

**STUDIES IN NEWFOUNDLAND
EDUCATION AND SOCIETY**

VOLUME I

Edited by

Ishmael J. Baksh

George Haché

Amarjit Singh

Memorial University of Newfoundland

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**Faculty of Education
Memorial University of Newfoundland
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PREFACE

This anthology, the fourth in a series, brings together articles which have been published in **The Morning Watch** over the eight-year period, 1991-1999 (i.e., Vol. 19, Nos. 1-2 to Vol. 26, Nos. 3-4). The first anthology appeared in 1977 under the title **Society, Culture and Schooling: Issues and Analysis**. The second was published in 1982 in two volumes, with the title **Society and Education in Newfoundland**. The third was published in 1991, also in two volumes, with the title of **Dimensions of Newfoundland Society and Education** (ISBN 0-88901-159-1). All three anthologies were edited by Dr. Ishmael J. Baksh and Dr. Amarjit Singh.

We have written about the origin, history, purpose and orientation of **The Morning Watch**, which may be of some interest to readers, in the prefaces to the previous volumes. Some of the information is now also available on the web-page of **The Morning Watch**. Having **The Morning Watch** on line (World Wide Web) is an indication of an important shift in the context in which the Faculty of Education now functions. Just to keep the story about the evaluation of **The Morning Watch** going, it is perhaps worth noting that in the Fall of 1996, the financial limitations faced by the Faculty of Education made it necessary for **The Morning Watch** to be published electronically. Dr. Marc Glassman assisted us in initiating the first on-line version - the Fall 1997 issue. More recently, Dr. George Haché has taken over the task of further developing the site in the capacity of Technical Editor. Dr. Ishmael Baksh and Dr. Amarjit Singh remain the co-editors. The publication of the Fall 1997 issue marked the twenty-fifth year of the journal.

Seven recent issues of **The Morning Watch** appear on the web-site <<http://www.mun.ca/educ/faculty/mwatch/nmwatch.htm>>. **The Morning Watch** can also be accessed through the homepage of Memorial University <<http://www.mun.ca/educ/>> by browsing the On-line Publications icon.

The publication of **The Morning Watch** has been possible only because of the financial support provided by a succession of Deans in the Faculty of Education, among them Dr. George Hickman, Dr. George Ivany, Professor Brose Paddock, Dr. Leslie Karagianis, Dr. Robert Crocker and Dr. Alice Collins. Most recently, Dr. Terry Piper and Dr. Clar Doyle (Dean Pro tem) have lent their support, despite the budgetary constraints faced by the Faculty. Also invaluable is the assistance rendered the publication over the years by Bill Griffin, who specialized in design, and by staff in the General Office of the Faculty of Education and in the Printing Services unit of the university, especially by Glenn Taylor. Dr. William J. Gushue's initial assistance, participation and encouragement in launching **The Morning Watch** can never be forgotten by the co-editors. Other individuals who have contributed to the present online version are identified on the on-line **Morning Watch** historic page. Miss Laura Walsh in the General Office has contributed towards the preparation of the manuscript of these four volumes in a very special way. Her commitment, hard work and critical comments are very much appreciated by the co-editors and the Technical Editor. Finally, we wish to thank all the authors who have contributed to **The Morning Watch** since its inception in 1973, particularly those who have written for it more recently. We sincerely hope that others will decide to contribute to **The Morning Watch** as Newfoundland and Labrador society and culture encounter globalization and internationalization as well as concomitant social, cultural, economic, political, and technology and information related changes. The papers in these four volumes testify to the fact that the authors have already begun to articulate many issues emerging in the field of education and schooling in this

province in the context of globalization and internationalization of all aspects of our lives. A full version of the content of this anthology will also be placed in the online site of **The Morning Watch**.

For convenience, we have referenced each article by placing its date of publication under its title.

If there is any merit in publishing this four volume anthology, the credit is due to all those people who have been involved with **The Morning Watch**, including readers consisting of graduate and undergraduate students, colleagues and the larger public. However, the editors and the Technical Editor bear sole responsibility for any shortcoming which this anthology might have.

Amarjit Singh
Ishmael Baksh
George Haché

St. John's
April, 2000

FOREWORD

The Faculty of Education at Memorial University publishes the **Morning Watch**. This publication serves as a vital and essential communication tool for the examination of educational and social issues in the Province of Newfoundland and Labrador. The **Morning Watch** not only comments on current issues but often leads the way in reporting significant research findings and trends. The **Morning Watch** offers articles on wide-ranging topics and agendas. Such writings represent diverse thinking and viewpoints. In this way the journal encourages initiative and debate, which is crucial for any educational community. We encourage you to contribute to this discussion.

Clar Doyle, Professor
Dean (pro tem)
January, 2000

For many years **The Morning Watch** has served as an effective two-way communication link among educational stakeholders in Newfoundland and Labrador. Opportunity has been provided through this publication for the Faculty of Education and its field partners to share research findings, field experiences and “cutting edge” theory. This journal has also served as a pedagogical conduit for both undergraduate and graduate expression; it has functioned as a forum that allows undergraduate students/society to debate issues of the day, while simultaneously providing graduate students with what is often their first experience at publishing research undertakings in public.

The focus of **The Morning Watch** has been sufficiently broad to present an educational and social analysis of a wide array of educational issues. Written and organized to provoke creative thought, challenge traditional modes of operation and provide critical/reflective consideration of the change process, journal articles over the years have served to guide and inspire educational reality in this Province.

This current compendium represents a very special effort to bring together four volumes of **The Morning Watch** comprising some 120 thought-provoking articles spanning the decade of the nineties. To both the editors and authors, thank you for providing your readership with a further opportunity to savour the assimilation of a decade of first rate educational journalism with a Newfoundland and Labrador focus. It is my hope that all of us, as partners in education, will seize this moment to reacquaint ourselves with a journal which has truly served as a beacon for educational initiative over many years.

Dennis Treslan, Professor
Associate Dean, Undergraduate
Programmes
January 26, 2000

As the sole university in Newfoundland and Labrador, Memorial assumes a special obligation to educate the citizens of this province, to conduct research related to the challenges of this province, and to share its expertise throughout the provincial community. Within this context, the Faculty of Education recognizes its mission as related to both the professional preparation of those who will give leadership in education and research related to the improvement of educational practices. Since its inception, the **Morning Watch** has served as a key component of both the University's and the Faculty's provincial mission. It has served as a forum for presenting Faculty research and innovative ideas to the local educational community, thereby creating a critical communication link among practitioners and faculty and student researchers. As well, it has served as a friendly venue for an initial airing of ideas and research findings conducted by graduate students who would otherwise have been reluctant to publish their first scholarly work. As a result, much of the graduate student research that focussed on local educational issues was disseminated throughout the province.

On a review of the contents of this volume, it becomes obvious that the scholarly concerns addressed throughout the period from 1991 to 1999 have been varied. It should be noted as well that, during this period, the **Morning Watch** has evolved as a consequence of advances in information and communication technologies. In 1996, the **Morning Watch** became an on-line journal. It is now not only available within the province but is internationally accessible. As it continues to serve its original mandate of contributing to local knowledge by sharing research findings, articulating differing philosophical viewpoints, and raising issues for debate and discussion throughout the educational community within Newfoundland and Labrador, it is my hope that, in its new on-line format, it will continue to evolve as a scholarly journal that will become more fully recognized internationally.

In conclusion, as an educator who has worked in this province since the appearance of the **Morning Watch**, I would like to extend my personal appreciation to all those who have contributed to articles and I would especially thank and congratulate those faculty members who have served as members of its editorial board.

Bruce Sheppard, Associate Professor
Associate Dean, Graduate
Programmes and Research
January, 2000

IMPLEMENTING CHANGE AND RESTRUCTURING SCHOOLS

HOW PRINCIPALS CAN COPE WITH CHANGE IN THE NINETIES

Don Downer
Sir Wilfred Grenfell College
Fall 1991

Introduction

Change does not deal with direction and it only implies movement; it is a neutral term. There is no indication of the nature of change. Planned change is the process of improvement; described in this way it implies at least a preferred direction if not a valued outcome (Leithwood, 1986, p. 2).

Change may also be confused with progress. Resisting change in some instances may be more progressive than adopting it (Fullan, 1982). A few years ago a new junior high mathematics program was brought into Newfoundland schools by the Department of Education to replace the existing mathematics program. The old program was no longer considered suitable because it did not contain much in the way of problem solving and an applications emphasis was believed to be the way around the problem of students not doing well in mathematics. The assumption was that there would be a concurrent decrease in time spent on computations as more instructional time was spent by students in solving problems and that mathematical thinking **skills** would be enhanced. In my view the program did not work. A minimum amount of inservice took place in districts to implement the new program (in some cases limited to one day or to none at all) and there was a corresponding decrease in overall instructional time available to teach mathematics. Teachers were also not convinced that decreasing emphasis on computational skills would solve the problem. They consequently did not abandon the methodology used in the old program. Cooperation of the materials of the new program (Berman and McLoughlan, 1976) to serve what was essentially the old course of instruction often occurred and nothing changed in the classroom.

Principals and vice-principals have not generally been involved in most of the curriculum implementation efforts in this province; instead, they have left this to board office program coordinators and to provincial curriculum consultants. Principals have been active to a greater degree in the current school improvement efforts but in many cases they will readily admit they feel a lack of knowledge and expertise to bring about change in the most effective way possible. Since the power to mobilize and confidence about the expertise to effect change are frequently absent in Principals, they are at a distinct disadvantage. There is a need for practical ideas for principals as to how they can reap the maximum benefits for their students from any innovation introduced in the district or at their school; there is also a need to provide principals with the tools and the power to discriminate between change which will be good and change which will be bad for their school and for their students.

Adoption, Implementation and Institutionalization

To understand more fully what is involved in the change process we consider as an example the logic of curriculum implementation: adoption -> implementation -> institutionalization (Fullan, 1985). To illustrate this, it is useful to look at the 'open space' concept for school configuration of the 1960's. Many schools in North America, including Newfoundland, adopted this concept, i.e., they agreed to formally 'go with it'; but implementation was characterised by 'turn's' teaching not team teaching (Goodlad and Klein, 1970). Large open spaces were very quickly carved up by use of bookshelves and room dividers; open space teaching rapidly became conventional space teaching. The concept was not implemented. Several schools which were built in Newfoundland using the open space concept have long since converted to more traditional space arrangements for instruction. The open space concept failed to be implemented. It is because of catchy fads such as this (or, depending upon your viewpoint, legitimate but poorly implemented innovations) that legitimate and needed change has found poor soil in the province and has often failed.

Even after successful implementation has taken place, i.e., when we can see some changes in the way things get done in the school, it is necessary to go beyond to institutionalization. This means that the innovation gets incorporated into the fabric of the district; the board office recognizes it and the innovation is sustained over time. Institutionalization really means that change gets built into the life of the schools (Huberman and Crandell, 1983); it is the process of making change routine. It requires time and there must be components of school and district budgets relative to the change which will sustain it. There must be financial support and resources forthcoming from the board office and/or the Department of Education to ensure that institutionalization occurs. It is most frustrating that it often takes so long for institutionalization to occur that the innovation has become obsolete before this happens.

Computers are now being brought into Newfoundland schools in a big way. Computers in the schools have not received much support from either board offices or the Department of Education until quite recently. Computerization of classrooms must continue to be a viable and valued part of the curriculum year after year and it must be recognized as an important and valued component of instruction in the district if it is to become institutionalized; if not, it will not last.

Types of Change

Practically any innovation may be considered a change. Included might be: a new curriculum; a new text; a new course guide; a new method of instruction; a new set of guidelines; a new principal; introduction of a new library; or, a district or school staff development effort. For our purposes change in schools in Newfoundland means two fundamental things: curriculum implementation and school improvement.

Curriculum implementation rather than development applies in the school districts in Newfoundland because the Department of Education in most cases assumes responsibility for the latter. The model for implementation of new curricula has been the same for almost two decades. Provincial curriculum consultants (often with help from working group members who have been involved in development) do a one or two-day introduction and over-view of the new program with district program coordinators. Teacher representatives have sometimes attended these sessions. The program coordinators are then charged with the mandate to return to their respective districts to

deliver the new program often also by means of one- or two-day inservice sessions. Our current knowledge about change and implementation would indicate that oneshot efforts such as these, without any other form of inservice or followup, do not work. It is a rare occurrence in which full implementation of any program has occurred by this means. It can be said with some degree of certainty in Newfoundland that "the days of the oneshot workshop at the local level are numbered" (Fullan, Anderson and Newton, 1986, p. 321).

School improvement efforts in Newfoundland and elsewhere have grown out of the school effectiveness movement. During the past ten to fifteen years there has been a great rush to utilize the findings from research about effective schools in school improvement projects. Newfoundland has been no exception: the Department of Education has had an ongoing school improvement effort for the past three years. School improvement programs began in the United States around 1978. Edmonds (1979 and 1982) has been one of the earliest proponents and activists in the school improvement effort as well as one of the earliest people in the school effectiveness movement. Four of the best known representative school improvement programs in the United States include: (1) The New York City School Improvement Project (SIP) (Edmonds, 1982); (2) The Connecticut School Effectiveness Program (Pechcone and Shoemaker, 1986); (3) The Effective Schools Project (ESP) (Purkey, 1984); and (4) Milwaukee's Project Rise (Rising to Individual Excellence) (McCormack-Larkin and Kritek, 1982; McCormack-Larkin, 1985). A variety of school improvement programs have also been ongoing in Canada during the past decade. Ontario, Alberta and British Columbia have led the way; boards, mostly in the larger cities such as Toronto, Ottawa and Calgary, have been involved with school improvement programs since 1984. Other provinces, such as Saskatchewan and Manitoba, began school improvement efforts in the latter half of the 1980's. School boards have also become involved here in Newfoundland; the St. John's Roman Catholic School Board's Project 2000 had begun before the Department of Education's school improvement program, Challenge for Excellence.

Curriculum implementation is seen as only one aspect of a school improvement effort but a crucial one; a knowledge about change and changing is critical to both. To be effective, principals, since they are key agents in their schools, must know about these and must develop skills to bring them about.

Principals and Change

Sergiovanni (1987) states clearly that principals would do well to engage in conscious and continual reflection on their practice. Continuous critical reflection or reflection-in-action by professionals in all areas including education was first presented by Schon (1983). Cubberly said in 1929 that there is a technique of organization, administration, and supervision based on a definite body of concrete experience and scientific information; since then, things have changed greatly. Value conflict and uniqueness are now accepted aspects of educational settings; these are perceived as central to the world of practice for all major professions today. Sergiovanni considered that a more accurate view, and a direct contrast to the view presented by Cubberly of the principalship, might be to consider what principals do as a process of "managing messes". In reflective practice, knowledge is created in use as professionals explore and experiment relying less on standard treatments and more on informed intuition to create tailored treatments. Schon (1983) believes that the reflective practitioner should be Credentialed and technically competent, his claim to authority is substantially based

on his ability to manifest his special knowledge in interactions with his clients. He does not ask the client to have blind faith in a "black box" but to remain open to the evidence of the practitioner's competence as it emerges. (p. 296)

The principal, therefore, must be competently trained and capable of leadership within the school; but, having acquired this expertise, the principal must also be capable of accepting and utilizing criticisms. S/he must permit dissent and indeed must encourage it so that a healthy atmosphere develops where teachers and students are not afraid to speak up and make constructive criticisms. For principals who have been trained using a technical-relational model and who have worked in a top-down situation for all of their professional lives, this adjustment is somewhat difficult to make. To be successful at this kind of personal/professional development and change, a principal needs intestinal fortitude, a willingness to change and some help from those who understand the process.

It is important also for principals to distinguish between management and leadership as it relates to change. Management involves marshalling resources, planning and implementing structures and providing actions and arrangements. Leadership, on the other hand, involves asking questions such as what goals are worth pursuing? And, what levels of motivation and commitment are needed? Leadership deals with how we can provide the necessary purposing and inspiration.

Sergiovanni (1987) presents a model for change, called the interacting units view of change, which includes four considerations: the individual, the school, the work flow and the political system. Principals should consider all four in coping with change in their schools. Each of these four considerations of Sergiovanni will now be used, but the view of each will be broadened considerably to include other aspects of change from recent research.

The Individual

Work at the University of Texas (Hall and Loucks, 1978) has shown that everyone involved with change will experience at least initial anxiety. The most conscientious will often have some real concern, perhaps throughout.

Teachers need time and opportunities to work out personal beliefs; they must also be given opportunities in non-threatening environments with peers and leaders to voice concerns about needs. Ownership can only come if teachers have some say in and control over the change process and the product.

Teachers must be given tangible reason to believe they will not be hurt either professionally or personally and they must be assured they will not be hurt by engaging in the change effort and failing. There must not be the sense that individuals are mere pawns in accomplishing the objectives of change. The principal's vision of the process and product of change is important but it must be transferred to and endorsed by the teachers. All players involved in the change effort must realize that teachers are busy, over-loaded people; there is a limit to what they can take.

The School

Goodlad (1984), following a massive study of schools in the United States, said that the central message of his report was that improvement is essentially a school-by-school process. Principals must realize that reform efforts will be most successful if they are planned and carried out by practitioners, classroom teachers, who work every day with the real challenges of real children in real schools.

Most decisions affecting the change should be made at the school level. Inservice sessions dealing with the change effort should focus on the perceived needs of teachers; teachers should be involved in the planning and execution of such inservice. Change objectives should be perceived at the school level to be realistic and attainable. Communication within the school must always remain open to ensure that everyone understands the objectives and the status of the change effort at any given time. Effective principals appear to spend time as they intend in their schools, i.e., in dealing with certain critical areas related to the change effort, perhaps to the neglect of other less important areas.

Periodic review at the school level is essential for full implementation to occur. If and when the change effort becomes institutionalized, it may then be time to make decisions as to continuation or not of the innovation. Certain significant others external to the school should be present on a regular basis. Full implementation is difficult to achieve without sustained external input and support. One or two major change efforts being implemented simultaneously is all that any school can take.

The Workflow

By concentrating only on the individual and the school, one can get adoption but not implementation, i.e., there may be 'up-front' commitment but no expansion into the everyday work flow of the school. There should be tangible evidence of implementation in classrooms and around the school. There should be daily formal and informal dialogue. Teachers should be observed in the corridors and in the staff room talking about the change. Formal meetings within the school should periodically focus on the change effort.

Principals should not only keep the pressure on for change to occur but there should also be support for the change (Fullan, 1987) - one cannot exist without the other. Teachers need real and practical help and suggestions as to how to incorporate the change into what they are presently doing. If this cannot be provided, it is unlikely that change will occur and it is doubtful if the effort should begin at all. Something should officially come 'off the books' to accommodate change and to permit it to become part of the workflow of the school. The perception otherwise is that the innovation being proposed is just another addition to an already overcrowded agenda.

The Political System

Institutionalization takes place when change is no longer considered to be an innovation. The principal is the key to adoption and implementation of a change effort but s/he has little power in institutionalization. Institutionalization cannot be accomplished without the actual and perceived support and commitment of the superintendent and board office personnel. Meetings must, therefore, take place between the school and board office to accomplish this; there must be a recognized forum. Meetings permit the superintendent and others to 'buy in' to school initiatives. The meetings must take place primarily for communication and assistance not

evaluation and review, although the latter two processes are necessary at some point. Built-in mechanisms for review, assessment and re-vitalization must exist; it is time to proceed to these once it is realized that institutionalization has taken place. Open lines of communication must exist not only with board office personnel but between the school and the parents as well as the school and the community. Accountability must not only obtain for existing established programs but must also apply to proposed innovations. The school is not an isolated entity with total autonomy; rather, it is a political entity which is part of the greater political reality of the society in which it exists.

Conclusions

Principals can cope with change in the nineties. They must, however, be prepared to utilize the research knowledge which is accumulating as to why change efforts have failed in the past to ensure that change is successful in their schools. They must also be prepared to engage in continuous critical reflection on their practices; they must explore and experiment using available knowledge when they have it but relying also on informed intuition to create tailored treatments in their particular circumstances. As effective principals and true leaders in their schools they must decide what goals are worth pursuing, what levels of motivation and commitment are needed, and how to provide the necessary drive and inspiration to achieve these goals.

Principals in change efforts must give teachers time and opportunities to voice and work out concerns without fear of reprisals. To take ownership teachers must know they are having significant, not token, input into the processes and products of the change effort. Practitioners, the classroom teachers, must plan and execute the change and the objectives must be realistic and attainable. Principals must place top priority on aspects of the change particularly as identified by teachers.

Successful change must be incorporated into everyday happenings in the school. There should be tangible evidence of the change in the conversations around the school.

Principals need to push yet support the change effort, and they should take steps to secure the support and endorsement of the change by top decision makers in the school district. Institutionalization means that everyone in the system has heard of the change effort and that most support it. There must be a place for the change effort in both school and district budgets. Principals do not have full control of such matters but they must ensure that efforts are made to create the conditions for successful change.

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WHAT THE LEGISLATURE IS NOT TO DO ABOUT SCHOOLS

Ki Su Kim
Faculty of Education
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Section 93 of the 1867 British North America Act lays down the constitutional framework of public education in Canada. It authorizes provincial legislatures to make laws related to education in their provinces but disallows laws that infringe upon the interests of certain groups. Its impact is great. Because education is assigned to provincial jurisdiction, schools can aptly respond to diverse regional demands. In spite of such an advantage, however, the exemption of the federal government from one of the most costly responsibilities of modern states has necessitated the dependence of educational quality upon individual provinces' financial luck. Hence, regional disparity has become a nagging question in Canadian education. Moreover, provincial authorities often feel uncomfortable with the disallowance provisions which practically limit the scope for the improvement of educational services.

In this paper, I shall examine this last point in the Newfoundland context. As is well known, Section 93 is not directly applied to Newfoundland, which has Term 17 of Union, instead. However, Term 17 is not totally unrelated to Section 93; it is, rather, to be viewed as a Newfoundland version of the latter. I shall begin with discussing what Section 93 is about and why Term 17 has to be read in that light. Then, I shall move on to determine what philosophy Term 17 embraces, whose interest it protects, and how. My ultimate question is: What exactly is the Newfoundland legislature not allowed to do? A determination of the extent of constitutional restriction will help the legislature to work out a model of public education that will best serve its people.

