronous capabilities should be capitalized upon to deliver targeted professional development training programs to intermediate teachers. Many schools are now sufficiently equipped with computers and teleconference equipment, and advances in bandwidth to communities continues to be upgraded.

The most general conclusion that seems to emerge from these comments is that there is a lack of sufficient professional development and that the quality of some of what is available leaves much to be desired. The question is how can more time be found for professional development and how can its quality be improved. While we support the calls for making more time available, we are of the firm view that additional professional development time cannot and should not be made available within the school year. Our view is that the current model for professional development delivery is fundamentally flawed and that the state of professional development cannot be improved within a model under which this work must be done at the expense of student time in class or even by providing additional substitute teacher days.

Once we go beyond the regular school year, the conduct of professional development moves to a new level. Under the current collective agreement, teachers cannot be required to attend PD sessions outside of the school year. Nevertheless, it is clear that many would do so if proper incentives were available as is evidenced by the success of summer sessions where travel expenses and stipends were paid to teachers attending sessions in support of new curriculum initiatives from the Department of Education. However, even this model is not

likely to be successful on a large scale and in relation to the wide variety of needs in the system, not all of which are related to Department of Education initiatives.

If the literature offers any guidance it is that sustained effort is needed, extending beyond any initial formal sessions. An extensive review by Glickman, Gordon and Ross-Gordon (2007) concluded that the common "one-shot deals" are ineffective as there is "no integration with a comprehensive plan to achieve school goals" (p. 353). From that review, the authors identified the following characteristics of successful professional development programs:

- Involvement of participants in planning, implementing, and evaluating programs
- Programs that are based on school wide goals, but integrate individual and group goals with schools
- Long-range planning and development
- Programs that incorporate research and best practice school improvement and instructional improvement
- Administrative support, including provision of time and other resources as well as involvement in program planning and delivery
- Adherence to the principles of adult learning
- Attention to the research on change, including the need to address individual concerns through the change process
- Follow-up and support for transfer of learning to the school or classroom
- Ongoing assessment and feedback
- Continuous professional development that becomes part of the school culture. (pp. 353-354)

Following from the Report of Ministerial Panel on Educational Delivery in the Classroom (Williams & Sparks, 2000), the Department of Education formed a Professional Development (PD) Alliance in the province. This PD Alliance was composed of representatives of the Department of Education, Newfoundland and Labrador Teachers' Association, school districts, and the Faculty of Education. Analysis of the model of professional development recommended by the PD Alliance reveals that it is founded upon similar principles to those noted above by Glickman et al. (2007). However, the PD Alliance has not been active for the past three years and general observation suggests that the professional development approach recommended has not been widely implemented. As a means of better understanding current professional development practices in Newfoundland and Labrador, the Virtual Teacher Centre, the Newfoundland and Labrador Teachers' Association, school districts, and the Faculty of Education, Memorial University have partnered with the Canadian Council on Learning to conduct research to determine the extent to which the Professional Development Alliance Model has

been implemented, and to document and share exemplary professional development practices through the creation of a Knowledge Exchange Network. It is expected that preliminary results of this research will be published at a Provincial Symposium during spring 2008 and it is hoped that the results of this will inform planning and decision making related to future teacher professional development in the Province.

What has obviously been very successful in attracting teachers, not only to summer sessions, but also to high intensity work during the school year, are programs leading to additional degrees and hence to advancement on the certification/salary scale. This is clearly driven by the structure of the teacher certification/salary scale. Our sense is that something similar needs to be done with professional development if we are to break the pattern of limited capacity and continual pressure for additional time in the school year.

In the wake of the Royal Commission Report of 1992, government prepared a consultation paper on teacher certification and professional development (Government of Newfoundland and Labrador, 1995), which put forward a radical change to the certification/salary scale. The work was the product of a joint committee made up of representatives of the major stakeholder groups. A major component of that proposal was that professional development activities be significantly expanded and that certification credit be granted for this kind of work. In light of the turmoil of the time, with large scale restructuring of the education system and significant budget pressures, it is perhaps not surprising that this proposal was not implemented.[8]

There is precedent in Canada for something similar to the professional development proposals in that discussion paper. In particular, Ontario has an elaborated system of "additional qualification (AQ)" courses, which allow teachers to advance on the salary scale through their professional development work (http://www.oct.ca/become_a_teacher/certificates.aspx?lang=en-CA). In Ontario, this reduces the reliance on university degree programs as the "career ladder" for teachers and allows much greater flexibility and relevance in what can be used for career progress. Additional qualifications are listed on the teacher's certificate the year after completion.

[8] It is interesting to note that some of our interview and focus group respondents expressed the view that the focus on restructuring during the 1990s, and extending into this decade, was a distraction from the ability to make more fundamental program changes. With the restructuring now behind us, there is now good evidence that government is now giving greater attention to program issues

While we would not argue that all of the details of the 1995 consultation paper would survive scrutiny in today's environment, we are of the firm view that opening up the certification scale to allow credit for appropriate professional development activities is the only way around the limitations of the current system. Recognizing that this has implications that go well beyond the mandate of this review, we nevertheless, feel that the time has come to break the impasse over expansion of professional development. Accordingly, we recommend

Recommendation 30

That the Department of Education establish a working group, which would include the NLTA and other stakeholders, with a view to opening the certification scale to credit for approved professional activities

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