1. The History and Philosophy of Section 93

Let me first explain what Section 93 is about, namely, its philosophy or spirit. The original idea of preparing disallowance provisions in the B.N.A. Act was that, just as Upper Canada had been recognizing the educational rights and privileges of the francophone Roman Catholic minorities in its territory, so too should Lower Canada protect the interests of its anglophone Protestant minorities. Initially, therefore, the focus of such provisions was on English Canada's demand for French Canada's respect for minority rights. The Rough Draft of the B.N.A. Bill put it this way: "All the powers, privileges, and duties conferred and imposed upon Roman Catholic separate or dissentient schools, and school trustees in Upper Canada, shall be extended to the Protestant and Roman Catholic schools in Lower Canada!" (43) (Pope 1895: p. 135). The Rough Draft, however, did not go as far as to prescribe a full warrant of minority interests. Nor did it prescribe that only Lower Canada was obliged to protect minority interests. In Section 42 (7), it made clear that only the powers, privileges, and duties of minorities in any province recognized by law at union (specifically, "at the time when this Act came into operation") were to be protected (Point 1) (ibid.: p. 134). If any province had separate or dissentient schools at union or if any province created such schools later on, such schools and their school trustees were to be assured of their vested powers, privileges, and duties. If such schools and school trustees had complaints about any decision or act of the provincial legislature, an appeal was to lie with GovernorGeneral in Council, namely, the parliament (Point 2). The Rough Draft also stipulated that the parliament had "power, in the last resort, to legislate?" remedial

laws in order thereby to overrule a provincial decision or act that had been appealed (Point 3) (ibid.).

Although the wordings of the Rough Draft underwent some changes,¹ the final Act retained in Section 93 all the three main points. Point 1 was split into two subsections. Subsection (1) stipulated that any provincial "Law' ("ordinance' [First Draft, 39]) shall not "prejudicially affect any Right or Privilege with respect to Denominational Schools which any Class of Persons have by Law in the Province at the Union,' thus meaning by 'Denominational Schools" separate minority schools in a province. Subsection (2) specified that not only Lower Canada but also Upper Canada had to respect the powers and so on of its minorities. It thus protected the vested interests of the "Separate Schools and School Trustees of the Queen's Roman Catholic subjects" in Upper Canada as well as "the Dissident Schools of the Queen's Protestant and Roman Catholic subjects in [now] Quebec." Point 2 survived in Subsection (3) almost intact. Point 3 seems to have incurred dispute over the extent of the overruling power of the parliament. The Rough Draft originally indicated that the federal power to remedial legislation shall be exercised "in the last resort.' The subsequent First Draft put it in a tougher wording that the overruling power be "unrestricted" and exercised regardless of the stipulations in the B.N.A. Act (39 [4]). The Third Draft, however, returned to the moderate stance. It prescribed that the power be exercised only 'for the due execution" of B.N.A. Act provisions or any remedial decision by the parliament (67 [4]). The final Act adopted in Subsection (4)the Third Draft's wording.

All in all, English Canada's initial concern with extending the powers, privileges, and duties of minority schools and school trustees in Upper Canada to those in Lower Canada eventually led to constitutional provisions that bound both Canadas. The Manitoba School Question in the 1890's was a good case to test the extent to which the overruling power of the parliament would safeguard the protected minority interests. The dual school system provided for in the 1870 Manitoba Act was a literal application of Section 93 to the region where the population was composed of two fairly balanced linguo-religious groups. Within ten years, however, anglophone Protestants outnumbered their francophone Roman Catholic neighbours. In 1890, Thomas Greenway's Liberal government, supported by the anglophone Protestant majority, stripped francophone Roman Catholics of the right to establish their own schools, thus directly violating Section 93 provisions. The federal government indeed issued a remedial order. However, when it was ignored by the Manitoba government, the federal government chose to negotiate rather than enforce the order. The subsequent Laurier-Greenway Compromise of 1896, however, led only to a revised School Act which allowed extra-school-hour religious classes and conditional English/French bilingual classes (Morton 1982: p. 113). Although numerous actions were taken by the francophone Roman Catholics (including such court cases as the Barrett case and the Brophy case), their initially granted "rights and privileges' in separate schools have, since then, not yet been reinstated. The Manitoba case illustrated limitations in enforcing Section 93 provisions.

Since then, Section 93 was applied to new provinces with more flexibility. When Saskatchewan and Alberta became provinces ten years after the outbreak of the Manitoba school crisis, the Laurier government agreed to apply the Section according to the 'at union" principle, i.e., with 'such modifications as the circumstances of the new provinces warrant' (Tkach 1983: p. 101). The Alberta and Saskatchewan Acts the laws that were to govern the two provinces constitutionally - recognized only the rights and privileges of religious minorities that had already been substantially reduced by the Northwest Territories School Ordinances of 1892 and 1901. Roman Catholic minorities

were allowed only the privilege of setting up their own schools with their own tax monies under the tight control of a secular department of education (*ibid.*: p. 102). The implementation of Section 93 even in the original provinces varied because their situations varied. Nova Scotia and New Brunswick tried to accommodate into their school systems the idea of respecting minority interests although their state of affairs at union did not obligate them to do so. Meanwhile, Ontario and Quebec, from whose delicate mutual relations Section 93 was born, pursued the protection of minority interests in their own ways. Consequently, the actual status of the separate schools in one has not been the same as that of those in another (Bezeau 1989: p. 47). In all these provinces, however, the philosophy of protecting minority interests has been embraced and pursued albeit in differing ways.

11. Term 17 of Union

Term 17 of Union was worded in a way significantly different than that of Section 93. The most prominent difference was the complete withdrawal of the provisions of appeal to the parliament and the latter's power to overrule a provincial decision or act. This meant that education in the new province was to be an entirely provincial matter. The wording of the prohibitory clauses focused on two points: that the provincial legislature did not have authority to 'prejudicially affect" (i) any right or privilege at union of any class or classes of persons with respect to denominational schools, common (amalgamated) schools (i.e., interdenominational schools²), or denominational colleges and (ii) "out of the provincial funds provided for education." Point (ii) was further elaborated in two areas: (a) that such schools shall receive their share of the funds determined from time to time by the legislature on a non-discriminatory basis for all schools under its authority, and (b) that such colleges shall receive their share of any grants voted for all colleges under the authority of the legislature.

Whereas Section 93 has been applied to other provinces with flexibility in spite of the overruling power of the parliament, the Newfoundland legislature has interpreted Term 17 in a very restricted way in spite of its freedom from federal intervention. The scope of the officially accepted interpretation is so narrow that the school system based thereon is far from what a disinterested reader can infer from the text. Under the current Schools Act, for instance, an educational district is to be established normally upon the recommendation of a denominational education council (5 [3]). If the region does not have a "recognized" denominational education council, a recommendation can be received from the General Advisory Committee which is represented by such denominational education councils (5 [7]; Department of Education Act [DEA] 21 [1] [e], [g]). If the region has no religious denomination or a denomination whose status is not recognized by the "at union" principle, it cannot have an educational district unless the legislature resolves to recognize the denomination constitutionally (5 [9]). A school board that comes into being under the auspices of a denominational education council writes its own constitution to be approved first by the council and then by the government. Legally required seats for elected board members are merely one-third or more (7 [3]). The rest are to be appointed by the council from clergymen or other denominational officers (DEA 18 [a] [i] [B]). The board is therefore responsible mainly to its denominational authority and only partially to the citizens who support it. Thus, schools in Newfoundland are under the exclusive control of a few religious denominations.³ Even though they rely almost entirely upon taxpayers' money, those denominational authorities are not held responsible for any failure they entail in providing "public" education. (For example, the legislators may not be re-elected if they

have failed to meet with given mandates. However, the denominations do not assume responsibility in a similar case). In short, the interpretation of Term 17 as embodied in the Schools Act is such that the Act endorses the denominational authorities' unaccounted monopoly of public education rather than protecting any minority interest. My reading of Term 17, however, does not lead to supporting such an established interpretation.

The interpretation of the Term as entrenched in existing legal provisions appears to be as follows:

1. The rights and privileges protected by Term 17 are the rights and privileges of religious denominations (e.g., DEA 17, 18).
2. Since all the schools and colleges that existed at union were either denominational or interdenominational, the denominations that had stakes at that time in those schools and colleges are de facto all of the educational authorities.
3. All the provincial funds for public education are to be distributed among them on a non-discriminatory basis (DEA 17 [3]).

However, the text of Term 17 does not endorse this reasoning. As regards 1, it simply states that such rights and privileges of "the class or classes of persons" with respect to the specified types of schools and colleges should be prejudicially affected neither by law nor by educational funding. There is no indication that the rights and privileges of the . class or classes of persons" are those of religious denominations. As regards 2, Term 17 specifies denominational schools and colleges and common (amalgamated) schools not as all of those that exist or could possibly exist, but only as those whose interest should not be prejudicially affected. What is implied with respect to 3 is therefore not that all the provincial funds available for funding schools and colleges in Newfoundland ought to be distributed only among those protected schools and colleges, but that such schools and colleges ought not to be discriminated against when the funds are distributed. Thus viewed, the essence of the provisions is protection of the interests vested in those schools and colleges and not recognition of those denominations with stakes in those schools and colleges as monopoly forces in public education. This implies that the current interpretation as found in educational laws is not adequate. How then shall we read Term 17?

III. The Philosophy of Term 17

The reasonable way of reading the document is reading it in the light of Section 93 whose philosophy is the protection of minority interests. The most obvious reason for suggesting this way of reading is that Term 17 is part of the constitution of Canada. As such, it cannot contradict what the B.N.A. Act stipulates because the latter is the main framework of the constitution. Therefore, the viewpoint that we have to adopt in reading Term 17 is that the latter is a Newfoundland application of Section 93, embodying the latter's philosophy. If the B.N.A. Act protects minority interests, it is inconsistent that Term 17 accords some major groups the monopoly right to what is apparently public. Such a viewpoint can yield a germane ground for developing new discussions on public education in the province. There are supplementary reasons as well for reading the text in this way.

Term 17 can be seen as a product of deliberation upon the philosophy of Section 93 and the historical background of Newfoundland schools at the time of union. By the time of union, as we have seen briefly, Canada had accumulated enough experience to understand the difficulties of implementing the philosophy of Section 93 in the provinces where society was changing rapidly. Therefore, as we have seen, when Saskatchewan and Alberta became provinces soon after the Manitoba school crisis, the Laurier government chose to secure minority interests within the "at union" principle. In the case of Newfoundland, as well, the government of Canada adopted a similar approach. The provisions in the "proposed" Term that the Canadian government originally prepared were very similar to Section 93 (Penney 1988: p. 85). Upon consulting with the Newfoundland delegation, however, the same government agreed to sign the final Term that we now have. Why then did that government do so? Will it be reasonable to imagine that it abandoned the dictates of its own constitution in order to take Newfoundland in?

In fact, the history of education in Newfoundland presents strong grounds to believe that Term 17 was aimed to protect the interests of the denominational groups as minority interests. Denominational schools had begun to be criticized well before the 1874 Education Act established the system legally (Rowe 1964: pp. 90-1). Advances were made as early as 1903 and 1916 to create amalgamated schools and common schools although their "legal sanction" was accorded only in 1943 (Penney: p. 84). A non-denominational academy was tried in 1844, albeit unsuccessfully. An interdenominational normal school was opened in 1921. A nondenominational university college was created in 1925. The Commission of Government that ruled Newfoundland up to the day of union was known to be negative to the denominational system although it failed to bring to it any drastic changes. All these historical facts suggest that the negotiators of the union considered a future in which denominational schools and colleges would be degraded to vulnerable minorities. Thus viewed, the constitutional protection of the interests of denominational groups in education takes a proper context. Nevertheless, protection does not mean confinement. So the Term protects the cooperative interests vested in common or amalgamated schools, as well, to ensure that denominational groups could opt out of, as well as opt in, the denominational framework. McCann (1988: p. 73) thus points out that it "not only safeguarded the rights and privileges of denominational schools but also those of 'common (amalgamated) schools,' and also allowed them due share of financial aid from the government."

IV. Whose Interests to Protect?

The gravest mistake in the established interpretation, then, is due to the failure to attend to the reasons why such protective provisions were prepared in the constitutional document in the first place. Failure to see the interests of denominational groups as minority interests limited the interpreters to the one idea of protecting the status quo of some religious denominations. The interpreters thus identified the interest of a denominational group with the interest of the denomination. Such a mistake was obviously caused by misreading the phrase "class or classes of persons" in the text. A good example of this is the House of Assembly's resolution to recognize and enshrine in the new Constitution of 1982 that: "The Pentecostal Assemblies of Newfoundland be possessed of all the same rights and privileges with respect to denominational schools, common (amalgamated) schools or denominational colleges as those held under Term 17 by any other class or classes of persons in the Province at the date of Union" (Penney 1988: P. 99). In this resolution, the Pentecostal Assemblies of Newfoundland as a denomination is taken to be the "class of persons" whose interest is provided for constitutional protection. This officially embraced interpretation takes note of "class or classes" and overlooks "persons." It thus takes heed of "denomination or denominations" while completely ignoring those individuals who have rights and privileges to pursue an education along their denominational lines. Literally, however, what the phrase "class or classes of persons" means is entirely different. The phrase "class or classes" is just a category whereas the real substance is "persons." Therefore, the real substance of the phrase must be "individuals of a denomination or denominations" rather than "denomination or denominations." Consider other examples of the "p of q" format. When I say that I wish to drink 'a glass of wine,' I mean thereby that I am desirous of wine and not of a glass. Therefore, I would not mind even if you give me wine contained in a plastic cup or in a paper pack if only the quantity is what I expect (and perhaps a little bit more). Similarly, when you buy a two-litre bottle of Coke, you in fact buy two litres of Coke and not the two-litre bottle, which can be returned anytime for your deposit. We may imagine a case very similar to what we have. Suppose the parliament revises constitutional laws in order to protect the German-Canadian culture. The parliament stipulates in their legal text that any right or privilege of the class or classes of persons with respect to the German-Canadian culture shall neither be prejudicially affected by any law nor by federal funds for promoting cultures. In this case, who holds the protected rights and privileges, individuals (most likely German-Canadians) interested in the German-Canadian culture or a national German-Canadian organization?

It is to be noted that Term 17 borrows the phrase "class or classes of persons" from Section 93, in which the phrase "class of persons" is used to designate individuals of dissentient denominations. The Section specifies "the Queen's Roman Catholic subjects" or "the Queen's Protestant and Roman Catholic subjects" as those whose rights and privileges in education are to be protected. The constituency of the rights and privileges lies in the individuals ("persons"), not in any denomination to which those individuals belong ("class"). (Obviously, it is impossible that the B.N.A. Act protect the rights and privileges of "the Queen's Roman Catholic Church" or "the Queen's Protestant and Roman Catholic Churches" because it is not those churches that pay loyalty to the Crown: only the members of those churches. And where there is no loyalty, there is no protection). Therefore, separate schools and their trustees, whose interests Section 93 protects, are all subject to the decisions of individuals in support of the schools. Separate schools are established by the individuals' collective petition, trustees are elected by, and accountable to, those who elect them and pay rates. The denominational authority does not have any jurisdiction over matters related with the

schools. Why then should the same phrase found in Section 93 be interpreted differently in Term 17 and especially when they are both part of the same constitution?

More fundamentally, a right or privilege recognized in the denomination ("class") rather than in its constituent members ("persons") can be incompatible with the philosophy of protecting minorities. In order for the rights and privileges recognized in the denomination to be justified in such terms, all members of the denomination must have an equal chance of participating in the process of exercising such rights and privileges. This condition requires that the organization of the denomination is such that every member's opinion regarding the exercise of the rights and privileges can be represented in the process of making decisions and executing them. But not all religious denominations may satisfy such a procedural requirement because a religious denomination does not have to be operated democratically. Moreover, if, as it is the case now in Newfoundland, all schools were operated on a denominational/interdenominational basis, there would be no guarantee that every member of society would equally benefit from such a system. Because even when all members of society belonged to one or another recognized denomination, the degree of their allegiance to such denominations would vary. Some may participate in whatever activity their denomination organizes; some may participate only in its religious activities and not in educational activities; some may be members of the denomination only nominally and actually not participate in any of the denominational activities. The problem in this case is not only that the right or privilege accorded to a denomination will not benefit the last two categories of people but also that it will infringe upon their basic rights. Even worse is what Penney (1988: p. 90) draws our attention to. He reports that in 1981 almost 16,000 Newfoundlanders were non-members of any of the recognized denominations, even nominally. These "dissentient" individuals, however, are forced by laws to send their children to denominational or interdenominational schools. This is obviously a case in which the rights and privileges of minorities are sacrificed on behalf of the majority. Historically, Penney points out, the number of non-Christians has been increasing in Newfoundland. We can then imagine a situation in which only 10 percent of Newfoundlanders belong to the recognized denominations whereas the rest are not. Can the phrase "class or classes of persons" in Term 17 still be interpreted as it is now so that it can justify the minority domination of majority education? (What if 99 percent of Newfoundlanders become no members of any of the established denominations?)

In sum, Term 17 must be seen as protecting the rights and privileges of the individual citizens who wish to educate their children in the teachings of their denomination, provided that the denomination was recognized by law at the time of union. How, then, does the Term protect their rights and privileges?

V. How to Protect?

Term 17 stipulates that the legislature does not have the authority to make laws that prejudicially affect certain groups in terms of their rights and privileges and in terms of funding. It also stipulates that the schools and colleges operated by such groups shall receive their share as determined by a non-discriminatory scale. The text of Term 17, therefore, uses two different formats in order to prohibit two specific legislative actions that prejudicially affect the groups' interests. When it refers specifically to a prohibited law, it uses the single principle that the law shall not "prejudicially affect" the groups' interests. When it refers to the scale of funding, it uses two principles: namely, that the scale shall not "prejudicially affect" the groups' interests and that it shall not be

"discriminatory" against the groups. In order to determine the extent of protection, therefore, it is appropriate to clarify the two formats and examine their practical implications.

With respect to the first format, two cases can be considered in which an act prejudicially affects a group's interest: it can do so either on the group's behalf or on its disbehalf. In other words, when A prejudicially affects B's interest, A can do so either to B's advantage or to B's disadvantage. However, whether A's act affects "prejudicially" cannot be determined in the exclusive relationship between A and B. For in such a case A's act can be either to favour B or to disfavour B. In order to be "prejudicial," A's act upon B must be compared with his act upon others like C, D, and E. For instance, if you punish only one of your twin sons for a mischief done jointly, you thereby favour one and disfavour the other. In this case, both of your twin sons are "prejudicially affected" by your disciplinary policy, one to his advantage and the other to his disadvantage. Therefore, what the first format implies is that a law shall not favourably or unfavourably affect the interest of a group while not doing so to other groups (no prejudicial affection principle). This may lead to saying, ironically, that a law can favour or disfavour a group if it does the same to all groups.

The second format is more complicated. It stipulates that a scale for distributing educational funds shall neither "prejudicially affect" the interest of a group (no prejudicial affection principle) nor "discriminate" against the group (no discrimination principle). Whereas prejudicial affection can occur either to the advantage or to the disadvantage of a group, "discrimination" is made to the disadvantage of a group. Therefore, the no prejudicial affection principle subsumes the no discrimination principle. What is suggested by the second format, then, is two-fold. First, in the no prejudicial affection principle, it is normally suggested that a funding scale shall not prejudicially affect the interest of a group either to its advantage or to its disadvantage. Second, in the no prejudicial affection principle in which the no discrimination principle is included, it is strongly suggested that the funding scale shall not prejudicially affect a group at least to its disadvantage. (This of course does not mean that the funding scale shall prejudicially affect the interest of the group to its advantage because doing so, as well, violates the no prejudicial affection principle). The practical implications of the two suggestions as well are different. In light of the normal suggestion, the legislature shall not establish a funding scale that is either advantageous or disadvantageous to a group while it is not so to other groups. In other words, it must treat all groups equally. In light of the strong message, the legislature shall establish a funding scale that is, at least, not disadvantageous to a particular group.

This analysis yields a conclusion that the two formats aim at maintaining a certain existing balance between different groups rather than protecting one, some, or all groups' interest. For even under the policy not to prejudicially affect any group's interest by law or "out of funds" and not to adopt a discriminatory funding scale, it is possible that the legislature damages one, some or all the groups without breaking the balance. For the legislature still reserves the option to "non-prejudicially" disband all the groups or to "non-discriminatorily" starve all of them by not funding at all or by funding only nominally (e.g., giving just one cent to each group), thus leaving the burden of maintaining their schools and colleges virtually to the stakeholders. The two formats are then far from protecting the current denominational school system because they can underwrite the demolition of all denominational or interdenominational schools and colleges.

In order to be "protective" measures, the formats must, in effect, protect certain denominational groups' interests. This they can do only when the protected interests of the denominational groups are counterpoised against the unprotected interests of some other groups. These unprotected groups may be other competing denominations, or non-denominational and even anti-denominational groups. Whatever they may be, only when such unprotected groups intimidate or actually infringe upon the interests of the protected groups can the two formats function to defend the latter from the former. Implied by this observation is, no doubt, the situation in which the protected denominational and interdenominational groups are vulnerable minorities.

The implications of a non-discriminatory funding scale can also be considered in this light. The reason for prescribing that a funding scale shall not be established on a discriminatory basis is that a share determined by such a scale is believed to "prejudicially affect" the rights and privileges vested in denominational and interdenominational schools and colleges. Therefore, the criterion in determining whether a scale is discriminatory or not is whether the scale functions to the disadvantage of such schools and colleges while not doing so to other schools and colleges. In other words, the condition that a funding scale is required to meet is that it shall not discriminate against any school or college for religious or denominational reasons. No doubt, this does not imply that the legislature is obligated to fund denominational and interdenominational schools and colleges under all circumstances. Funding those schools and colleges is primarily the responsibility of their stakeholders. Two reasons can be given for this observation. First, to protect rights and privileges does not mean to warrant the exercise of such rights and privileges. For instance, to say that the legislature has to protect your rights and privileges in dining out does imply that it has to pay your restaurant bills. The legislature's responsibility is only to make sure that no one hinders your dining out at your own expense. Second, a nondiscriminatory funding scale does not necessarily mean that all funds should be divided equally or on a "per capita" basis. If only the scale is determined according to criteria applicable to all parties, there is no breach of the no discrimination principle (e.g., no scholarships for low achievers, no housing grants for gamblers, no funding for schools where academic achievement is well below the national average, etc.).

VI. Summary: What the Legislature Is Not to Do

The Terms of Union as part of the constitution of Canada cannot be interpreted in a way that contravenes the philosophy embodied in the constitution. Term 17 as the constitutional framework of Newfoundland's public education cannot be interpreted in a way that contravenes the philosophy of Section 93.⁴ In light of Section 93, however, Term 17 as translated into the school system of Newfoundland obviously violates the philosophy of protecting minority interests. Rather, the system accords a few religious denominations the monopoly right to public education at the expense of taxpayers' money without even being held accountable for any failure they entail. Term 17 does not exhibit any evidence that such a system is what it purports to warrant. It merely prescribes that the rights and privileges of individuals supporting denominational schools are to be protected if they were legally approved to do so at union. Even in that case, the Term does not imply, explicitly or implicitly, that the financial burden remains on the shoulders of the legislature. Implicitly implied is a situation that the denominational and interdenominational schools and colleges are, some day if not today, minorities in need of protection. The Term stipulates that such schools and colleges shall not be discriminated against in receiving a share out of the province's educational funds. But there is no implication that such schools and colleges are

entitled to a share equal to that of any school or college that exists or will exist in the province under the authority of the legislature.

Overall, Term 17 accords the legislature of Newfoundland more power in the sphere of public education than that which Section 93 accords to other provinces. The decision or act of the legislature of Newfoundland is not subject to any overruling power of the parliament. its power and authority to plan, establish and manage non-or even anti-denominational schools and colleges or to promote private schools and colleges of similar nature is not restricted by Term 17. Even its power to issue licenses to denominational and interdenominational schools, to supervise and control the operation of such schools and colleges, and to close any such school is not disallowed by the Term. The only area in which the legislature does not have authority is the "prejudicial affection' of the rights and privileges of certain recognized denominational and interdenominational groups of persons vested in their schools and colleges and, when public funds are to be allocated, the .prejudicial" exclusion of them and "discrimination" against their schools and colleges.

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NOTES

Professors Jeff Bulcock, Ishmael Baksh and James Covert have read this paper and kindly offered useful comments.

1. The Rough Draft of 1866 was soon revised to the First Draft, which in turn underwent four revisions until it became the final B.N.A. Act in 1867.
2. A "common" school was set up normally under the majority denominational board with contribution from minority denominational boards operating in the same region. An "amalgamated" school was maintained by a joint board in which different denominations participated (Rowe 1964: pp. 92-3). The two types were therefore "interdenominational" by nature.
3. During the 1989-1990 academic year, four denominational or interdenominational authorities controlled the education of 99.53 percent of the total elementary and secondary students. The rest 0.47 percent were educated in "non-public" schools, including two private schools, two youth centres, one deaf school and one native school (Department of Education 1990: pp. 2, 71).
4. Nor can it be interpreted in a way that contravenes the stipulations in the 1982 Constitution, especially its Charter of Rights. Although the Charter recognizes the denominational rights and privileges protected in Section 93, it is obvious that it does not approve the way in which Term 17 is currently interpreted. However, I have left this point out of my discussion.

THE ELUSIVE CONCEPT OF EFFICIENCY IN EDUCATION

Jim Cooze
Faculty of Education
Fall 1991

Introduction

In economic terms the concept of efficiency can easily be defined as the relationship between inputs and outputs, whereby economic efficiency is increased by a gain in units of output per unit of input. This can occur by holding output constant and decreasing input or by deriving greater production from the same level of input. In relation to education, then, we may say that various educational outcomes can result from a variety of different combinations of inputs such as teachers, buildings, class size, curriculum, etc. The problem that confronts economists and educators, however, is how to mix the inputs in the right proportions to achieve the most efficient outcome. But the problem is further compounded when we ask ourselves "What output should we measure?" According to Sheenan (1973:131), it is very difficult to specify a unit of output "because educational systems so often in practice have no single well defined function, so also they have no single well-defined indicator of output."

Clearly, education serves many outcomes and some of these cannot be measured by using econometric techniques of orthodox economic theory. For the typical profit-maximizing firm it is possible to put money values on the inputs of the production process and, in turn, assess its efficiency. Therefore, in a firm the right mix, or maximum efficiency, is achieved when the price of the resources used to make the commodity is equal to the marginal cost of producing it; that is, $p = MC$. In education, this is not feasible since many of the outputs are not quantifiable in terms of market prices. Historically, though, there have been efforts to increase educational efficiency. For instance, during the early nineteenth century an elaborate British system of tutors and monitors, the so-called Lancastrian system, was used in an effort to boost school output (Tyack, 1974). Similarly, in the early twentieth century, American schools were greatly influenced by the then prevalent scientific management movement founded by Frederick Taylor. The hope was that Taylor's principles of scientific management, which were popular in the manufacturing sector, could be applied to schools in order to enhance learning and reduce costs (Callahan, 1962). In order to explicate the problems inherent in the measurement of educational efficiency, it is necessary to examine the research done on the most obvious input-output production functions: namely, class size versus student achievement and size of school versus cost.

Class Size Versus Student Achievement

From a theoretical standpoint, it would appear to be intuitively plausible to expect that the longer students are exposed to school-based resources the greater would be their achievement. Thomas and Kemmerer (1983) found that in this regard there is some evidence to show that 'learning group' size (a measure of access to resources) does increase student achievement. However, even within the same classrooms, Thomas (1982) found that the amount of time teachers spend with each student varies considerably and is associated with differences in achievement for each student. Moreover, there are important differences in quality and effectiveness among teachers which impact upon student achievement. Research findings regarding the

relationship between teacher characteristics and student achievement seem to suggest that verbal aptitude, quality of university programs, and experience are associated with gains in student learning (Summers and Wolfe, 1977; Levin, 1969; Hanushek, 1981). Nevertheless, Thomas (1977) points out that it is extremely difficult to separate the independent effects of teacher attributes since highly qualified teachers are more likely to work in schools and communities that have more and better resources. Besides the foregoing, there are other difficulties involved in researching the relationship between class size and student achievement. For instance, student achievement is obviously affected by the educational milieu of the home and the presence (or absence) of excellent community facilities and resources. Differences in student learning appear to be associated with: differences in parental time spent in learning-related activities (Leibowitz, 1977; Mumane et al., 1981); learning-related opportunities after school hours (Medrich et al., 1982), and community-based resources such as activities for children, better libraries and other community-based cultural events (Benson, 1982; Medrich et al., 1982).

In essence, then, it appears that no two investigations will have the same input mix and, consequently, the outcomes of the investigations with regard to class size and student achievement will vary.

Size of School Versus Cost

Controversy and doubt surrounds not only class size but school size as well. For instance, a study done by Campbell (1965:3) on School Size: Its Influence on Pupils showed that

while students in large schools were exposed to a large number of school activities and the best of them achieved standards in many activities that were unequalled by students in the small schools, students in the small schools participated in more activities, their versatility and performance scores were consistently higher, they reported more and better satisfactions and displayed stronger motivation in all areas of school activities.

However, when comparisons are made between small and large schools regarding cost, there appears to be enough evidence to suggest that schools, like firms, are able to achieve **economies of scale**; that is, as the school becomes larger the cost per pupil drops. But, according to Sheenan (1973:133), "the use of cost studies for comparing different kinds and levels of education tells us nothing about efficiency as the goals and activities are different; their main use is in the area of budgeting and finance." After examining fifty years of research on economy of scale in higher education, Brinkman (1985) concluded that the concept of economy of scale is not a clear-cut one. He noted, for example, that the definition of scale is confused in theory and practice in that classic definitions relate scale to productive capacity, whereas most empirical studies define scale in terms of organization size or quantity of output. As well, Brinkman pointed out that economy of scale studies may be influenced by **short-run** versus **long-run** behavior. Short-run effects may influence results in cross-sectional studies; or, conversely, short-run effects might be minimized in longitudinal studies based on performance over time. Similarly, educational organizations may be particularly prone to wide fluctuations in important variables; for instance, with regard to enrolment, costs per student may at first decline with enrollment increases but later rise with the consequent addition of staff and services, thereby giving distorted results.

Conclusions

It appears, then, that organizational researchers investigating efficiencies in education tend to limit investigation to the distribution of resources within a single system and often examine the consequent effects in terms of cost per student. Therefore, it might be argued that this approach is really an investigation of resource allocation rather than efficiency. Hence, due to the obvious difficulties inherent in the measurements of efficiency with regard to the myriad of factors that impinge upon student achievement, one may conclude that we face a pervasive ignorance about the production function of education; that is, the relationship between school inputs and outputs. In this writer's opinion, the production function must be used cautiously when applied to education, not only because of the many problems that plague it, such as multicollinearity, simultaneity, etc., but also because what might be cheapest may not necessarily be best.

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**PREDICTIONS OF TEACHER ABSENTEEISM:
UNTYING THE GORDIAN KNOT?**

S. McGrath
Department of Education

J.W. Bulcock
Faculty of Education

A. Ponder
Lakehead University
Winter 1991

They said it couldn't be done. So I smiled and I went right to it. I tried that thing that couldn't be done and I couldn't do it.

Introduction

A recent study of teacher leave patterns by McGrath (1990) and the Institute for Educational Research and Development in Newfoundland and Labrador provided descriptive data on leave use by teachers, mainly sick leave, by board, by geographic region and for the Province, as a whole (see Ponder and Bulcock, 1990). The second, and perhaps more interesting part of the study, attempted to examine the relationship between certain personal and situational variables and teachers' use of sick leave. That is, to what extent does knowledge of the variables allow us to predict teacher absenteeism?

The model used for this study was a modification of the one proposed by Steers and Rhodes (1987) which hypothesizes that work attendance is largely a function of two sets of variables, an employee's motivation to attend and an employee's ability to attend. The revised model is presented in Figure 1. It incorporates many of the variables that are generally accepted as affecting employee leave use and is the only model found that includes the variable, ability to attend.

This latter is considered to have direct application to the study because it recognizes that no matter how motivated an employee may be to work, attendance may be contingent on the ability of the employee to do so. Illness, disability or other situational constraints beyond the control of the teacher sometimes result in short term absence from work.

There were two primary sources of data for this study. One consisted of information available from various files of the Department of Education; the other consisted of information gleaned through a questionnaire administered to a sample of elementary teachers on the Avalon Peninsula (n = 756). The sixteen independent variables were subdivided into personal traits and situational variables as follows:

Personal

Age (E)
Sex (E)
Marital Status (E)
Education (E)
Experience (total) (Q)
Health (Q)
Accumulated unused sick leave (E)
Sick leave as an entitlement (Q)
Experience in present school (Q)

Situational

Size of school (E)
Place of residence (Q)
Distance to work (Q)
Coverage by substitutes (E)
internal coverage by staff (Q)
Urban/Rural community (E)
School Board (E)¹

A full discussion of the related research pertaining to each of the variables and a rationale for its inclusion in the study is contained in McGrath (1990).

Space does not permit the inclusion of the total questionnaire. However, in order to give the flavour of the instrument, two samples have been included. For example, teacher perceptions of sick leave as an entitlement was measured partly by the item:

Like any other entitlement or employee benefit sick leave should be used. Respondents could indicate, on a four point scale (strongly agree, mostly agree, mostly disagree, strongly disagree), this agreement or disagreement with the statement.

Similarly, perceptions of health were covered by the item:

Would you say your health is:

- (a) excellent
- (b) good
- (c) fair
- (d) poor

The data obtained from Department of Education files was essentially factual information. The information from the two sources were then merged into a single file for analysis. That is, the extent to which the independent variables listed above were associated with teacher sick leave use, was determined. Table 1 and Figure 2 show the results of the analysis.

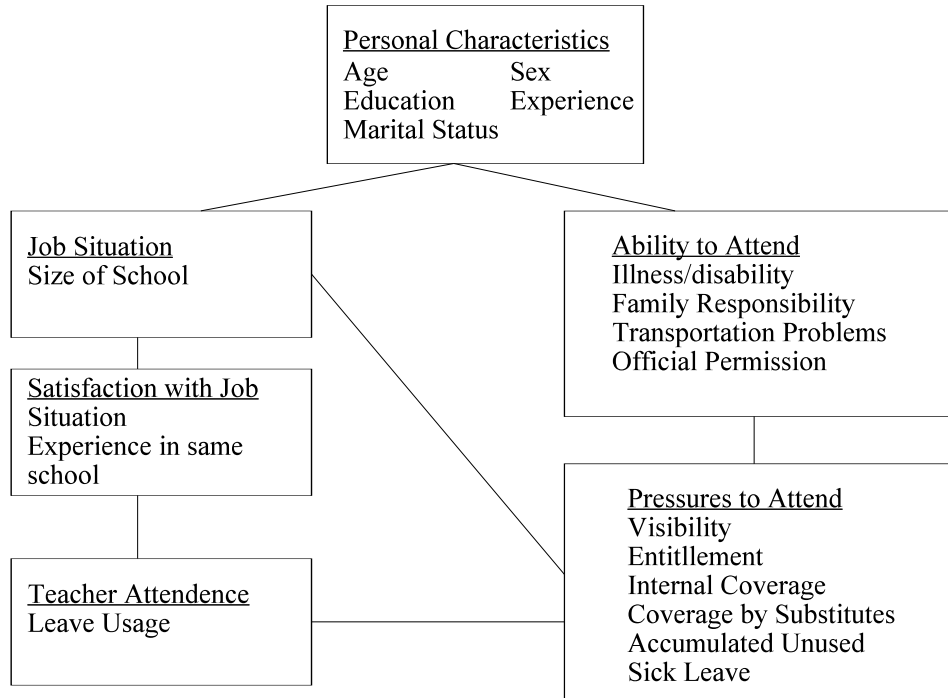


Figure 1. Major influences on Teacher on Leave Usage

The independent variables found to be associated with sick leave usage included gender, marital status, unused accumulated sick leave, perceptions of health and sick leave as an entitlement. However, collectively they explained only ten percent of the variance.

Discussion and Conclusions

When a total of sixteen separate independent variables explain only ten percent of the variance (ninety percent remains unexplained) some serious questions need to be asked. First, were the appropriate variables included in the model? That is, have some important ones somehow been omitted. The answer may have to be "hopefully not". This study included more variables than had been contained in any study heretofore. It investigated many of the same ones utilized in prior studies plus others which the researchers felt could be significant, e.g., sick leave as an entitlement. Thus it is possible that some other critical variables have been omitted but the researchers are at a loss to say just what they might be. Secondly, important variables may have been improperly measured. But once again the researchers adhered to accepted measurement practices, though the problem of attempting to balance the numbers of items on the questionnaire with the limitations imposed by the overall length of the instrument was a difficult one. Finally, the reasons teachers take leave may be

idiosyncratic; that is, there are numerous reasons why teachers are absent (aside from being genuinely sick) but they are randomly distributed across the population.

No clear patterns emerge. Although the study breaks new ground with respect to teacher leave use in the Province, it adds little to what has already been found by the somewhat limited research in the field in general. Perhaps longitudinal studies or raising the level of aggregation to, for example, the school level might yield more definitive results. At the same time, this may be, at best, optimistic speculation. Perhaps another approach to the problem might be more appropriate. That is, possibly teachers with high sick leave usage and those with low usage could be identified and small samples could be interviewed in-depth to attempt to determine factors which influence high or low rates of absenteeism. Traditionally studies of leave patterns have been conducted through the use of survey research and data banks. Perhaps the nuances of absentee patterns are too subtle to be revealed by the broad focus inherent in such research practices.

Finally, in any analytical study, the distinction between significance and importance needs to be made. In this particular study, the greatest amount of variance accounted for by any single significant variable was teachers perception of their own health, yet the total variance accounted for was only ten percent. The authors leave the determination of the importance of their findings to the reader.

TABLE I

Multiple Regression Parameter Estimates,
Integrated Model

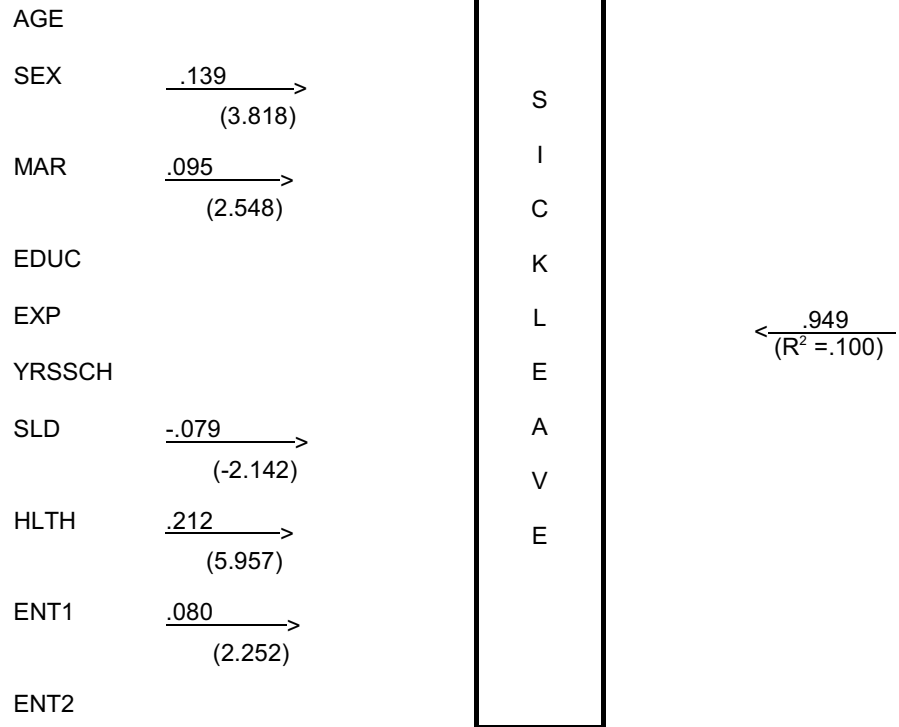
INDEPENDENT VARIABLES	B	SE B	BETA	T	SIG T
AGE	.022	.103	.015	.217	.8280
SEX	3.571	.933	.139	3.818	.0001
MAR	2.825	1.109	.095	2.548	.0110
EDUC	.063	.413	.006	.153	.8784
EXP	.72	.109	.048	.658	.5110
YRSSCH	.131	.329	.017	.399	.6900
SLD	-.329	.153	-.079	-2.142	.0326
HLTH	3.674	.617	.212	5.957	.0000
ENT 1	1.026	.456	.080	2.252	.0246
ENT 2	-.342	.335	-.037	-1.020	.3081
FTTCHRS	.004	.044	.004	.097	.9230
U/R	-.845	1.042	-.036	-.810	.4181

INDEPENDENT VARIABLES	B	SE B	BETA	T	SIG T
COV 1	3.654	2.073	0.63	1.762	.0784
COV 2	-.361	.783	-.016	-.462	.6445
RES	-.988	.889	-.046	-1.112	.2263
DIST	.882	.473	.079	1.865	.0625

MULTIPLE R. 316 N=756
 R SQUARED .100
 ADJUSTED R SQUARE .81

Age = Teacher's/respondents age, sex = gender, Mar = Marital status, EXP = years of teaching experience, YRSSCH = Teaching experience in present school, SLD = Accumulated unused sick leave, Health = Teachers' perceived health status, ENT 1 & 2 = Sick leave as an entitlement, FTTCHRS = School size, U/R = Urban or rural community of school, COV 1 = Absence covered by substitute teacher, COV 2 - Internal coverage or filling in by other teachers or staff during an absence, RES = place of residence of teacher, DIST = Travel distance to school.

Personal Traits



Situational Factors

- FTTCHRS
- U/R
- COV 1
- COV 2
- RES
- DIST

Figure 2. Parameter estimates for the Integrated Model*, (N = 756)

*Standardized partial beta coefficients above the paths, t-values in parentheses below the paths; all non-significant paths were omitted; t-values greater than or equal to 2.0 are significant at the $\leq .05$.

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NOTES

1. The letter (E) indicates that the data came from Department of Education files, the letter (Q) identifies data derived from the questionnaire.

WHAT NOW? A REFLECTIVE SYNTHESIS AND A CHALLENGE FOR THE FUTURE!

**G. Llewellyn Parsons
Faculty of Education
Winter 1991**

There has been during the past decade much discussion about the merits of the partnership of church and state in the governance of education in this Province. Some would contend that the system should be dismantled and a purely non-sectarian 'public school' system put in place. Most of the evidence seem to support the view that the present system can evolve and can be improved to promote the interests of all our people if we sincerely work together to identify and resolve the problems being encountered.

One obvious problem in the partnership between church and state has been the perceived "balkanization" of denominations and groups of denominations in providing their own schools when in many cases one common school with shared facilities could have been provided. These types of joint service schools could, through good will and cooperation among boards, communities and Denominational Educational Councils, be effected in many areas of the province where economics or population do not warrant the building of separate schools. In this regard I believe that the Schools' Acts and the Department of Education Acts for the Province should be revised and changed to permit and encourage any school boards or groups of boards that have districts coinciding geographically in whole or in part to make arrangements for the establishment and maintenance of a joint service school in any locality where conditions justify and that proper legal provisions be made to safeguard the accommodation of traditional values and religious preferences of our Newfoundland people.

Such cooperation will mean a change of attitudes on the pan of the churches, administrators, and particularly among communities as Austin Harte's research indicates. The actions and process that churches, administrators, and teachers need to initiate to change attitudes in communities in favour of cooperation in education will include:

- developing goodwill among various groups;
- demonstrating the positive outcomes of working together;
- making provisions in the school for the teaching of religion and values relevant to all members of the community;
- showing kindness, love, respect and loyalty and demonstrating tolerance; increasing communications with all role senders to the school and community - the parents, the churches, the teachers, and administrators;
- attempting to change 'decision-making at the top', 'institutional control', or 'fishing admiral' syndrome by encouraging all people to participate in decision-making;
- learning more about the role that the churches do play and can play in education;

- emphasizing in all aspects of education cooperation rather than competition. Emphasis should not be placed on one denomination "outshining" another in the community but rather how can educational needs of all best be achieved;
- taking initiatives in promotion of sharing of facilities - specialist teachers, special education programs, bussing, etc.;
- helping members of the community to question the need for new facilities when adequate facilities which can be shared are already available;
- providing opportunities for students of different faiths to work together; having exchange visits among schools whenever possible;
- concentrating on developing a more viable curriculum for the school in the community in the areas of communications, environmental studies, humanities and the pure and applied sciences.

In the social context of our educational institutions I see four challenges which we as educators should seek to address. They are (1) the challenge of participation, (2) the challenge of a new economy and entrepreneurship, (3) the challenge of excellence in education, and (4) the challenge of character formation.

1. The Challenge of Participation and Cooperation

What I am talking about here is the challenge of doing things ourselves rather than having things done to us, that is, learning to effect change rather than being moulded by outside forces. By tradition In this Province we have become used to decision-making at the top and by an outside authority. Even though we may complain about edicts from government or textbooks foisted upon us from other agencies, yet all too often we have not participated in or taken the steps that would make us the creators of the act. The process of education should prepare us to think for ourselves, to share ideas, to make and create for ourselves, to effect things which are relevant to our lives. Life is not something that is done to us; rather it is something that we make out of what we have. In educating our students we need to provide them with the knowledge and skills so that they can effect change rather than have change happen to them. This will mean providing them with marketable skills in the labour market so that they can 'learn to labour truly to get their own living' rather than be dependent upon the labours of others or to 'rub the paint off the government store'.

The administrator, the teacher, the parent must also accept this challenge of participation and cooperation. It is not sufficient for them to state that the aims and goals for Newfoundland education are worthy aims and goals (which they are) and merely accept them as givens - they have to examine and re-examine them in the light of present needs of students. Management in an organization may be little more than routines and bureaucratic behaviours but leadership in administering a school means discussing issues, participating in and guiding the school in achieving its declared goals. Vibrant, active, energetic leadership is really needed in our school systems.

Yet there is much evidence of leadership in our schools today as compared to that of the past. You will notice from Harte's history of education in Newfoundland and Labrador that when legislative grants for education were split between Catholics and Protestants in 1843 no provisions were made for those groups to unite or cooperate where need arose. Again, in 1876 with the division of the legislative grants for education

among Anglicans, Methodists, Wesleyan and Catholics and other groups with a visible church, no provisions were made for sharing of facilities or services. Similarly, with the Education Acts of 1968 and 1969 no provision was made for the sharing of facilities and services among Catholics, Pentecostals, the Integrated Groups of Churches, the Seventh-Day Adventists, or any other body. As Harte points out in his study, boards in the past have been slow to take advantage of interdenominational cooperation. However, in the 1990's religions must cooperate, work together and share facilities if all our children are to have access to the kind of education they need.

2. The Challenge of Economics and the New Entrepreneurship

The structure of economic life in Newfoundland, Canada, and the world has changed in regard to how it makes use of its material, human and natural resources. Today every country or area is interdependent one upon the other. A province's success in the economic field depends upon its relations to other parts of the world and how well it has prepared its citizens to make use of the resources upon which it and others depend. I have stated before that today a student must be well-prepared in communications, in environmental studies, in the humanities, and in the pure and applied sciences but he/she must be able to apply the knowledge and skills gained from these branches to the economic and working life. Education, again, must prepare a person for family living, for community living and for the leisure life; but it must also prepare that person for the working life. In this Province of Newfoundland and Labrador we have bountiful resources; let us as educators provide our students with the knowledge and skills to make the best economic use of them. To do this we need to develop schools that are more comprehensive in nature with broad programs not only in the academics but also in vocational, technical, commercial and aesthetic areas. It is a challenge but it must be done.

The development of more positive attitudes as to what education can do for this Province in terms of economics and entrepreneurship is essential; for education has the power to cure most of our social and economic ills.

3. The Challenge of Excellence in Education

In the 1980's in Newfoundland and Labrador, scarcely more than fifty percent of our students successfully completed a secondary school education in any form. In the 1990's let us as educators strive to accept each student where he/she is and bring him/her along as far as each can go in terms of his/her needs, interests and abilities. If we can modify and provide the facilities and opportunities I see no reasons why all of our students cannot successfully complete a secondary school program in the areas of communications, environmental studies, the humanities and the sciences according to the talents and abilities the Creator has given them.

Recognition of varying talents and abilities will mean diversity of programs in education. It will mean developing curricula that are relevant to the student, to the community and to the Province. It will not mean a dependence upon curricula developed elsewhere that may be unrelated to our aims, goals and objectives.

4. The Challenge of Character Formation

I believe that school is a place where educators and students can create an atmosphere in which human, moral, ethical and spiritual values can be manifested, discussed, and evaluated. There is a need throughout the school system to help

students respect all life not just the human but all living creatures. One task of the school is to teach people to live together and to share one with another in their common humanity. The less we separate out people the better will be the chance to share and to learn from that common humanity.

Someone has said that:

"Every person comes to earth with a message for the human race; he must deliver it or he shall have lived in vain".

It is up to us in this Province to demonstrate how, through sharing and Cooperation, our school systems can be improved.

*The above is based on a summary paper presented at the Fourth Annual Short Course in Educational Leadership on February 16, 1990.

**THE QUALITY OF STUDENT LIFE IN THE FACULTY
OF EDUCATION: THE UNDERGRADUATE CASE***

**Jeffrey Bulcock
Lionel Mendoza
Robert Crane
Theodore Lee
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A year ago in these pages, Mendoza and Bulcock (1990) reported the findings of their inquiry into the academic standards of undergraduate students in the Faculty of Education. They were able to demonstrate the falsity of some prevailing myths about the calibre of students entering the teaching profession compared to graduates in other faculties and schools at Memorial University. Their research, based on the academic performance of the 1987 Memorial University graduates, showed that Faculty of Education graduates, major for major, generally performed as well as, and in most cases better than, the graduates in other faculties and professional schools. In fact, the only exceptions were history and French majors.

The present study continues this tradition; but instead of comparing academic standards, it compares program quality and the quality of student life. And instead of comparing Faculty of Education students with their counterparts in other faculties and schools, it compares Faculty of Education students at Memorial University with Faculty of Education students at another large Provincial University. The study, therefore, has two explicit purposes: first, to describe the perceptions that Faculty of Education undergraduate students have of the quality of their programs; and, second, to describe Faculty of Education students' perceptions of the quality of their student lives.

Some Background Information

The Instrument. In 1986, a Committee was appointed at a large provincial university in Canada to review the Faculty of Education. This university will be referred to as the University of X (U of X). Coincidentally, a few months later, a review committee was appointed at Memorial University of Newfoundland (MUN) for the same purpose. While the terms of reference of the two committees were different, each commissioned special report dealing with student affairs. At the U of X a study was mounted dealing with the quality of life in the Faculty of Education. The U of X Subcommittee on students prepared a questionnaire, and two sections of this questionnaire were selected for administration in MUN's Faculty of Education by the senior authors of this paper. The usual background information – mostly demographic in nature – was included, along with sections on student experiences of their education program, and on student perceptions the quality of their university lives in the Faculty. Because questions of the MUN questionnaire were the same as those on the U of X questionnaire, direct comparisons between the findings were possible.

The Samples. The researchers of the U of X went to considerable trouble to obtain a probability sample - using a stratified random cluster procedure - of all undergraduate students in education. About 27 percent of the student body in each year of the teacher education program were selected. The Dean contacted the professors who taught these students, requesting their permission to allow the students to complete the questionnaire in class time. Some 308 out of 397 questionnaires were

completed at the U of X for a return rate of 78 percent. Twenty-one percent of the undergraduate student body in education participated.

The MUN researchers were far more cavalier in their approach. In the Winter Semester (January through April) of the 1988/89 academic year, they surveyed 11 classrooms of students taking undergraduate education courses. Completed questionnaires were received from 193 undergraduate students. While the MUN sample can be best described as a convenience sample it included 15.5 percent of the full-time teacher education students.

FINDINGS

Some Characteristics of the Two Samples. Information about the two samples is contained in Tables 1 and 2. From Table 1 we learn that while the MUN sample was younger, from Table 2 we note that a higher percentage of MUN students had degrees than those at the U of X. Twenty-seven percent of the U of X sample had degrees compared to 38 percent of the MUN sample. We also note that male students seem to be under-represented in the MUN sample - a finding which is congruent with the fact that a majority of the MUN students were registered in primary and elementary programs, and that most students in these program were female.

The background characteristics of the two samples are remarkably similar. The U of X parents may be slightly better educated but there is very little difference in the distribution of father's occupational statuses. There are more parents from farm backgrounds in the U of X sample and more fathers who are skilled craftsmen in the Newfoundland sample, but these are minor differences. Student teachers in both universities are recruited from the entire range of socioeconomic statuses. The major difference between the two universities was in regard to the students' linguistic and ethnic origins. While 95 percent of the MUN students reported coming from an English background, only 39 percent of students at the U of X reported coming from a similar background.

Program Quality. It can be stated unequivocally at the outset that the Memorial University students reported more favourable perceptions of the quality of their Faculty of Education programs. Out of thirty items designed to measure the dimensions of program quality the MUN students reported more favourable responses than the U of X on twenty-two of them. It is unlikely that this more favourable opinion had anything to do with differences in English background; therefore, this was not investigated.

Table 1. Characteristics of the Undergraduate Samples

Characteristics	MUN	U of X
Sample	193	308
Percent of Student Body (Education)	15.5%	21%
Age (X)	23.1	24.0
<u>Gender</u>		
Male	29.7%	34.7%
Female	70.3%	64.9%
<u>Ethnicity</u>		
English	95.3%	39.0%
French	2.6%	5.0%
Other	2.1%	56.0%
<u>Father's Education</u>		
Elementary School	18.0%	16.7%
Some High School	24.3%	28.0%
Completed High School	11.6%	12.0%
Some Technical, Vocational	20.1%	12.3%
Completed Community College	5.3%	3.7%
Some University	5.8%	4.0%
Completed Bachelor's Degree	7.4%	13.0%
Some Graduate Level, Education	3.2%	3.0%
Completed Graduate Degree	4.2%	7.3%
<u>Father's Occupation</u>		
Self-employed Professionals (e.g., architect, engineer)	12.8%	5.5%
Employed Professionals (e.g., accountant, teacher)	17.6%	20.8%
High Level Managers (e.g., vice-president, manager)	6.4%	7.3%
Semi-professionals (e.g., cameraman, musician, photographer)	0.5%	1.7%

Characteristics	MUN	U of X
Father's Occupation (Cont'd)		
Technicians (engineering technologist, life science technician)	4.8%	4.5%
Middle Manager in Business/Govt.	6.4%	8.7%
Supervisors, Foreman/woman	8.5%	6.9%
Skilled Clerical, Sales (e.g., agents, salespersons)	2.7%	5.5%
Skilled Crafts and Trades (e.g., cabinet-maker, plumber)	26.6%	14.2%
Farmer	1.6%	12.5%
Semi-skilled Clerical, Sales (e.g., office clerk, filing clerk)	0.5%	1.4%
Semi-skilled Manual (e.g., cook, taxi driver)	6.4%	6.6%
Unskilled Clerical, Sales (e.g. mail carrier, nursing aid)	0.5%	1.0%
Unskilled Manual (e.g., chambermaid, janitor)	4.3%	3.1%
Farm Labourers	0.5%	0.0%
Other	0.0%	0.3%

Table 2. Program of Studies

Program	MUN	U of X
Program		
B.Ed. Primary/Elementary	56.4%	44.8%
B.Ed. Secondary	15.5%	40.1%
No Decision	28.2%	5.7%
Primary/Elementary Concentration		
English	38.1%	N/A
French	7.1%	N/A
Geography	4.8%	N/A
Religious Studies	8.3%	N/A
Other Humanities	15.5%	N/A
Mathematics	3.6%	N/A
Other Sciences	1.2%	N/A
Unspecified	16.7%	N/A

Program	MUN	U of X
<u>Secondary Major</u>		
English	24.0%	N/A
French	15.6%	N/A
History	19.8%	N/A
Geography	11.5%	N/A
Other Humanities	8.3%	N/A
Biology	9.4%	N/A
Psychology	2.1%	N/A
Mathematics	5.2%	N/A
Other Sciences	1.0%	N/A
Unspecified	3.1%	N/A
<u>Do You Have a University Degree?</u>		
Yes	38.1%	26.9%
No	61.9%	73.1%
<u>Have you Ever been Employed as a Teacher?</u>		
Yes	N/A	6.5%
No	N/A	93.5%

NA = Not available

Instructional programs, both in schools and colleges, maybe classified in terms of goals and objectives. One such classification scheme - the one used by the U of X Sub-committee on students – was devised by Bloom and Krathwahl (1956). It has stood the test of time and thirty-four years later is still highly regarded. Their "Taxonomy" classified instructional objectives under three headings: the cognitive, affective, and psychomotor. Here, we are concerned with the first two.

In the cognitive area six domains are recognized: Knowledge, comprehension, application, analysis, synthesis, and evaluation. The ordering is intended to be from the lowest to the highest level of understanding. Thus, knowledge focuses on the ability to transmit the factual content of subject matter, while evaluation refers to the ability to judge the validity of theories.

The U of X Committee constructed empirical indicators of the eight domains. The distractors to each indicator were labelled as follows: Definitely Agree, Mostly Agree, Neutral, Mostly Disagree, and Definitely Disagree. For reporting purposes the first two distractors and the last two were combined as "Agree" and "Disagree" respectively. Information on the neutral category is not included in the following tables. The findings on program quality are reported in Table 3.

As already noted, the MUN students were generally more favourable towards program quality than U of X students. On all the Knowledge and Synthesis items, and the majority of the Comprehension and Application items, MUN students responded more favourably than the U of X students. In particular, on items such as "to

communicate clearly the subject matter I plan to teach", "to present lessons in a systematic manner", and "to synthesize various perspectives in the subject I wish to teach", the MUN percentages were over 15 percent higher than those of the U of X. The percentages also imply areas of satisfaction with the program. However, there are certain observations worth noting. On all the Analysis items the U of X students responded more favourably than those at MUN. While the percentage differences were small, this was true for all three items. A similar result applies to 3 of the 4 Evaluation items, with the percentages being greater than on the Analysis items. Of particular concern is that while both groups had a relatively large percentage of students who did not feel that they had learned "to use a variety of ways to maintain classroom discipline", the percentage of students who were satisfied was considerably higher at the U of X than MUN.

There are two other items of significance. The last two items in Table 3 are concerned with the "value of the Faculty of Education" and satisfaction "with my program in the Faculty of Education". In terms of the value of the Faculty of Education the ranking for the U of X students is 30th out of 30 items and for MUN students 27th out of 30. In overall satisfaction the situation is better for MUN students (20th out of 30), but it has not improved for the U of X. Although it can be argued that just in excess of 50 percent of MUN students were satisfied, the generally low percentages agreeing with these items and the relatively high percentages disagreeing is of concern. MUN does better than U of X, but both have unsatisfactory levels of value and satisfaction.

The Quality of Student Life. In addition to the cognitive domain discussed above, the present researchers were interested in students' perceptions of the quality of their university lives. This calls for an analysis of the affective domain. For Bloom and Krathwahl (1956) the affective domain concerns attitudes, interests, and values. In the past two decades a good deal of interest was shown by sociologists in the measurements of indicators of well-being, or the perceived quality of life. The most influential seminal work was by Bradburn and Caplovitz (1969). More recent research is referenced in Campbell et. al. (1976) and Campbell (1981), and reviewed by Schuessler and Fisher (1985). The Bradburn and Caplovitz (1969) work was replicated in studies by Cherlin and Reeder (1975) and, again, by Burt et. al. (1978).

The Sub-committee on students at the U of X, however, used the theoretical framework developed by Australian researchers Williams and Batten (1981) for the purpose of measuring the quality of student life. Williams argues that societal expectations for schooling minimally call for the certification of competence, the transmission of knowledge, the socialization of students, and the promotion of social responsibility. Thus, schools and colleges establish evaluation, instructional, socializing, and disciplinary systems which are experienced by students in different ways. Williams found, for example, that the evaluation/certification system was experienced by the more committed students as an opportunity to learn; the socializing system as promotive of identity formation; and the social responsibility function of schooling as status enhancing. He also identified an instructional system which provoked a range of responses toward teachers. When these experiences the

Table 3. Perceived Quality of Undergraduate Programs in Education

	MUN		U of X	
	Agree	Disagree	Agree	Disagree
IN THE FACULTY OF EDUCATION, I HAVE LEARNED ...				
1. <u>Knowledge Items</u>				
- a considerable amount about the subject I plan to teach.	46.6	32.1	33.4	45.7
- a considerable amount about the methodology of teaching.	59.4	15.5	51.8	25.2
- the professional responsibilities of teachers.	75.1	9.4	72.3	11.9
- a considerable amount about the psychological development of children.	70.5	8.8	59.6	16.8
- a considerable amount about the social-emotional development of children.	60.6	18.1	55.6	21.1
2. <u>Comprehension Items</u>				
- to communicate clearly the subject matter I plan to teach.	57.5	18.7	41.8	29.9
- to write in a precise manner.	45.1	26.9	30.2	35.4
- to plan appropriate learning activities.	81.3	9.4	64.3	16.4
- to speak in a clear and concise manner.	62.5	15.1	63.1	15.4
3. <u>Application Items</u>				
- to evaluate the social-emotional performance of students.	48.2	25.4	46.2	23.6
- to present lessons in a systematic manner.	78.8	13.0	61.5	18.1
- to evaluate the academic performance of students.	65.3	18.1	47.2	24.3
- to use a variety of teaching strategies.	80.3	9.4	70.2	13.4
- to use a variety of ways to maintain classroom discipline.	41.5	33.7	61.6	20.7
4. <u>Analysis Items</u>				
- to analyze theoretical perspectives on education.	58.3	10.9	59.9	13.0
- to assess teaching as a profession.	64.6	12.5	69.9	16.9
- to analyze teaching in terms of various models of training.	46.1	18.1	47.7	19.9

	MUN		U of X	
	Agree	Disagree	Agree	Disagree
IN THE FACULTY OF EDUCATION, I HAVE LEARNED ...				
5. <u>Synthesis Items</u>				
- to synthesize various perspectives in the subject I wish to teach.	53.4	21.0	35.0	28.7
- to combine elements of knowledge into new perspectives.	60.6	12.4	44.2	15.2
- to combine various teaching techniques.	67.7	12.0	61.3	7.2
- to combine information from a number of sources.	74.1	10.3	66.3	7.2
6. <u>Evaluation Items</u>				
- to evaluate various theoretical perspectives in education.	39.9	11.9	49.7	15.7
- to evaluate the subject area I plan to teach.	62.2	16.1	41.8	29.9
- to examine my own teaching critically.	65.3	11.9	70.8	11.1
- to evaluate theories of classroom management.	38.0	31.3	55.3	18.5
7. <u>Value Complex Items</u>				
- to value myself as a prospective teacher.	73.1	8.3	64.5	11.5
- to value research in education.	45.1	22.2	42.9	25.1
- to value the teaching skills I have learned.	67.4	9.3	62.2	8.9
- to value the things I have learned about classroom discipline.	53.1	18.3	61.2	11.5
- to value the Faculty of Education.	44.0	23.4	27.3	40.1
8. <u>Overall Evaluation Item</u>				
- overall, I am satisfied with my program in the Faculty of Education.	53.7	31.5	38.1	39.7

opportunity to learn, identify formation, status acquisition, and perception of teachers - were positive, students were found to rate their school lives as highly satisfactory. When the experiences were negative, students tended to be dissatisfied. Williams, like other researchers in the quality of life tradition, was arguing that while there may be good reasons for studying the objective features of people's lives - gender, social status, age, etc. - and how they affect behaviour, more complete explanations largely depend

on an understanding of how people perceive their world. In this study, the "wood" is that of the undergraduate student in the Faculty of Education.

Given the orientation suggested by Williams, the researchers of the U of X set about measuring student responses to their environment in terms of status, identity, teachers, and opportunity; and students' feelings of well-being as a response, in turn, to these experiences. Again, following Williams, they described well-being in terms of two dimensions - satisfaction with schooling and dissatisfaction with schooling. In the quality of life literature these dimensions are referred to as general affect and negative affect respectively. In sum, then, the quality of student life concept is captured by four domains of schooling and two dimensions of student well-being. The empirical indicators of these six constructs, and the responses to them by the students at both universities, are reported in Table 4.

It is evident from Table 4 that the MUN undergraduates report a higher quality of student life (QSL) in the Faculty of Education than the U of X undergraduates. Out of 40 QSL items in Table 4, MUN students report more favourable standings on 33 of them. On the satisfaction, status, identity, and opportunity items, the Newfoundland students were overwhelmingly more positively inclined than students from the province of X. There was little difference between the two faculties of education, however, in regard to professors. Less than half the Newfoundland sample believed that their professors took a personal interest in student work; and less than half believed that professors helped students to do their best.

Table 4. Quality of Student Life in the Faculty of Education

Items	MUN		U of X	
	Agree	Disagree	Agree	Disagree
THE FACULTY OF EDUCATION IS A PLACE WHERE ...				
1. <u>Satisfaction Items</u>				
- I find it easy to get to know other people	81.9%	7.8%	69.0%	8.2%
- I get enjoyment from being there	65.8%	7.7%	41.2%	21.9%
- students are very friendly	81.9%	4.6%	77.0%	2.3%
- I really like to go each day	50.5%	15.0%	36.8%	29.9%
- I find that learning is a lot of fun	57.3%	10.4%	46.2%	17.5%
2. <u>Dissatisfaction Items</u>				
- I feel depressed	13.5%	62.5%	14.4%	53.3%
- I feel restless	22.3%	51.3%	27.0%	37.8%
- I feel lonely	6.3%	75.6%	5.9%	67.1%
- I get upset	18.3%	51.8%	21.1%	50.7%
- I feel worried	18.8%	50.4%	17.5%	43.4%
3. <u>Status Items</u>				
- I feel proud to be a student	48.7%	20.2%	41.0%	22.8%
- people look up to me	19.3%	38.6%	41.0%	34.4%
- people care about what I think	47.9%	18.8%	48.2%	15.1%
- I am treated with respect	56.3%	10.4%	55.6%	9.9%
- people think a lot of me	25.1%	13.1%	22.3%	11.1%
- I feel important	39.6%	14.0%	29.8%	14.4%
- I feel proud of myself	59.9%	6.3%	55.8%	5.0%
- I get along with the other students in class	91.1%	0.5%	90.1%	1.3%
4. <u>Identity Items</u>				
- the things I learn are more important to me	79.2%	6.3%	58.6%	18.6%
- mixing with other people helps me to understand myself	70.8%	7.9%	58.4%	6.9%
- I am a success as a student	84.4%	2.0%	72.8%	2.7%
- I learn to get along with other people	81.3%	3.1%	65.9%	4.6%
- other students accept me as I am	75.4%	3.6%	75.9%	3.0%
- I have learned to work hard	66.1%	9.4%	51.0%	15.8%

Items	MUN		U of X	
	Agree	Disagree	Agree	Disagree
THE FACULTY OF EDUCATION IS A PLACE WHERE ...				
5. Professors				
- professors treat me fairly	63.0%	15.1%	64.1%	11.4%
- professors give me the results I deserve	60.4%	14.1%	64.1%	12.4%
- professors take a personal interest in helping me with my work	46.1%	20.2%	51.3%	18.0%
- professors help me to my best	49.0%	21.4%	35.2%	18.1%
- professors are fair and just	57.6%	14.6%	57.1%	10.6%
- professors listen to what I say	60.9%	9.9%	54.9%	12.2%
6. Opportunity Items				
- I really get involved in my work	72.0%	28.0%	54.6%	14.1%
- I like learning	80.3%	4.6%	58.5%	13.4%
- I have acquired skills that will be of use to me	71.5%	9.9%	60.5%	15.7%
- I achieve a satisfactory standard in my work	75.6%	5.7%	76.6%	7.6%
- the things I learn will help me in my life	70.8%	11.0%	61.3%	12.1%
- I know how to cope with work	75.0%	6.7%	61.6%	5.6%
- I am given the chance to do work that really interests me	48.4%	26.1%	35.9%	33.6%
- I know I can do well enough to be successful	87.5%	2.6%	82.2%	3.0%
- the things I am taught are worthwhile	59.7%	14.6%	43.6%	26.6%
- the work I do is good preparation for my future	64.1%	15.1%	51.5%	22.8%

Although MUN students were ahead of their U of X counterparts in terms of status, it was still obvious that in both universities the students felt that their efforts and abilities were not appreciated. Only 19 percent (17 percent of the U of X) reported that in the Faculty of Education, people looked up to them; and only about 25 percent of the students at either university believed that people in their faculty thought a lot of them. This implies that many students are alienated; that university life in Faculties of Education is too impersonal; that there are too few opportunities for professors and students to interact.

CONCLUSION

This study had two purposes: to evaluate the quality of teacher education programs; and to evaluate the quality of student life in two Faculties of Education, at two large provincial universities. The evaluation was conducted from the undergraduate student's perspective. The chief assumption underlying the study was that in the

effective Faculty of Education, students would rate both the quality of their programs and the quality of their student lives in favourable terms.

No doubt it will be gratifying to Newfoundland readers to know that Memorial University's education students gave their faculty higher ratings than did the students at the U of X; and that these comparatively high ratings were in two areas – programs and student life. Be that as it may, however, the MUN students identified several areas of concern. These will be taken up in the following order – program concerns, faculty member concerns, and student status concerns.

Program Concerns

First, MUN students expressed reservations regarding the amount they were learning about subjects they were planning to teach. It can be argued that teaching the content is not a function of the Faculty of Education. Whether one accepts or rejects this view, it is of concern that students enter the profession feeling that they do not have adequate subject knowledge. There are many routes to rectification, through upgrading the academic component, building a greater emphasis on the subject content within the methodology courses, and in-service. It is not the purpose of this paper to suggest which, if any, of these routes is desirable. However, if our future teachers feel inadequately prepared academically, the issue must be addressed.

Second, similar concerns were expressed regarding the ability to write, and the same arguments apply to potential solutions and the fact that the issue must be addressed.

Third, there are concerns with the area of evaluation. In both the evaluation of social-emotional performance of students and the evaluation of various theoretical perspectives on education under 50 percent agree that they have learned how to do this. In the case of social-emotional performance over 25 percent say they have not learned this skill. For the evaluation of theoretical perspectives only 11 percent say they have not learned this skill, but this leaves half the group neutral on the issue.

In concluding this section on program concerns let us stress that, as indicated earlier, there were areas of satisfaction with the program. It is not our purpose here to downgrade the significance of these areas. However, the issues that were causing concern, such as knowledge of subject matter, discipline, and evaluation of theoretical perspectives are significant for future teachers. By focusing on them we hope that the profession will address the issues and attempt to find solutions.

Faculty Member Concerns

Apparently, MUN education professors are perceived in much the same way by MUN students as U of X professors are perceived by U of X students. There are two perspectives on the information given by the MUN students. In many cases over 60 percent appear to be satisfied and the lowest result is 46 percent in the case of "personal interest in helping me with my work". Also, the percentages actually stating that they disagree were no higher than 21 percent, and as low as 10 percent. These results could be interpreted as showing that the "majority" of students were happy. However, we would argue that the figures are, in fact, disturbing. They show that on most of the measures approximately 40 percent or more (2 out of 5 students) were not

satisfied. These are our future teachers. The attributes listed in this section would be considered very important for future teachers. Apparently a very significant minority, and in some cases, majority, do not see these attributes in their professors. If we, as a teacher training profession, are not perceived as the role models for these attributes by a large number of students, it should be of concern. While the overall satisfaction percentages on the various items is in the region of 45-60 percent, the very large percentages of students who are not satisfied is alarming and should be of serious concern.

Student Status Concerns

Given the above findings about students' perceptions of their professors, it should come as no surprise to find that students give themselves low ratings in terms of their status as students. Status is a reflection of people's treatment by others. In university settings one would hope that the student would acquire a commitment to the faculty or school and would learn to identify with professors as their role models. At Memorial, the students point out that people do not look up to them or think a lot of them. Only 39 percent feel important and, in fact, only 49 percent feel proud to be students. Overall, these results show that a significant number of education students have low self-esteem. As with other findings, this is disturbing and must be addressed by the education establishment at Memorial.

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**THE ATTITUDES OF NEWFOUNDLAND HIGH SCHOOL STUDENTS:
A COMPARISON OF TWO DENOMINATIONAL SCHOOLS**

**Eric Mintz
Political Science
Fall 1992**

Analyses of Newfoundland's denominational educational system have usually focused on such issues as the cost and efficiency of the system, the political circumstances surrounding its establishment and continuation, the nature of Church-state relations, and the relationship of the system to civil rights (McKim, 1988). Although little research is available on the effects of the denominational education system on students, defenders of the system typically argue that the denominational system is of value because it ensures that religiously-based social values are promoted among young people (Baksh, 1977). Roman Catholic school administrators, in particular, have argued that this does not simply involve the inculcation of a particular set of beliefs in formal religion classes, but also involves the promotion of Christian (or Catholic) values in all aspects of school life. Thus, the assumption appears to be that the existence of separate denominational systems is justified because of the distinctive values which children will learn from their particular school system.

To what extent do children attending different denominational systems actually adopt different values and attitudes? It can be hypothesized that the differential effects of the denominational education system will be most evident among graduating high school students who have had the longest exposure to the system. Subsequent to high school graduation, most young adults will tend to be exposed to the more diverse set of influences of post-secondary education or work. And, although some controversy exists about the extent to which childhood socialization has long-lasting effects, high school graduates do generally possess a fairly comprehensive set of attitudes and values that have social and political implications as they undertake the responsibilities of adult citizenship.

It is not entirely clear what attitudinal and value differences might be expected between the graduates of Catholic and Integrated school systems. Discussions of the denominational school system seem to be conducted in the absence of all but the vaguest comments about the values each of the two systems promote. To facilitate analysis, I have hypothesized that Catholic students will be less materialistic and less oriented to a competitive economy than Integrated students, more favourable to assistance to the poor, less libertarian in matters of morality and sexuality, more favourable to "traditional" family arrangements in which most women are expected to stay at home to raise children, and more favourable to the maintenance of hierarchical authority relationships. As well, given the heavier emphasis on religion in the Catholic school system (Melchert, 1976), Catholic students might be expected to be more religious than their Integrated counterparts.

The Study

A written questionnaire was administered to Level III (grade 12) students at the two major high schools serving the Corner Brook area during a class period. Telephone interviews were subsequently conducted with the mothers and fathers of students who completed questionnaires.

As the questionnaire was designed for a broader study of political socialization (Mintz, 1990), questions were not designed specifically to test the effects of the denominational system. Rather, in addition to questions designed to tap the basic attitudes of students towards the political system and to determine the extent to which young adults gave priority to "postmaterialist" rather than "materialist" values (Inglehart, 1977), most questions concerned contemporary issues which would likely be of interest or concern to young adults. To analyze the substantial number of questions asked, responses on related topics have been combined in simple additive scales.

Table 1
Differences by School

Indexes (Possible Range of Scores)	Roman Catholic School	Integrated School
Environmentalism (4-16)	11.7	12.0
Civil Liberties (4-14)	9.4	9.2
Feminism (4-16)	12.2	12.3
Postmaterialism (4-8)	6.5	6.4
Competitive Economy (3-8)	4.7	4.9
Gov't Provision of Welfare (3-12)	8.0	7.8
Tolerance (4-16)	11.3	10.9
Political Efficacy (4-16)	10.0	9.9
Political Trust (4-14)	9.7**	8.9**
Political Participation (6-12)	9.4	9.1
Democracy (3-10)	8.0	8.1
* difference significant at .05 level		
**difference significant at .01 level 1.7		

Note: Higher scores indicate greater support for index values. See Appendix for index composition.

As Table 1 indicates, differences between students at the two schools were small. Only the greater level of political trust exhibited by students at the Catholic school could be considered significant. Similarly, on most of the eighty specific questions, differences in the distribution of responses between students at the two schools were small.

Focusing on issues of morality and sexuality, it was only on the abortion question that expected differences were evident: 38% of students at the Catholic school compared to 55% of students at the Integrated school felt that abortion "should be available to a woman if she chooses to have one" (44% of Catholic school students and 38% of Integrated students felt that abortion should be "legal only in some exceptional

circumstances"; 19% and 6% respectively feeling it should be illegal). There was little difference between students at the two schools on the question of whether birth control information should be presented in school with only 3% of Roman Catholic school students (R.C.) and 1% of the Integrated school students (I.) feeling such information should not be presented. Students at the Catholic school were slightly more likely to agree that "movies showing explicit sexual acts should be allowed" (73% R.C., 60% I.), while 44% of students at each school agreed that "homosexual activity should be made illegal".

In terms of questions concerning the role of women and the nature of the family, students at the R.C. (84%) and Integrated (91%) schools were overwhelmingly inclined to disagree with the statement that "women should be encouraged to stay at home to raise their children" with the majority of R.C. students strongly disagreeing. R.C. students were slightly more likely than Integrated students to be in agreement that "governments should pay most of the costs of child care for working mothers (64% R.C., 54% I.). Extremely few at either school agreed that unmarried women who have children should not receive welfare payments from government (6% R.C., 5% I.). Majorities at each school supported affirmative action programs for women in the workplace (70% R.C.; 75% I.) and in admissions to university programs (59% R.C.; 59% I.).

Although R.C. students tended to have a higher level of trust in political authority, they were slightly less likely than Integrated students to agree that "Teachers should be able to discipline students as they see fit to maintain order in the classroom" (24% R.C.; 38% I.).

The findings were mixed concerning helping to improve the economic position of the poor. A larger majority of students at the R.C. school than at the Integrated school agreed that "the Canadian government should be generous in providing aid to the poorer countries of the world" (77% R.C.; 60% I.). Students at the Integrated school, however, were slightly more likely to agree that "those with high incomes should be heavily taxed so as to reduce the differences between rich and poor (31% R.C.; 40% I.).

Finally, students at the R.C. school were not much more religious than their Integrated counterparts. Only 4% of students at the R.C. school and 3% of those at the Integrated school considered themselves "very religious" with an additional 48% of R.C. students considering themselves "somewhat religious" compared to 41% of Integrated students. Despite this limited difference in religiosity, students at the R.C. school (58%) were more likely than students at the Integrated school (35%) to favour the retention of a denominational school system.

It might be argued that the interdenominational differences were greater among those who grew up in an earlier era when religion generally played a greater social role, interdenominational contact was less frequent, and secularizing influences such as television were less important. However, the parents of Level III students at the two Corner Brook schools generally differed little in their attitudes. Of the scales presented in Table 1 above, only the political trust scale significantly differentiated the parents of students attending the two schools with the parents of the R.C. school students resembling their offspring in being more trusting of government than parents of the Integrated school students. Parents of those in the R.C. school were more likely to feel that abortion should be illegal (24%) than parents of those in the Integrated school (8%), more likely to support the retention of the denominational school system (46% vs. 26%), and more likely to identify with the PC party (37% vs. 14% in Newfoundland politics and

30% vs. 13% in Canadian politics). Other differences between the two sets of parents were minimal.

Conclusion

Students at the Roman Catholic high school were not significantly less materialist, less oriented to a competitive economy, more favourable to assisting the poor and disadvantaged, less libertarian (except on the highly charged issue of abortion), more traditional regarding the family and the role of women, or more religious than students at the Integrated school. Only in terms of a greater acceptance of authority (as measured by higher levels of political trust but not in terms of teachers' disciplinary authority) were hypothesized differences found.

Without further evidence, we cannot be certain that the results of this study of attitudes of high school students in Corner Brook are representative of the province as a whole. In particular, it may well be that the attitudes of those attending Pentecostal or Seventh Day Adventist school differ from those attending the more "mainstream" school systems. As well, it is possible that there are attitudes and values not measured in this study that do differentiate students in different denominations. In particular, this study focused on attitudes and values likely to affect the social and political behaviour of young adults rather than focusing on their intrinsic religious orientations (Melchert, 1976). Nevertheless, it is striking that in a province where religious differences have deep roots which could potentially be reinforced by a denominationally-based education system, little evidence of differences among young adults could be uncovered over a wide range of questions.

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APPENDIX: QUESTIONS USED IN INDEX CONSTRUCTION**Environmentalism**

1. Offshore oil developments, such as Hibernia, should not proceed if there is a risk to the marine environment.
- *2. Large economic projects that could create employment opportunities should be allowed to proceed even if they might endanger some rare plants or animals.
3. People should be encouraged to have fewer children so that there is room for all types of plant and animal life on earth.
- *4. The paper mill in Corner Brook should not be forced to reduce its pollution because the mill is the backbone of this area's economy.

Civil Liberties

- *1. The police should be able to wiretap the telephones of persons holding extremist ideas.
- *2. Homosexual activity should be made illegal.
- *3. Persons holding communist beliefs should not be permitted to teach in our schools.
4. Do you think that the use of marijuana should be legal or illegal?

Feminism

1. Employers should be required to hire more women for good jobs.
- *2. Women should be encouraged to stay at home to raise their children.
3. Universities should be required to reserve one-half of the places for women in programs such as engineering and science to ensure that there will be more women in such professions in the future.
- *4. If a business has to lay off some workers, the first to be laid off should be women whose husbands have jobs.

Postmaterialism [Second options scored as postmaterialist]

1. Over the next ten years, do you think that it is more important for our society to have a high rate of economic growth or to clean up our natural environment?
2.to ensure that order is maintained in our society or to encourage all people to have a say on controversial issues?
3.to create an economy that is internationally competitive or to ensure that all persons in our society are treated equally?
4.to fight crime or to develop our culture?

Competitive Economy

1. Our economy should be made more efficient even if this means laying off some workers.
2. Do you think that government should try to assist businesses that are facing difficulties or do you think that government should not assist uncompetitive businesses?
3. Because of the problems in the Newfoundland fishery, do you think that the government should encourage fisherman to find other types of employment or do you think that the government should help fishermen to keep their jobs?

Government Provision of Welfare

- *1. Young persons who are able to work should not receive welfare payments from government.
2. Governments should pay most of the costs of child care for working mothers.
- *3. Unmarried women who have children should not receive welfare payments from government.

Tolerance

1. All students across Canada should learn both English and French.
2. French-Canadian children should be able to receive an education in French anywhere in Canada if at all possible.
- *3. The Canadian government should operate primarily in English.
4. Special efforts should be made to protect the French language in Canada.

Political Efficacy

- *1. There's not much that ordinary citizens can do to affect what governments are doing.
- *2. Generally, those elected to Parliament soon lose touch with the people.
- *3. Sometimes politics and government seems so complicated that a person like me can't really understand what's going on.
- *4. Governments do not seem to care what ordinary citizens think.

Political Trust

- *1. Many people in government are dishonest.
- 2. Most of the people running government are smart people who usually know what they are doing.
- 3. Generally speaking, would you say that you have a great deal of confidence, some confidence, or almost no confidence in the ability of the Canadian government to do what's right?
- 4.the Newfoundland government ... ?

Political Participation

Imagine that the Canadian government was doing something that you strongly disagreed with. Do you think that you would engage in any of the following activities?

- 1. Sign a petition.
- 2. Call your member of parliament.
- 3. Participate in a protest march.
- 4. Organize others to vote against the government in the next election.
- 5. Join with others in occupying government offices.
- 6. Join with others in refusing to pay taxes.

Democracy

- *1. Governments should be able to make major decisions without having to have widespread public discussion of the issue.
- 2. All citizens should involve themselves in the discussion of political issues.
- 3. When developing its policies, do you think that governments should pay the most attention to the opinions of average citizens or to the opinions of experts?

NOTE:

For position statements, "strongly agree" scored 4; "agree", 3; "disagree", 2; "strongly disagree", 1; starred items scored in reverse order. Those responding "don't know" or not giving a response to any item were excluded from the calculation of that scale.

NOTES

1. This point was made in several briefs and comments by Roman Catholic school administrators to the (Newfoundland) Royal Commission of Inquiry on Education, 1990-91.
2. Questionnaires were administered in all Level III classes at the Integrated school on May 15 and 16, 1990 (N=162) and in four of the five Level III classes at the Roman Catholic school on June 1 and June 4, 1990 (N=89). According to the Principal of the latter school, the five classes did not differ in their academic or social characteristics. No attempt was made to administer questionnaires to students absent from class. In all, approximately 65% of all Level III students at the two schools filled out questionnaires. In terms of parental occupations, the social characteristics of the two groups of students were almost identical. However, the Roman Catholic sample contains a higher proportion of males (59%) than the Integrated sample (45%). 91% of those attending the R.C. school stated that their religious affiliation was Catholic (6% Protestant; 3% no affiliation). 82% of those attending the Integrated school stated their affiliation as one of the integrated faiths (Anglican, United Church, or Salvation Army), 6% were Pentecostal, 4% Catholic, and 8% other or none.
3. Technically, a test of significance is not appropriate when comparing what are basically populations rather than samples. It could, however, be stated that the degree of association between school and indexes is so weak as to be trivial or meaningless except in the case of the modest relationship for political trust.
4. Those responding "don't know" and those not answering the question (in this case, 5 of the 251 respondents) have been excluded from the calculation of percentages.
5. The following results should be treated with caution as no question specifically identified the schools attended by the parental group. However, given a fairly low of migration to the Corner Brook area from those raised out of the province, it is reasonable to assume that most parents were educated in the same denominational system as their children.
6. The findings are consistent with a study which found that Anglican university students who had attended Anglican schools in Newfoundland did not differ significantly in religious attitudes from Anglican students who had attended Amalgamated or United Church schools (Cooper, 1975; Cooper, 1976).

ACHIEVING EFFECTIVE CONFLICT MANAGEMENT

**Dennis L. Treslan
Faculty of Education
Winter 1993**

The ability to successfully minimize and resolve conflict is an important skill for school administrators to develop. A major reason for this is that administrators are faced with the classic confrontation between individual needs and organizational needs, requiring them to spend a major part of their time attempting conflict mediation. The "appropriate" management strategy in a given situation requires accurate identification of both the conflict origin and participants, and their relationships, in order to apply the most effective resolution technique. Ideally, this technique must reduce the dysfunctional dimension of conflict so as to capitalize on its functionality for the good of all concerned. Since conflict is inevitable in schools, administrators must be prepared to deal with it, not necessarily from the point of view of elimination, but rather to derive the greatest possible benefits therefrom. Consequently, conflict anticipation and detection should always constitute the first two phases of good conflict management. That is, proaction rather than reaction should be the motto!

To this end, effective conflict management should reflect the advice offered by Mary Parker Follett some sixty years ago. She argued that one ought not to conceive conflict as a wasteful outbreak of incompatibilities, but a normal process whereby socially valuable differences register themselves for the enrichment for all concerned. Three methods were advanced for dealing with conflict of which only integration was strongly advocated. These included: domination, whereby there is a victory of one side over the other (a win-lose situation); compromise, whereby each side gives up something in the process (a lose-lose situation); and integration, whereby each side refocuses their efforts so that neither side loses anything and in fact each gains (a win-win situation).

Clearly, Follett believed that domination should be avoided at all costs. Although application of this strategy requires little effort on the part of the administrator, the long term side effects can be devastating. Compromise carries with it the assumption that both parties will be happy because each will gain something, but each loses something as well and this in turn creates the potential for further conflict. Integration was favoured simply because if both parties can become satisfied there will remain no issue or problem - obviously an ideal situation not easily attained.

Strategies for conflict resolution will also vary according to the different philosophical bases of those involved. Generally, these bases encompass the win-lose, lose-lose and win-win approaches to conflict resolution.

Win-lose is too often overused as a strategy for solving conflicts. Whereas these methods include the use of mental or physical power to bring about compliance, a lose-lose approach will also leave no one entirely happy. Compromise, side payments and submission of the issue to a neutral third party, as in the arbitration procedure, constitute examples of this latter approach. Arbitration resolves issues at some middle-ground between the positions held by the disputants such that while each disputant gains something the outcome is rarely satisfying to either side. The win-win approach is now becoming more popular although it is still misunderstood by many administrators. This method yields solutions satisfactory to all in that each party to the conflict wins

something, and the conflict is therefore resolved constructively. It could be suggested that important conflicts tend to be best managed with positive-sum (win-win) strategies, while more trivial issues merit no more than zero-sum (win-lose/lose-lose) strategies, with most situations calling for mixed modes (no win-no lose).

An important point must be borne in mind when attempting to deal effectively with organizational conflict, namely, that any one method will not apply to all situations or all personalities. Given the various approaches to conflict management currently in existence, a major question becomes "Which approach is best?" While it appears that the integrated (collaborative) procedure has the most to offer, each of the other approaches can also be effective in selected circumstances. Perhaps in our pursuit of conflict management strategies we would be well advised to heed the warning given by Bailey (1971): "Any administrator who assumes that he can use the same technique or style in resolving conflicts that emanate respectively from subordinate conflicts, superordinate conflicts and lateral conflicts is either a genius or a fool" (p. 234).

In general, it can be concluded that conflict has been effectively managed when it no longer interferes with the ongoing activities of those involved. Conflict management is therefore the process of removing cognitive barriers to agreement (Greenhalgh, 1986). Depending on the situation, conflict management techniques often focus on changing structure, changing process or both. Sometimes structural modifications are not very creative, and the response to conflict is simply more rules and hardening of the role structure. Such efforts can improve the situation outwardly but without consequences, for as Sanford (1964) states: "the hardening of the role structure which is an organization's best defence against the inroads of individual irrationality gives equal protection against failing and against success" (p. 100).

Hanson (1991) suggests administrator awareness of the various tactics of conflict management. Naturally the tactics selected will depend on the force driving the conflict. One of the most common forces is scarce resources. Effective management of scarce resources and the ability to **expand the resource base** whenever possible are important to management. Establishing an **appeals system** which provides the right of formal redress to a superior in the organization is also an excellent means of treating conflict associated with disputes at lower hierarchical levels. To cope with the bureaucratic constraints of the hierarchy or perceived favouritism, some institutions have adopted an ombudsman approach.

Occasionally the most appropriate tactic involves changing **the degree of interaction** between conflicting parties. If the basis of conflict is lack of trust or suspicion of motives, an effective approach is to bring the parties together and let them get to know each other. However, if the conflict is rooted in differences in principle, increased interaction could exacerbate the situation. Too, **modifying the reward system** can be effective if inequity in extrinsic or intrinsic rewards is the cause of conflict. Whenever possible, eliminate zero-sum rewards, reward performance as well as rank, and establish evaluations that reward preventive contributions rather than success in finding errors.

When units such as departments, programmes, etc. are in conflict because of struggles for policy control or resources, they are usually operating in their own self-interests. In these instances, **mergers** should be considered, since this modification creates a struggle for the common good. There may also be occasions when breaking up a unit facilitates smoother working relationships.

To decrease task ambiguity, various **role clarification** procedures can be used. This involves gathering those people who interact with a particular role and defining through dialogue and debate their responsibilities and duties. A neutral **third party** can also help establish the confidence, atmosphere of good will, and emotional support to bring a degree of otherwise missing rationality to the decision making process.

Finally, for the good of order, an administrator can occasionally attempt to redirect the tensions and conflictive behaviours towards himself/herself as a means of clearing the atmosphere and enabling more productive actions to take place at lower levels. Being a **conflict sponge** is not easy, since the process merely redirects the heat in the direction of the administrator.

There is no shortage of proposed approaches for managing conflict in an organizational setting. These approaches are often portrayed on a continuum with **flight** ("I'm catching the first bus out of town!") and **fight** ("Fire the trouble maker!") at the extremes. Obviously neither extreme is satisfactory since a win-lose orientation to conflict is present, characterized by the fact that contesting parties view their interests to be mutually exclusive. Hence, parties to the conflict come to believe that the issue can be settled in only one of three ways: (1) a power struggle, (2) intervention by a third party who possesses some sort of power greater than either of them, or (3) fate. Clearly, an effective approach to conflict management commonly referred to as the contingency approach lies somewhere between these extremes.

This approach to conflict management is predicated upon the idea that diagnosis of the situation is necessary as a basis of action. The contingency view is that there is not one best way of managing conflict under all conditions, but that there are optimal ways of managing it under certain conditions (Owens, 1987). An important aspect of conflict management, then, is to consider (a) alternative ways of managing conflict and (b) the kinds of situations in which each of these various alternatives might be expected to be the most effective.

Thomas (1976) provides what might be considered one of the most useful models of conflict management utilizing the contingency approach to conflict diagnosis. This typology examines five styles of conflict management. Two basic dimensions of behaviour that can produce conflict are identified: attempting to satisfy one's own concerns (organizational demands in the case of administrators) and attempting to satisfy others' concerns (individual needs of the members). From this analysis, five major perspectives are identified which may be used in conceptualizing conflict and behaviours commonly associated with those perspectives. These perspectives/management styles are identified as avoidance, compromise/sharing, competition/ domination, accommodation and collaboration/integration.

Avoidance is often a form of flight suggesting indifference, evasion, withdrawal, or isolation. Being unassertive and uncooperative can also represent a delay tactic. **Compromise/sharing** involves splitting the difference or giving up something to get something. **Competition/domination** frequently means a desire to win at the other's expense. It is a win-lose power struggle where the opinions and interests of others are of little concern. **Accommodation** can be an appeasement or submission to others at your own expense. On occasion it can represent generosity, while at other times it might mean conserving energy and resources by giving up a few battles in order to win the war. Finally, **collaboration/integration** represents a desire to fully satisfy the

interests of both parties. It is a mutually beneficial stance based on trust and problem solving.

Thomas (1976) proposes that each of the five management styles identified may be effective depending on the situation. In fact, he matches the five conflict management styles with the appropriate situation as follows:

Avoidance

- When the issue is trivial
- When the costs outweigh the benefits of resolution
- To let the situation cool down
- When getting more information is imperative
- When others can solve the problem more effectively
- When the problem is a symptom rather than a cause

Compromise/sharing

- When the objectives are important, but not worth the effort or potential disruption likely to result from assertive behaviour
- When there is a "standoff"
- To gain temporary settlements to complex problems
- To expedite action when time is important
- When collaboration or competition fails

Competition/domination

- When quick, decisive action is essential, as in emergencies
- When critical issues require unpopular action, as in cost cutting
- When issues are vital to the welfare of the organization
- Against individuals who take unfair advantage of others

Accommodation

- When you find you have made a mistake
- When the issues are more important to others
- To build good will for more important matters
- To minimize losses when defeat is inevitable
- When harmony and stability are particularly important
- To allow subordinates a chance to learn from their mistakes

Collaboration/integration

- When both sets of concerns are so important that only an integrative solution is acceptable; compromise is unsatisfactory
- When the goal is to learn
- To integrate insights from individuals with different perspectives
- When consensus and commitment are important
- To break through ill feelings that have hindered relationships (pp. 101, 102).

Conclusion

In conclusion, it should be noted that conflict is a reality that crosses all organizational boundaries to affect individuals, groups and disciplines. It can initiate productive change and vitality or it can lead to the demise of an organization. The resultant consequence of conflict will inevitably be determined by how well it was managed.

It has been demonstrated that conflict is inevitable within our schools. In order to manage it as a creative resource, administrators must recognize that conflict exists, and bring it out into the open so that the issue can be effectively dealt with. Understanding conflict will enable administrators to deal more effectively with the problems of organizational efficiency, stability, governance, change and effectiveness. Not only should administrators endeavour to understand conflict, but they must also be careful not to fall into the trap of viewing it from a negative perspective. Handled properly through an appropriate conflict management style, conflict can enhance an administrators efforts in reaching school goals. For administrators who realistically confront it, conflict can represent a dynamic force which facilitates organizational growth, change, adaptation and survival. Perhaps this positive perspective on conflict can best be summed up in the words of Mary Parker Follett when she said: "it is to be hoped that ... we shall always have conflict, the kind which leads to invention, to the emergence of new values" (p. 2).

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**FACULTY OF EDUCATION'S PRELIMINARY RESPONSE
TO CHANGE AND CHALLENGE AND OUR
CHILDREN/OUR FUTURE REPORTS**

**Patricia Canning
Associate Dean
Faculty of Education
Winter 1993**

The annual Faculty Retreat, the third held since the restructuring of the Faculty in 1990, took place on September 3, 1992. The previous two retreats addressed changes, improvements and plans for the Faculty of Education, many of which had resulted from **Focusing Our Future, the Report of the Presidential Committee to Review Teacher Education in Newfoundland and Labrador** (1988), commonly referred to as the Hardy Report. Change was once again the main topic of discussion. The numerous changes proposed in two major provincial reports published earlier this year provided the focus of this year's discussions (i.e. **Change and Challenge: A Strategic Economic Plan for Newfoundland and Labrador** and **Our Children Our Future the Report of the Royal Commission of Inquiry into the Delivery of Programs and Services in Primary, Elementary, Secondary Education**).

The faculty were welcomed by Dr. Crocker, Dean of the Faculty of Education. Faculty member Dr. Clar Doyle was the chairperson of the day's activities.

Mr. Cyril McCormick, Deputy Minister of Education, represented the Minister, the Hon. Chris Decker, and spoke on the recent provincial government report **Change and Challenge**. Mr. McCormick outlined briefly the major recommendations of the report and the general implications of these recommendations for the Faculty of Education. What seems to be the message is that major changes to the education system are necessary if Newfoundland is to survive its current economic crisis and adjust to the demands of a global economy. More coordination and collaboration is needed between educators and other community members, particularly those of the business sector. Partnerships are seen as essential to the economic viability of this province. More importantly for educators, it appears that they must respond to what the business sector considers to be the skills and methods necessary to educate for the future.

Dr. Len Williams, member of the Faculty of Education and Chairperson of the Royal Commission of Inquiry into the Delivery of Programs and Services in Primary, Elementary and Secondary Education, spoke on the Commission's Report.

Dr. Williams introduced the Report by outlining the procedures that the Commission followed in order to get as complete and accurate a picture as possible of the current educational system in the province and to make appropriate recommendations for improving it. The process utilized by the commission was a highly consultative one. It involved, for example, 36 public hearings in 29 different centres throughout the province, the participation of literally thousands in surveys, discussions, and the preparation and presentations of submissions. There was a total 1041 submissions from 173 communities representing all areas of the province. A significant number of the background research papers had been prepared by members of the

Faculty of Education. The Commission's approach provides an excellent example of the kind of consultation recommended throughout the report.

The Commission's Report recommends substantial changes to the provincial educational system in order to meet current and future needs. The extent of the change recommended is indicated in the following quote taken from the Summary Report:

... the development of a new mandate for schooling; the restructuring of the system's administration at the provincial, school district and school levels and the establishment of non-denominational school boards in place of the present system; the full involvement and enfranchisement of the public in the governance of the system; the development of attainment standards for students; the refinement of the process of curriculum development and implementation; and the improvement of existing practices at every level of the school system.
(p. 2)

Clearly, change of such magnitude will have many major implications for the only teacher education faculty in the province.

Time was set aside after the presentations for questions and comments by the Faculty. The faculty then met in small groups to discuss in greater detail what the speakers had said and to examine further the specific implications for the Faculty of the reports, **Change and Challenge** and **Our Children Our Future**. Subsequent to the discussions, the groups submitted brief reports which indicated a number of areas of particular interest and/or concern such as professional development, the proposed "university" schools, teaching and research, and collaboration between the Faculty and other educational agencies. As in any preliminary discussion of this nature, more questions and concerns than answers were generated.

Faculty expressed general concern over what appears to be an implicit assumption in these reports, especially in **Change and Challenge**; that is, the assumption that the current economic situation in which that the province finds itself is somehow a result of the education system. Is education really to be seen as the answer to our economic woes? We seem to believe that if we simply educate the people of, for example, Gaultois, our problems will be solved. What concerns the faculty is the narrow utilitarian approach to education which might be expected to follow such an attitude. Is education to be dictated by what the business community sees as its needs? Such an approach to education will not educate people to meet as yet undefined future needs. Such a narrow approach will ignore the humanities as well as many other needs of children and youth.

These reports have come at a time when major changes have been made and others are being planned in the Faculty of Education. Some of the reports' proposed changes and/or additions to the Faculty's programmes have been addressed already as a result of our recent restructuring. For example, the strategic economic plan includes the establishment of a centre of expertise for training teachers for rural and small schools. A number of the recommendations of the Royal Commission's Report also address the need for a such a centre and the need for improvements to both the preparation of teachers for rural areas and multi-graded classrooms and the curriculum offered in such environments. In this regard, a number of faculty members have recently been addressing the particular needs of teachers and students in rural areas and have been working cooperatively with teachers and other school board personnel

to develop solutions in a collaborative way. At the time of the Faculty Retreat, the Faculty had submitted to the Minister of Education for preliminary discussion a proposal for the establishment of a Centre of Expertise in Small Schools and Rural Education. The proposed centre is based on a collaborative model actively involving members of the Faculty of Education, the Department of Education, school boards and most importantly, the direct involvement of the teachers themselves. Such a model of collaboration is essential and is also a theme throughout both reports.

During the 1991-92 academic year, the Faculty established the Centre for Field Services and appointed a faculty member as its director. It is hoped that this will enable the faculty to contribute in a significant way to the many recommendations regarding the professional development of teachers throughout the province. Individual faculty have always been involved in professional development of teachers in the field. This Centre will facilitate more coordination and collaboration with other agencies and will take an active role with the other educational agencies in developing the Professional Development Centre proposed in the reports.

The Faculty is currently undertaking a follow-up survey of graduates to determine employment patterns and teacher preparation needs. As recommended in the Royal Commission's Report, such a survey will be conducted periodically in order to keep abreast of the ever changing needs of the school system and the teaching profession.

A new secondary education programme has been approved by the Faculty and is pending approval of the Senate. It will be a post-degree programme only. All those planning to become secondary school teachers will have to have completed a first degree before being accepted into the Bachelor of Education programme. To help ensure that more teachers are prepared in the teaching subjects, an additional requirement for applicants to the Faculty will be that they have at least 12 courses in one teachable subject and 8 in a second teachable subject.

One of the recommendations of the Commission's Report was the establishment of an External Advisory Board to the Faculty of Education. This board had been set up in 1991 in response to a similar recommendation made in the Hardy Report. This board represents teachers, school trustees, district superintendents, the Department of Education, the Newfoundland Teachers' Association, the Denominational Education Councils and Home and School Associations. It meets on a regular basis to discuss current issues, review proposed programme changes, and develop methods to facilitate collaboration between the Faculty of Education and the other educational agencies.

These are but a few of the examples of changes being made in the Faculty of Education. This coming year, further improvements to the preparation of those in the teaching profession will be made with the revisions of graduate programmes resulting from a very extensive and thorough review of all graduate programmes completed during the last academic year. Two undergraduate programmes, Learning Resources and Special Education, are now being reviewed by an internal committee to be followed by an external review.

It is clear that there are many issues and concerns raised by the Commission that are very important for the Faculty of Education and a number of those have already been addressed by the Faculty. The Faculty must continue to improve and increase collaboration with teachers and educational agencies and be prepared to respond more

quickly than it has in the past if the province's educational system is to meet the needs of its students.

**THE ARGUMENTS FOR NON-DENOMINATIONAL
SCHOOLS: A CRITIQUE**

**Lloyd Brown
Faculty of Education
Winter 1993**

While there is much in *Our Children Our Future* to be admired, it does have its weaknesses. For example, I find its arguments against the denominational system and for the nondenominational one to be frequently unsound and unconvincing. The purpose of this brief paper is to examine some of these arguments.

First, I question the basic assumption of the Report that a unified system is at the apex of educational evolutionary development. In its Preface the Report describes the Constitutional guarantees of denominational schools as effecting paralysis in the system and stifling its ability to respond to change (p. xvi). It then concludes, "the next step in our evolutionary development must come, and we must ensure that it is towards the creation of a comprehensive, unified... administrative structure" (p. xvii). But as I look around me I see no evidence to suggest that homogeneity in education is the goal toward which Canadian society is struggling, or is the educational end of its striving. In fact, there is evidence to show that the Canadian public is asking for a variety of schools to preserve and foster diversity. Holmes (1991) sums up this trend:

The spirit of cultural and structural pluralism is... alive and well in Canadian educational policy as the following trends clearly demonstrate:

- (a) the growth Of Private schools in urban, industrial Canada;
- (b) recognition of independent schools in the form of provincial funding in British Columbia, Alberta, Quebec and Saskatchewan;
- (c) limited recognition of fully funded but largely independent schools in Calgary and Edmonton;
- (d) de jure and de facto conversion of Ontario's education system into a full dual (public secular/Roman Catholic) system (p. 94).

In the context of this pluralism it does not seem unusual for the provincial and federal governments to provide a French school in Mainland, on the Port au Port Peninsula and another in St. John's, to make provision for an Innu school in Labrador, and to support a micmac school in Conne River, all for the purpose of preserving and fostering French and aboriginal language and culture. It seems ironic, then, that at a time when we are beginning to celebrate diversity, the Royal Commission Report recommends the elimination of any diversity in education based on religious convictions. There seems to be much more tolerance of division by language and culture than there is of division by religious beliefs. But, it needs to be pointed out, one's religious beliefs, and the habits, conventions, rituals, symbols, and celebrations that grow out of them, are a fundamental part of the culture of Christian denominations and need to be taken as seriously as we take the culture of minorities.

Given the context described above, I find it peculiar that the Commissioners argue that the non-denominational system is one that accommodates "the changing

nature of society" (p. 220). If by changing nature of society the Commissioners mean, as they seem to, that society is becoming more diverse and pluralistic, it is difficult to see how a non-denominational system better accommodates, this diversity. First, it, by definition, eliminates the diversity of the denominations by homogenizing the system. Second, it can only accommodate the diversity of other beliefs and religious convictions by ceasing to be a system based on the Christian tradition. That is, this system would, as it tried to accommodate diversity, retreat further and further from the Christian culture. Denominationalists are, I think, afraid that this retreat from Christian culture will be a forced retreat as they lose control of education. The experiences in other parts of the country give them cause to worry. For example, in 1988 the Supreme Court of Ontario ruled that religious exercises prescribed for the opening or closing of the schools of the Respondent School Board were an infringement on the freedom of religion and conscience guaranteed by the Charter of Rights and Freedoms. Similarly, in 1988 in British Columbia the Supreme Court ruled the School Act, requiring schools to be opened by Bible readings and the Lord's Prayer, to be constitutionally invalid. In 1990 the Supreme Court of Ontario ruled that religious education courses in the elementary schools of Elgin County (a county whose population, according to 1981 census, is 90% of Christian background), were indoctrination, although they contained stories from other world religions, and, therefore, infringed the Canadian Charter of Rights and Freedoms.

It seems to me that if we are to provide for and foster diversity in society we must provide for diversity in schools. This is what is being done in some parts of Canada and in some other countries. For example, in Holland parents may form their own school if they have a minimum of 25 students. The same policy exists in New Zealand (Lawton, 1990). The Sullivan Report on education in British Columbia also accepts the notion of diversity in schooling. The commissioners state that as long as schools meet certain requirements, "our wish is to encourage choice and diversity, both within and outside the public school system" (p. 56). We boast that, unlike the melting pot American culture, ours is a mosaic. I think that melting pot schools, as suggested by the writers of Our Children Our Future, are not the most appropriate kind to serve and foster a mosaic culture.

It also seems to me contradictory for the Commissioners to argue that we should eliminate denominational schools in order to protect "the general rights of individuals" (p. 220). If, for example, we "eliminate" the schools of Pentecostals and Roman Catholics, the majority of whom support the status quo, (p. 80) won't we be undermining their right to provide the kind of education they want for their children? I don't think we can argue for the elimination of denominational schools on the basis of protecting individual rights, for the very establishment of a non-denominational system implies that the majority of the adherents of the two denominations mentioned would have to abrogate their rights in deference to the rights of the minority.

The Commissioners have indicated that they rejected the denominational system because the majority of Newfoundlanders rejected it (p. 219). Whether or not the majority really did reject the present system is not at all clear, given the apparent contradictions and anomalies in the responses to their questionnaire. However, even if we accept the Commissioners' interpretation of the results, there is still a problem in using these figures to support their rejection of the denominational system. The problem arises with the Commissioners' use of the whole province as its constituency. It is my view that the constituency should not be the entire province but the denominations, whose authority will be lost in a non-denominational system, and whose adherents will lose the right to choose the kinds of school they want for their children, a right which the commissioners seem to support. We have provided schools for other

groups - Micmac, Innu, French because we accept the principle of cultural diversity, and, it should be added, without feeling it necessary to get the opinions of the whole province on the issue. For the same reason we should support the wishes of those denominations whose adherents want to maintain the status quo. To do otherwise is to be guilty of discrimination and to contravene the principle of cultural and religious pluralism.

Finally, I find the commissioners' argument that "the direction of the future must be towards a system (non-denominational) which embodies tolerance and openness" (p. 227) to be weak. First, the underlying assumption of the argument is that a denominational system embodies intolerance and narrow-mindedness. There is no discussion of this point and no evidence to support it. Second, tolerance and openness are regarded here as independent values. They are not. In other words, we can only accept tolerance as desirable when we know and agree with what is being asserted as worthy of our tolerance. The Commissioners, for example, say that the school system they recommend should provide 'a school environment which reflects Christian principles" (p. 227). However, if a non-denominational school insisted on these principles, it could be said to be intolerant of non-Christian principles if they conflicted; and if it wanted to be known as a school that is tolerant and open, it would have to abandon them. The fact is that a school system is informed by a core set of values, which means that it cannot be tolerant of everything. For example, Roman Catholic schools cannot be tolerant of abortion on demand because such a position is subversive of a core Roman Catholic value. To be tolerant of it would be offensive to them, as offensive to them as the prohibition of abortion is to pro-choice groups. In their denominational schools Roman Catholics are free to express intolerance towards abortion. Would they be free to do so in non-denominational schools? Or would such schools be paradoxically, intolerant of this core value? If the answer is no, the principle of tolerance will have been undermined and a significant group of parents will feel unhappy that schools do not reflect their core values. If the answer is yes, because this value is only one among the many values that must be accommodated, schools can be accused of supporting the relativity of moral values and even more parents become dissatisfied. The point is that although we usually presume tolerance to be a good thing, the presumption is not always absolute and is usually overridden when we are asked to be tolerant of those values which conflict with and are inimical to our core values. In other words, tolerance can only be an independent value if it doesn't matter what we are tolerant of, if, that is, everything is tolerated.

This paper has argued that there are flaws in some of the Report's arguments for non-denominational schools. Specifically, it has attempted to show that the Commissioners were wrong to assume the non-denominational system to be at the apex of some educational evolutionary development. It also argues that this system is not better than the denominational system in accommodating diversity and pluralism, and in protecting the rights of individuals. Further, it points out that in using the whole province as a constituency (when analysing the results of their questionnaires), instead of each denomination, the Commissioners have, in their conclusions, ignored the wishes of the adherents of two denominations (Pentecostal and Roman Catholic) although the majority of them supported the status quo. Finally, it takes issue with the Commissioners' argument for non-denominational schools on the basis of tolerance and openness.

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EQUITY AND EFFICIENCY IN EDUCATIONAL FINANCE: AN OPERATIONAL CONUNDRUM

**S. McGrath
Department of Education
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Introduction

The main purpose of this paper is to present a framework against which the concepts of equity and efficiency can be discussed. These terms appear to be topical "buzzwords" (usually under the cloak of equality and accountability) among educators who manage school systems on the one hand, and officials in central government bureaucracies on the other, whose ubiquitous task it is to rationalize the expenditures of public funds. It is not apparent, however, that the same meanings are given to the terms whenever they are used or that members of an audience have the same understanding of them or can even distinguish between them. This paper attempts to clarify the definitional problem by discussing the terms in relation to education generally and in the context of educational finance specifically. The discussion concludes with an integration of the concepts centered on the question of whether they are mutually exclusive notions or whether a degree of operational compatibility exists between them. Several implications for teachers and educational administrators are highlighted.

Definitions

Equity and efficiency are terms that contain both a philosophical and an operational component. In the broader social context, equity refers to equality of opportunity, fairness, and social justice. In the context of educational finance, equity is a dual funding principle which acts as a means of ensuring that as much equality as possible is built into the provision of educational services and as much fairness as is administratively feasible is applied to sharing the taxation burden for education among the general citizenry. Efficiency is often integrated into the more popular term of accountability which measures outputs. There, efficiency is related to cost-benefits, cost-effectiveness, and cost-utility in terms of both inputs and outputs.

Equity

Equity is a social term rather than an economic one and is defined in relation to inequities or inequalities in the distribution of wealth or resources, and the adjustments which are required to allow for more equitable redistribution. Brown (1981) succinctly explained the issue. In areas where low levels of income exist, citizens have to be taxed more heavily in order to provide a standard of public services similar to that available in wealthier communities where the tax burden is lighter. Such an imbalance is considered unfair in terms of the current climate of social justice, necessitating a redistribution of tax revenues (p. 16). Redistribution permits equal treatment of equals in terms of access to the benefits of public spending which Brown referred to as one of the most universally accepted rules in public finance (p. 41). The rule is contrary to the benefit principle of public taxation which extends from the commercial principle that people should pay for goods and services according to the amount they use.

In public education, inequalities in the distribution of wealth exist within school districts and between districts, resulting in an imbalance in access to benefits. In this context, the benefits refer to educational opportunity. To apply the benefits received principle described above to the financing of public education would not be regarded as equitable in modern society because too much of a tax burden would be placed on people with low ability to pay, e.g., large families and low income families (Brown, 1982, p. 43). To adjust for these imbalances in fiscal capacity and taxation burdens, and in order to facilitate equalized educational opportunity, the concept of financial equalization in educational finance is observed.

Financial equalization underlies the concept of equity in education. Strayer and Haig (1923), two pioneers of educational finance in the United States, whose dichotomous definition of equalization is still utilized, articulated it as equalization of educational opportunity and equalization of school support. In the extreme, this is interpreted to mean that every child within a state's borders should have equal access to educational facilities, programs and services but that the tax burden to provide them should be evenly distributed among all the state's taxpayers (cited in Johns and Morphet, 1975, p. 210). These two dimensions, according to Johns and Morphet, are the embodiment of most educational finance plans. The allocation dimension relates to the formula used by the central government to allocate funds to school districts, and the revenue dimension refers to the sources of school revenue and the types of taxes imposed by central governments and local governments (p. 215). Garms, Guthrie, and Pierce (1978) regarded equity in education in the context of equality of educational opportunity. Equality could only be assured when enough money was provided or available to the school district to provide comparable programs to students when the different needs of the students and the differences in the cost of providing the programs were taken into account (p. 187).

In the Canadian context, Brown (1989) defined educational equity in terms of "fairness to children and to taxpayers" (p. 65). This way, individuals were to be given an equal chance to develop their potential through education regardless of any condition which caused variation in their individual needs, and the financial burden was to be apportioned according to ability to pay (p. 65). Geographical boundaries in both cases were not to be restraining factors.

Finally, Michaud (1989) encapsulated the commonly accepted ideas of educational equity in his three separate classifications of the concept:

1. The conservative view which relates to the provision of universal access to education. The concern for equity ends when the educational services are made available (p. 128).
2. The liberal view which holds that education should not only be made available universally, but its quality should be the same in each community (p. 129).
3. The social view which promotes the differences between pupils. Pupils have different needs and should be treated differently and financed independently according to those needs (p. 130).

The differing versions of the definition of equity vary only in degrees. Two basic themes are commonly acknowledged; namely, equality of access to educational resources and opportunity, and equal sharing of the tax burden to pay the costs of equalized access.

Efficiency

At the core of this concept is value for the education dollar. Garms et al. (1978) referred to it as ensuring that the education dollar is well-spent (p. 211). Brown (1989) gave the term two meanings: achieving educational goals in a cost-effective manner and measuring educational outputs by comparing graduation rates with enrolments (p. 65). Johns and Morphet (1975) described how the concept was treated historically in educational finance plans. They referred to Updegraff (1922) who promoted the idea that the extent of the state's contribution to education be dependent on the level of local contribution through local taxation (p. 209). They also referred to Morrison (1933) who advocated abolishing all school districts in favour of state run schools. His model proposed that the state would become the unit for taxation and administration of public schools. School financing would be primarily through the income tax because it was the most equitable form of tax the state could use (p. 215).

In more recent educational literature, the term efficiency has been enveloped by the more composite concept of accountability. There, the term tends to get lost in the terminology maze of goals and objectives, educational outputs, program evaluation, and resource rationalization, among others. Conceptually, efficiency refers to outputs in relation to inputs. In an operational sense it means the elimination of systemic factors that cause waste in the use of resources or delay in the provision of services. Some examples of systemic waste as offered by the federal government's current constitutional proposals include bureaucratic overlap, excessive regulations, convoluted decision-making, counterproductive intervention in provincial mandates by the federal government, and ineffective and secretive budgetary processes (pp. 2-11).

In Canadian education, Brown (1981) perceived efficiency strategies to be evident in attempts by central governments and school districts to reduce the per pupil costs of education, to centralize decision-making, and to incorporate economies of scale (cost reductions through optimal organizational size) in the production and provision of educational services. He indicated that "the disappearance of small rural schools and the consolidation of school boards in all Canadian provinces provides dramatic evidence that there have been perceived economies of scale in the delivery of educational services" (p. 11). The object is to produce greater technical efficiency. As he notes, "the technically efficient school board would be one just large enough to achieve given educational objectives at the lowest attainable cost per pupil" (p. 21).

The concept of efficiency has two primary dimensions. One entails an a priori systematic attempt to provide for effective planning, allocation, and management of resources to education. The other is an a posteriori strategy. It involves the measurement of benefits derived from provision of the resources. In educational finance plans, the former strategy may be more systemically integrated than is evaluation after the fact.

Equity vs Efficiency

Is the concept of equity compatible with the concept of efficiency or are the terms mutually exclusive and incompatible? Brown (1981) included the notion of local freedom of choice along with equity and efficiency and said that all three goals may be compatible to some extent. But, "they tend to become incompatible if any one of them is pursued without adequate recognition of the need to achieve the other two objectives

in reasonable and politically acceptable degrees" (p. 109). He believed that if achieving technical efficiency were of utmost concern - that is, rationalizing the structure of education through closing small schools, consolidating school districts and attempting to achieve economies of scale in the production of educational services - the goal of equity would be ignored (p. 22). On the other hand, "equity carried to the point of total equality in all aspects of life will impair freedom of choice and utility, and total freedom tends to destroy equity and impair efficiency" (Brown, 1989, p. 64). To be compatible, a balance would need to be struck between maximizing technical efficiency with maximizing the individual and social benefits of education as well as maximizing the distribution of resources and public services.

Equity in all respects may be impossible. As early as 1905 when finance plans for public education were still in a conceptual stage of development, Cubberley acknowledged that while "theoretically, all the children of the state are equally important and are entitled to have the same advantages, practically this can never be quite true" (p. 17). The objective was to equalize the advantages to all as nearly as could be done with available resources.

The various equity finance plans that have been developed in public education are deficient in one respect or other. Brown (1981, and 1989) has already been cited in relation to the difficulty of striking a balance between supply and demand of educational services and the exigencies of achieving technical efficiency. Garms et al. (1978) outlined the following reasons why wealth equalization plans for educational finance are never implemented in their ideal form:

1. A politically acceptable way has not been found to accomplish recapture, i.e., excess funds raised in school districts through supplementary assessment being returned to the state for redistribution. In practice, wealthy districts are guaranteed a minimum amount of state funds through political expediency (p. 208).
2. Weighting programs suffer because of the difficulty in assessing program costs. The weighting concept permits extra funding to school districts for special needs students. It relates to the ratio of the cost of providing a basic special educational program to that of providing a basic normal program. A normal student could have a weight of 1.0 for funding purposes, and a special needs student a weight of 1.5. Funding is given based on the count of weighted students instead of actual students (pp. 200-201).
3. Cost equalization is difficult to sort out from demands for higher quality programs, especially the demand for more highly qualified teachers (p. 209).
4. The property tax, on which wealth equalization is based, is considered a regressive tax. Assessments are improperly set, administration of the tax is inadequate, and the fiscal burden for many people is beyond their ability to pay (p. 211).

The general principle of equity may also be declining as a goal of public policy. Brown (1989) indicated the evidence in this direction was compelling. Equity, including educational equity, is either being downgraded or "put on hold" at both the national and provincial levels because of competition from other sources (p. 64). In most provinces, health and social services have surpassed education in terms of budgeted dollars, and at the federal level, postsecondary funding has been curtailed to an unprecedented degree in the last two years because of general fiscal restraints. According to Brown (1989), the national average of total spending for elementary and secondary education

as a percentage of total provincial and local government spending in all provinces declined steadily from 22.12% in 1970 to 14.75% in 1986 (p. 72). This decline was considered to be much greater than could be accounted for by the 17% decline in student enrolments over the same period. Contributing factors were more rapid growth in spending for competing services (health care and social services) and "perhaps some decline in the policy importance of education associated with reduced emphasis on the goal of equality in society" (p. 72).

In the United States, Johns and Morphet (1975) indicted that historically, equity in educational financing has not been achieved. They indicated that both Cubberley (1905) and Mort (1931) had found in the respective periods that most states had not provided adequate finance plans for equalizing educational opportunity. Nor had the situation changed overall by 1968-69 when the National Education Finance Project arrived at the same conclusion (p. 225).

Conclusion and Implications

The literature does not provide a definitive answer to the question of whether equity and efficiency in educational finance are exclusive or compatible. It infers more than it informs. The concepts are treated as dichotomous variables rather than as a composite and different inferences can be drawn regarding the question. For example, it would appear clear from public finance in Canada at both the federal and provincial levels that education overall is declining in the percentage of public funds allocated to it. General fiscal restraints, caused in part by the size of the public debt, and reduced revenues as a result of the current economic recession are likely to continue in the foreseeable future. Additionally, expenditure demands for health and social services will likely remain unabated considering the aging population and the recessionary fallout. Plus, increasing demands for new spending on municipal infrastructure and the environment are likely to figure more prominently in future political priorities. Thus, equity in educational opportunity may be more elusive than ever as government's ability to pay and shifting public emphases cast wider shadows on the fiscal horizon. On the other hand, the principles of equality, justice and fairness continue to form the underpinning of educational philosophy in the country as evidenced by the wording of the respective provincial aims of education. And programs in special education, early childhood education and distance education are increasingly popular areas of educational funding. The implication of the current pressures in public finance for educators is that as public funds are reduced, the demands for better use and accounting of public spending are likely to increase. Education will be subject to the same fiscal rationalizing as other public sector institutions and will likely see more rigid and defensible mechanisms introduced to control discretionary use of funds. The rationalizing process has already begun with recent school board consolidations in Newfoundland and will be speeded up in the next 3-5 years as the recommendations of the Williams Royal Commission are implemented. The method of funding substitute teachers in the province has also undergone a major shift in the last 2 years with discretionary decision-making having been relegated to school districts.

In such a fiscally constrained environment, educational administrators may have to question a number of previously held assumptions and practices. The ideology of equality of educational opportunity may be an anachronism of the social liberalism of the 1960s which is no longer financially sustainable in the 1990s. Fiscal equity and social equity in education mean two different things. The latter suggests that the education system should provide each student with quality programs and services

irrespective of his/her socioeconomic status or geographical location. It will doubtlessly continue to be a desirable and noble human pursuit and will likely always be reflected in the aims of public education, but, as Brown (1989) has alluded, its emphasis will be reduced if equality in society becomes less of a goal of public policy than formerly. Fiscal equity in education on the other hand refers to fairness in sharing the burden of taxation for financing education generally and may only be achievable in the nether world of economic modelling where human factors such as freedom of choice and student differences are absent from the equation. To achieve greater fairness in their allocation of public dollars, school districts might have to resort to the courts for resolution of differences in equity funding, as is currently happening in Alberta. With the abolition of school taxes in Newfoundland in 1992, the province now has a system of complete provincial funding of education, a unique status it now shares with Prince Edward Island in Canadian school finance. This presents a dilemma for school districts in that their standing as quasi public bodies may preclude their right to litigate for redress of perceived fiscal inequities against the government on whom they depend. Unlike other provinces where school boards obtain only a portion of their financing for education from the provincial government (with the remainder coming from locally imposed property taxes but with state or provincially imposed assessments) thereby having some legal standing to sue the central government, Newfoundland school districts have no such basis on which to claim a right to sue. The legal implications are interesting and may yet be undetectable.

Efficiency in education has come under considerable scrutiny from the public media and from the private sector in the past several years. Where educators have tended to view educational performance in terms of inputs to the system, namely the amount of government funding that is provided compared to other provinces, others view performance in terms of outputs. We are at a time in education where efficiency may only be defensible in terms of measurable outcomes such as high student retention rates, graduation rates, and more vocational utility to educational programming. The implication for educators may be a sharp reduction in their academic freedom to design instruction according to the individual differences of students in their classrooms. Efficiency has also been defined in terms of cost reductions and effective resource utilization at the school and the district levels. Principals and district administrators may have to contend with less local autonomy in fiscal management and may be subject to centralized administration from provincial departments of education.

As a most likely scenario, educators and administrators will require a greater understanding of equity and efficiency issues in the future than they had a need to in the past. This means linking the concepts to the dailiness of normal classroom activities and system governance in order to make an accommodation with current funding realities. At best they will need to enlarge their zones of acceptance for the problems associated with equitable financing of education while at the same time not losing sight of the need to ensure equity to the extent possible in their own areas of operation. They will also need to spend wisely the money they do have. Otherwise, terms like equity and efficiency will remain abstract concepts reserved only for academic discourse in educational journals and conference proceedings.

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**RAISING THE STANDARD FOR ADMISSION TO MEMORIAL
UNIVERSITY: A CRITIQUE OF WILSON AND THE TASK
FORCE ON ADMISSIONS POLICY**

**William H. Spain
Glenn Clark
Faculty of Education
Fall 1994**

Introduction

The recent decision to increase the standard of admission to Memorial University for students matriculating from high school caused a flurry of discussion both on and off the campus. The move parallels similar decisions in other Canadian universities, and speaks to the perception in some quarters that the increase in the admissions standard will result in an improvement in the quality of the university graduate. Others have disagreed with the change, believing that it withholds the opportunity to attend university from a significant portion of the high school population who have demonstrated by their performance that they deserve the chance.

This paper reviews the reports that led to the decision, and presents some additional analysis that expands the perspective taken in the reports. The authors have tried to assume a neutral position in the argument, although the fact that we have troubled ourselves may suggest to some that our sympathies lie with the students who will be adversely affected. Our concerns with the decision to increase the admissions standard are based on procedural grounds, primarily, but also touch on the values implied in the recommendations - values that we think have been influenced by faulty procedure and inappropriate presentation of the analysis in the original reports.

Our comments are based on the information contained in the report of the Task Force on Admissions Policy (1992), and on the two reports by Paul Wilson (1991a; 1991b). We have also examined some of the questions using a sample of data provided by the registrar of the university - all course registrations for the winter semester, 1993. Wilson used data that was cleaner, and at the same time, more restrictive, in that he confined his analyses to students who were full-time matriculants. The two analyses do differ in their outcomes in some respects that we will note.

Our interest came about as a result of work that we were doing with a Faculty of Education committee studying grading standards and practices. The data provided by the registrar for this purpose gave us an opportunity to examine some of the potential effects of the new admissions policy on the University.

The Task Force on Admissions Policy tried to answer two questions.

1. At what level should the admission standard be set to admit those with a REASONABLE (our emphasis) chance of completing a degree and exclude those who cannot REASONABLY (our emphasis) be expected to benefit.
2. Does the admission standard, so set, DIFFERENTIALLY AFFECT (our emphasis) students who are female, rural, or from a rural or lower socioeconomic background. (Task Force, 1992, p. 4)

The Task Force (1992) made two recommendations. The first was that the minimum high school average required for admission directly from high school into university should be set to 70. The second was to change the way the high school average was calculated by using only three level three high school courses, one each in science, mathematics and language. Using a total of five courses in the calculation, including two elective courses, would no longer be done (p. 49).

Four problems become immediately apparent when the various reports are examined.

1. What it means to "DIFFERENTIALLY AFFECT" is not explained in any of the reports, and is not explored thoroughly in the analysis.
2. The adequacy of the high school average as a predictor of success at Memorial is assumed, without being questioned.
3. The meaning of REASONABLE is very much an issue, and in fact, it is never defined in the Wilson and the Task Force reports.
4. There are flaws in the arguments that are applied to predict the impact of the change in the standards on student success and on costs.

The Admissions Problem

Deciding on an admissions standard is not a trivial undertaking. It involves the selection of criteria that will predict, in general, the level of attainment to be expected of applicants in University, given their level of attainment on the admissions criteria. A standard is set based on these expectations. Persons expected to fail, given the current programming of the university, are not admitted.

The procedure is not straightforward, however, because no set of criteria will be perfect. They do not predict absolutely. Some persons expected to fail will pass, and some expected to pass will fail. Prediction of success, therefore, becomes a matter of understanding the potential for error in the process so that the standards that are set can optimize error in terms of the relative levels of the incorrect acceptances and rejections that are made. The best criteria will be those that minimize the total numbers of admissions errors. The best standards will be those that reflect stakeholders' views about the acceptable balance of incorrect acceptance and rejection. Lowering the standard minimizes incorrect rejection, while raising it minimizes incorrect acceptance. The total error remains constant so lowering one kind of error raises the other kind of error. The job of the Task Force, therefore, was twofold; first, to identify a criterion, or set of criteria, that would predict university success with a low rate of total error; and second, identify and weigh the views of the legitimate stakeholders respecting the balance of error that is most acceptable.

"Differential Effects" - Bias in Admissions

At the outset, it should be obvious that in one sense, the current standard cannot differentially affect admissions, because all applicants meeting the cutoff will be admitted if they apply. Wilson, and the Task Force, examined the question by asking who applied and if there were differences in the numbers of men and women, and of

rural and urban students, actually admitted. They discovered that more women than men apply, and meet the standard for admission. They found that the same proportions of rural and urban students, at all levels of ability (as measured by high school average), apply and are admitted. From this, they have concluded that there is no further need to examine gender effects, and that there is no rural/urban bias in admissions.

Because of the open admission policy, if the minimum standard is met, differential admissions, in the sense actually discussed by the Task Force, is not an issue except insofar as the university is responsible for articulating the standard, and justifying it. It is not material that more women than men, or for that matter, more men than women, apply and gain admission. The number and standing of rural students who are admitted is not material to the standard setting question either. It only becomes material if it can be shown that equally qualified men and women, or equally qualified rural and urban students, get different high school averages, or if it can be shown that their high school averages relate differently to their later performance in university. Wilson, and the Task Force, did not examine these questions.

This is the sense in which admissions bias should be considered. The admissions process should not differentially exclude categories of potentially successful applicants to the university, and it should not differentially include categories of likely unsuccessful applicants. Any standard of admissions that is set must consider these questions in the selection of both the criteria to be used, and the standard to be set, regardless of the definition of "reasonableness" that is used. What this means is that the criterion (in this case the high school average) must not predict university outcomes with differing levels of accuracy for differing applicant groups.

The argument is made by the Task Force that there is no rural/urban or gender bias in the high school average as a predictor of university success.

An examination of both gender and place of residence indicated that there were no statistical(sic) differences between male and female students, and between rural and urban students, on the admission average from grade XII in any of the studies. Therefore, any change in admission requirements would not disproportionately affect either male or female students, or rural or urban students. (Task Force, p. 14).

We can find no valid analysis to support this conclusion, either in the Task Force report, or in either of Wilson's studies. The analysis that is claimed to support this in actuality only establishes that there are proportionately the same numbers of rural and urban students at different levels of high school average admitted to the University. This is not a measure of the ability of the high school average to predict the university performance outcomes of these students. In fact it is meaningless in this context because the analysis does not take into account either the size of the applicant pool, that is, all those who meet the minimum academic requirement for admission, or the related academic outcomes at university.

The Task Force (1992) did, in fact, introduce evidence of bias; that is, that the high school average over predicts the success of rural applicants. It described the tendency of rural students to be less successful in university than urban students (p. 14-15). This finding has two interpretations. First, if the high school average is not a biased predictor (as argued by the Task Force), and therefore predicts the academic success of rural and urban applicants equally well, then university programs are biased

against rural students for reasons that cannot be discerned at the time of admission using the high school average, except that they apply more frequently to rural, than to urban, students. Excluding students for unaccountable reasons through the use of an academic criterion is a prescription for a public relations disaster. In order to deal with a problem that cannot be described at admission time, the academic standard for admission would have been raised, excluding from the University many potentially successful students. Worse, it may be confidently predicted that the failure rate among the admitted students would not change to the degree anticipated by the Task Force. The major change would be in the size of the student body. It is true that the change in standards would affect rural and urban students equally; but, a larger proportion of the rejected urban students would have succeeded if they had been admitted.

The second interpretation is that the high school average is, in fact, a biased predictor of academic success, in which case its use should be reconsidered. If this interpretation is the correct one, then the data would suggest that urban students are unfairly excluded from university under the admissions procedures, and that this would be exacerbated if the admissions standard is raised in order to exclude those most at risk of failure, the largest proportion of whom are rural.

The High School Average as an Admission Criterion

The adequacy of the high school average as a predictor of university success is an important question in determining the reasonableness of any standard that is set. It is also related to the question about bias, in that prediction could be better for some groups than others. If the prediction is good, there will be more precision, and fewer admissions errors of both types will be made. Fewer unsuccessful students will be admitted regardless of the admission standard that is set. If the prediction is poor, more error of both types will be made because there will be less precision. More unqualified students will be incorrectly admitted. The problem that would be created in this case, however, is that many more potentially successful students will be denied admission as well because they cannot meet a standard that is only marginally relevant to the potential for success in university. This reflects our view of the present situation.

Predicting university outcomes over time, Wilson found higher correlations of the high school average with university grades than did we (see table one which is reconstructed from Wilson, 1991a, tables 17, 19, 20, 21, and 22). He did his analysis only overall, on a sample of full-time matriculants. We broke our analysis down into academic faculties, and used all registrations for the winter 1993. Both we and Wilson found that these correlations dropped, as one might expect, quite significantly after the first year. Wilson's first year correlation of 0.69 is a reasonable, but not exceptional, level for measures of ability and achievement. It certainly is not strong in the sense that it would predict with a high degree of precision. While it would predict university performance, it would do so with considerable error. Wilson did not provide information that would enable a calculation of the standard error of prediction. At best, predictors with this level of validity would be considered marginal for making decisions about individuals, and caution in their use would be advised, preferably in conjunction with other predictors (for example, Stanley and Hopkins, 1990, p. 365).

The first-year correlation of 0.50 found by our analysis is lower than that found by Wilson, and would be considered too weak as a predictor to be used without other predictive data. The reason for the differences in the findings cannot be established with certainty. Likely it is due to the fact that our analysis included all students, both full

and part-time, for a single semester. Wilson computed the overall average for two semesters for full time students only.

Wilson (1991a, p. 123) concluded that at the end of five years, 40% of the variation in the cumulative average could be accounted for by the high school average. This conclusion was based on the correlation within a group of survivors who had been selected out early by circumstances which were correlated with the high school average. The really important question, however, is the degree of correlation of the high school average with early performance, and as seems clear in both analyses, this correlation is at best only moderate.

These findings, both ours and Wilson's, suggest quite strongly that survival of the first, and certainly the second, year puts students into a situation where other factors than high school preparation play a significant role in failure. Recalculating Wilson's data to show the percent attrition by year within the 60-69 and 70-79 admissions groups, we found that the attrition in the so-called "high risk" 60-69 group had dropped over time to the same level as in the 70-79 group, contrary to the assertion made by the Task Force that this group never catches up (see table two). Even more interesting is the observation that attrition in this group of students begins to drop after the second year. Subsequently, this trend continues, while attrition in the other groups increases somewhat after second year.

Table 1
Correlation of High School Average and Winter 1993 Average
for all Students with a Known High School Average

		All	Number of Earned Credits					
			0-10	11-20	21-30	31-40	41-50	>50
All MUN Students	r n	.44 11117	.50 3893	.38 2260	.33 1699	.28 1465	.24 1139	.19 661
General Studies	r n	.45 5413	.50 3713	.32 1323	.20 265	-.13 53	.23* 36	
Arts	r n	.34 2129	.39 50	.37 536	.36 629	.25 607	.28 249	
Science	r n	.44 1154	.72 52	.57 283	.30 366	.41 256	.44 163	
Education	r n	.18 490		-.28 6	.46 33	.19 106	.18 163	.17 181
Wilson Study* (Approximate)	r		.69	.55	.45	.31	.13	

* Wilson reported correlations by year attended in a Single, Longitudinal Sample for the 1984 class

Table 2
Attrition from a Sample of Full-Time Matriculants
Admitted in Academic Year 1984-85

High School Average		Total	Year					Total Attrition
			1	2	3	4	5	
60-69	N	219	18	47	41	27	12	145
	% row	---	8.2	21.5	18.7	12.3	5.5	66.2
	% Total	24.3	1.8	4 .7	4.1	2.7	1.2	14.5
70-79	N	428	27	37	56	44	29	193
	% row	---	6.4	8 .6	13.0	10.4	6.9	45.3
	% Total	17.3	2.7	3 .7	5.6	4.4	2.9	19.3
>79	N	353	3	15	31	15	32	96
	% row	---	0.8	4 .3	8.7	4.3	9.1	27.2
	% Total	28.5	0.3	1 .5	3.1	1.5	3.2	9.6
Total								434 43.4

Note: Table constructed from recalculations of information in Wilson, 1991b, p. 18

In fact, if it is accepted that survival beyond the second year is an increasing function of university programming, then the actual target of the change in admissions standards are the 65 students in each 1000 admissions who are in the 60-69 admissions category and fail in the first two years. Most of the 43% total attrition in the university observed by Wilson cannot be attributed to causes predicted by the high school average, and this would not be expected to change with a change in standards unless there was a concomitant change in university programs. The attrition rate using the new standards can be expected to be 37% of those admitted, not a great deal lower than at present. The new standards will eliminate about 24.3% of the current matriculant admissions in order to screen out 6.5% of those admissions who are unqualified. The remaining 17.8% would either succeed if admitted, or fail at least in part because of university programming. Furthermore, accepting the argument that failure in the first two years is largely a function of high school preparation, a total of 8.2% of persons accepted under the old regulations would be unqualified even though their high school average is over 70. Nonetheless, under the new regulations, these persons would be admitted.

We found that the best prediction was in the science faculty, where the high school average predicted significantly better than for any other faculty, including general studies. The correlation was at a level to be expected of good admissions criteria. We found as well that prediction in the arts faculty was uniformly low (correlations about 0.39) right from the beginning in first year. These same trends also can be seen in the

correlations of high school averages with grades received in a variety of first and second year courses (see table three). The highest correlations were in the sciences, and the lowest in the arts. Very few were above .50, and the correlations in some of the critical courses, for example mathematics 1080, which had a correlation of .28, were virtually nonpredictive of success. These points were not addressed by the Task Force.

Table 3
Correlations of Marks and High School Average for
Courses taken in Winter, 1993

Department	Course Number	N	Correlation
Biology	1001	283	0.58
Biology	1002	940	0.48
Chemistry	1000	402	0.40
Chemistry	1001	725	0.39
Chemistry	1800	136	0.32
Earth Science	1000	102	0.48
Earth Science	1001	79	0.53
Mathematics	1000	65	0.33
Mathematics	1001	529	0.40
Mathematics	1050	452	0.36
Mathematics	1051	365	0.33
Mathematics	1080	838	0.28
Mathematics	1081	1321	0.30
Physics	1052	52	0.63
Physics	1200	146	0.40
Physics	1201	661	0.41
Science	115A	65	0.28
Science	115B	190	0.44
Economics	2010	117	0.32
Economics	2015	191	0.35
English	1080	356	0.18
English	1101	1562	0.39
English	1110	402	0.40
Folklore	1000	140	0.36

Department	Course Number	N	Correlation
Folklore	2000	106	0.19
French	1001	179	0.41
French	1050	259	0.37
French	1051	221	0.30
German	1000	158	0.46
German	1001	122	0.43
Geography	1000	276	0.51
Geography	1001	205	0.36
History	1000	268	0.34
History	1001	440	0.26
Poly Science	1000	172	0.43
Psychology	1000	455	0.57
Psychology	1001	2434	0.51
Sociology	2000	559	0.39

Marginally acceptable prediction is available only for first year, and then only for persons taking sciences. Note the implications of this for the new applications procedures, which have students now applying for their faculty on admission. Because the high school average predicts performance in the arts so poorly compared to the sciences, it will be necessary to raise the admissions standard higher in the arts in order to attain a level of first year success that compares to that in the sciences. However, raising the admissions standards in this way will cause the rejection of more students who would succeed in arts as compared to sciences.

In actuality, for the majority of students admitted, the high school average appears to predict university performance poorly. Certainly, its use is open to challenge. We believe that a thorough examination of the use of the high school average is required before changing the standards for admission. This would necessarily include an examination of university grading practices as one of the explanations of the poor predictiveness of high school performance.

Redefining the Admissions Criterion

The Task Force recommended dropping the two elective high school courses from the calculation of the high school average, presumably because this would make the resulting average more valid as a predictor of university outcomes. The rationale for this recommendation was seriously flawed. The procedure assumed facts not in

evidence; specifically, that the elective courses in high school overpredict university performance. The real issue is whether an average calculated without these two courses will predict university performance with less error than one calculated with them included. This was an empirical question that could have been easily examined by the Task Force, but was not. It is possible, in fact, that the presumed lower validity of the present calculation is moderated by the improved reliability of a total comprised of five, rather than three, grades from high school courses. The potentially lower reliability of the proposed average of three courses could yield even lower predictive validities than are found now.

In order to justify the recommendation, the committee calculated the adjusted high school average for an extremely small (and unreliable) sample, and determined the numbers who would have met the admissions standards without the two elective courses (Task Force, p. 10-11). The result was the conclusion that about 30% of the sample would not have met the admissions standard of the university. This adds an interesting twist to the Task Force's recommendation in that the cumulative effect of the higher admission standard and the revised high school average is never estimated. It would undoubtedly affect many of those who now fall into the 70-79 range, and disqualify them for admission as well. This would happen as a result of recommendations without empirical support.

Defining Reasonable Success

Wilson and the Task Force define a "high risk" group *a priori*, without establishing criteria for defining level of risk. As a sound procedure, this simply is unacceptable. Surely the criteria should have been established independently of the analysis, with an appropriate standard being set afterwards.

The procedure followed by Wilson (1991a), and later by the Task Force (1993), was to divide an incoming class into three categories of "convenience" (Task Force, p. 7). Calculations were done within each category, and naturally, the result was the finding that there was more attrition, proportionately, from the 60-69 average group than from the higher average groups. This finding is expected given the observation that in first year, the correlations of high school and university averages are positive, even though not high. It is not clear from the presentations by Wilson and the Task Force just how attrition was determined. The implication, however, is that it was determined by attendance in the following year. Wilson (1991a) is careful to explain why attrition might be artificially low after first year, and artificially high after fourth year (p. 132-33). He does not discuss possible non-academic causes of attrition between first and fourth year, leaving the impression that all attrition is caused by academic deficiency. The labels of the categories of convenience are transferred by implication into categories of "risk", with the 60-69 admissions category labelled as high risk, and from there into categories of "reasonableness", with high risk being unreasonable.

There is no discussion of how a high risk student should be defined. When the Wilson and Task Force reports talk about "weak" students, they are really referring to the "weakest" students in the University regardless of the actual level of performance. No matter what level the admission standard is set at, and no matter what quality of attainment is actually achieved, the students with the lowest university averages will always be "weak" when defined in this way, and their degrees will always be "mediocre". The same is true of the "high risk" group. By the nature of the admissions design, admitted students with the lowest high school average will all be at the "highest risk"

relative to their classmates. Wilson and the Task Force advanced no independent evidence supporting the contention that the performance of some students is weak and that some degrees are mediocre. Some evidence of this type is needed before appropriate admissions standards can be set.

The impact of mature and transfer student performance should also be considered. The Task Force decided only to consider the current matriculant category of admissions, but did not explain why it did this (Task Force, p. 12). We found that the distribution of course marks of first year general studies students (see table four) admitted without a high school average was very similar to the distribution for matriculants. About the same proportion in each group had semester averages over 60, even though there were a few differences in the extremes of the distributions. This is a very gross comparison. Future studies should take into account differences in full and part-time participation, and mature as opposed to transfer admissions. It seems strange to apply a different standard to mature, special, and transfer admissions than to regular matriculants, but this is what could result from the increase in the admissions standard.

Table 4
Distribution of Winter 1993 Course Marks of General
Studies students with 0-10 credits;
Comparison of Those with, and without a Reported
High School Average

Winter 93 Average	Category			
	Without high School Average		With High School Average	
	N	%	N	%
<50	211	20.2	444	12.8
50	71	6.8	277	8.0
55-60	241	23.0	1024	29.5
65-75	392	37.5	1428	41.2
>75	131	12.5	295	8.5
Total	1046	---	3468	---

The Wilson and Task Force studies were very restrictive in who was included for their analysis, and basically considered only those in full-time study who were following traditional routes. They then argued that for these people, the ideal was degree completion in as short a time as possible. An argument which emerges from the Task Force study, and which has been extended to new regulations on declaring a major, is that it is in the best interest of the student to get in, get on with it, and get out. In fact, apart from being very paternalistic, this ignores world-wide trends in higher education toward more part-time education over longer periods of time.

The Cost of Student Failure

The economic argument is the only one actually explored by the Task Force in justification of the change in the admissions standards. It claimed that because a greater proportion of those admitted with high school averages in the 60-69 range withdraw than in any other category of high school marks, an unreasonable burden was being placed on the university budget. It was suggested that this has impacted on better qualified students by reducing the quality of their education (Task Force, p. 6). The facts are, however, that in an absolute sense, the Wilson data show that much more of the total attrition comes from the 70-79 average group than from the 60-69 group (see table three). In terms of the university budget, this is the more important impact. Even though proportionately fewest of the greater than 80 group fail, even this impact is non-trivial because of the size of the group.

Furthermore, this does not take into account the part-time matriculants, and all the non-matriculants that are admitted each year. In fact, in the winter, 1993, full-time matriculants (registered for four or more courses) comprised only 52.6% of the total university enrollment (see table five). The solution to the problem of non-success that has been adopted applies to only about 3.8 percent of the total enrollment of the university.

Table 5
Matriculation Status by Full-Time Study Status, Winter 1993

Matriculation Status	Category					
	Part-Time		Full-time		Total	
	N	%	N	%	N	%
Non-Matriculation	1785	12.7	1193	8.5	2978	21.2
Matriculation	3669	26.1	7387	52.6	11056	78.8
Total	5454	38.9	8580	61.1	14034	100.0

The Task Force made the rather curious argument that the savings realized by lowering enrollments would be put to use to improve the quality of instruction. The assumption was that the per student expenditures on instruction would be increased, and that this would translate into better programs. Wilson (1991a, p. 347) noted the intractability of the faculty to change, however, so it might be alternatively supposed that instructional programs and grading practices are not all that likely to change, even in the unlikely event of an infusion of funding, resulting in little or no gain in student performance. Because of the relatively low relationship of performance in first and second year courses to the high school average that was noted earlier in the discussion, it might also be predicted that university instructors will note only marginal improvement in the quality of the students. It might be further predicted that overall failure rates of matriculants will also show only marginal improvement.

All of this ignores other reactions to the increase in the admissions standard. One very real possibility will be an inflation of high school averages, as has happened elsewhere. This would make the problem of standard setting much more difficult. Another possibility is that changes now under way in the high school program will improve the quality of the graduate, making the change in university admissions unnecessary.

The Task Force predicted that greater demands from mature students would emerge if these changes were put in place. We suggest that the demand will come anyway, apart from any demand generated by persons affected by these admissions changes. Based on our analysis, the mature applicant will enjoy about the same success rate as the general studies student admitted from high school, so by putting the new admission procedures in place we only defer the problem (if it is a problem) of the student in the 60-69 range. An interesting speculation is the possibility that raising university admissions standards will divert potential applicants to the community college system, and create pressure to divert public funding from the university to that system as well.

There is simply no basis for the argument that it costs seven times more to educate a person in the "high risk" group than in the "low risk" group (Task Force, p. 27). This conclusion cannot be drawn from the data collected. The real question is the cost of failure of any student and it has already been shown that many more students fail from the group admitted with averages 70 or greater, than from the 60-69 category, and that additional students fail from other admission categories. This information should be cast into the determination of the total risk of failure in the university, with a prediction of the actual budgetary impact to be realized by reducing the risk in the full-time matriculation category.

Perhaps most importantly, there is a need to assess the cost of withholding an opportunity from qualified students. This is not an argument that young people should be allowed an opportunity to sort themselves out, although perhaps such arguments should be put. This is an argument that says that the evidence is that the high school average tells us only a little about the applicant's ability to succeed in university (with some modest exceptions that have been noted) and that the loss of the intellectual resources of those from whom opportunity has been incorrectly withheld may significantly outweigh the small savings that the University will realize.

The Quality of Student Performance

A recurrent theme in the Wilson and Task Force reports was the need to safeguard and promote "quality" in student performance. We found it very interesting that the Task Force did not directly address this issue, given its ubiquity in the discussions. Neither of the questions posed for study mentioned the need to deal with the quality of student performance at university, and the Task Force made only two recommendations, neither of which dealt with the university performance of students. The Task Force recommendations will influence the quality of Memorial's output only indirectly, by eliminating from admission a few of those with a tendency to perform less well in the University's current programs. The "quality" of an education at Memorial University will be improved only in the sense that the less qualified have been eliminated. Better qualified students will not be admitted unless some action is taken to expand the applicant pool. The new admissions standards will do nothing to promote better performance in those admitted. The University will send no more of its graduates to graduate school, or to better paying jobs, or to positions of responsibility in the community. In fact, it may send fewer, because it will be now be discouraging the applications of more highly qualified people. Persons with high school averages close to 70 will now know that they are the "high risk" group.

The Task Force (1992) said that the change in admissions standards would send a number of messages. Especially significant were the following:

While "elite" or highly selective universities may set their standards based on who they "wish" to serve, "open" universities should set their standards on their notion of who can benefit (p. 50).

and then:

Access to Memorial University is not a right conferred with residency in the province. It is a privilege extended at no small public cost to those who have the necessary ability demonstrated through achievement in high school, and who can benefit from a university education (p. 52).

The question of the quality of student performance is turned into a question of benefit to the student (and presumably, the community). Moreover, it is clear that the Task Force reserved to the University the right to determine what it means to benefit from its programs, despite the fact that the public, and students, are bearing the cost. This means that a very clear understanding is required of what those benefits are, of the way that university programming promotes them in terms of outcomes for students, and of the impact that the admissions procedures have on these outcomes. The Task Force, unfortunately, did virtually nothing to study these questions.

Conclusions and Recommendations

The Task Force on the university admissions policy posed two questions which, adequately defined and addressed, should have helped considerably in drawing sound conclusions about an appropriate admissions policy. Unfortunately, in addition to failing to provide the needed definition, the Task Force also failed to address questions about the adequacy of the high school average as a criterion predicting success in university, and the appropriate policy to be pursued concerning the admission of mature, transfer, and other special applicants.

Both the Wilson and the Task Force reports use inappropriate analyses, and interpret some of their analyses incorrectly. They use inaccurate and unjustified labels which mislead the reader concerning the interpretation of the findings. In general, the recommendations of the Task Force were inadequately supported by the reports.

The recommendations may be needed. There is general support for the improvement of performance in education at all levels. One way to do that in the university is to admit more highly qualified students. This would provoke the least disruption in the way instruction and evaluation is conducted in the university. In order to be effective, however, admission has to be on the basis of criteria with a strong relationship to later performance, and these criteria should not be biased in their application. The new admissions standards will not result in more highly qualified students being admitted, however. They will simply apply to a truncated applicant pool and will not expand the pool of qualified applicants in any way.

There is strong evidence of the inadequacy of the high school average to predict early university performance without a high level of error. This is particularly true for students in the arts faculty, and for those taking basic courses in mathematics. The reason for this is not apparent, but the quality of both the high school average and university evaluation practices could be at issue.

There is some evidence creating the suspicion that the admissions procedures may be biased against urban students. At the same time, rural students have been less successful in university and more information is required to determine if the admissions procedures should be invoked to deal with this problem.

The study begun by Wilson and the Task Force should be reappraised and expanded to examine the adequacy of the high school average as an admission standard. This should include empirical work to establish independent information on the question. The stakeholders in the decision should be clearly identified and their input respecting the appropriate balance of error in admissions should be sought.

Studies of the performance of part-time and mature students should be conducted, with a view to the establishment of appropriate admissions criteria where needed.

The impact of university programming on student performance, and its relationship to the admissions process should be undertaken. Study should be undertaken on university evaluation practice and its impact on the utility of the high school average.

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CANADIAN SCHOOLING: A REPORT CARD

J.W. Bulcock
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Purpose

I write as an apologist for Canadian schools. Few institutions have changed more in the past 30 years, and few have been subjected to such ubiquitous, sustained, and often vitriolic criticism. Much of the problem can be associated with the weakening of the schools' corporate authority by a judicial system effectively functioning as a quasi-legislative body.

Several other factors may be identified. Birth rates in all provinces are well below replacement. In two provinces, Saskatchewan and Newfoundland, provincial populations are in absolute decline. When economic goods are scarce their value is inflated; when fertility ratios decline children become more precious; and when children become more precious parents become increasingly reluctant to "give up" or delegate their authority over children to others -- no matter whether the "others" are the extended family, the schools, or the local neighbourhood. In terms of schooling this reluctance to delegate authority has undermined the principle of *in loco parentis* -- the principle giving the schools the right to act in the place of a wise and judicious parent. Yet, it is this principle which is at the bedrock of the school's authority. We know that this is the case because parents have challenged the authority of the schools in court. Sometimes the challenge has been over seemingly trivial matters such as dress codes and hair length; sometimes over more important questions such as school prayer, freedom of speech, and the use of coercive punishment. No matter what, the subsequent legal precedents have placed substantial constraints over the corporate authority of schools.

The traditional authority vested in the extended family has also declined largely due to the atrophying of the extended family in a highly mobile society. By the same token neighbourhood authority is also in decline thanks to developments in transportation which permit residences to be separated from the workplace. In any case neighbourhood authority was dependent on the informal networks and common understandings among mothers, most of whom are now in the workforce. It should come as no surprise, therefore, that the pre-1960s social contracts between parents and the school authority have been systematically undermined. And it follows that the former balance of authority has tipped so as to be more in favour of the child. As the authority of the schools has declined, the power of the child has increased. In this sense the student movements of the late 60s and early 70s in Europe and America were truly revolutionary.

The consequences of these shocks to the corporate authority of the schools account for much of the recent criticism -- especially criticism related to presumed declines in moral and academic standards. As an apologist, however, I claim that there is no systematic body of evidence supporting a position that academic standards in the ten Canadian education systems have declined; and I intend to show, despite the conventional wisdom to the contrary, that Canada's educational system is world class. First, I draw attention to the fact that a report card cannot be interpreted unless there exists a frame of reference for the interpretation. Second I draw attention to the serious misperception of Canada's constitutional framework within which the schools operate. Third, I reiterate the views of others regarding the overriding importance of human

capital investments in national income growth accounting. Fourth, I come to the gist of my argument; namely, that in the core subjects of science, mathematics, and reading literacy, cross-national studies of school achievement demonstrate that Canada is one of the world's highest achieving nations. In the concluding section some modest suggestions are made for promoting greater uniformity in education quality across Canada's ten educational jurisdictions.

Frames of Reference

If your daughter, Shannon, came home and told you that her grade four teacher had given her 27 on a reading test your response might be something like "What does 27 mean?" or "Is that a good mark or a poor mark?" Before a score of 27 can have a meaning it must have a referent. Schools use several different frames of reference for giving test scores meaning, but the commonest one, and by far the most controversial, is the normative frame of reference. In Shannon's case this might consist of the other students in her class. A test score is given meaning by comparing it to the scores of other students taking the same test. Despite the controversy about using norm-referenced teacher-made tests -- they can depress student self-esteem and confidence, hence can have negative influences on student motivational behaviour -- they are still the most commonly used referents on report cards, probably because they are the easiest for parents to understand.

Because our goal is to construct a report card for assessing Canadian public education our referent will be the performance of children of the same age and grade in other countries on the same test. For example, by itself, to say that Canadian 10 year-olds on average scored 13.7 on an international test of science achievement is meaningless. A norm referenced meaning would involve finding the mean scores of comparable, representative national samples of 10 year-olds from other countries. And this is what the International Association for the Evaluation of Educational Achievement (IEA) does in all its studies, and what it did in the second international study of science achievement published in 1988.¹ The IEA steering committees usually test at more than one age or grade level. At the 10 year-old level 15 countries took part, including Canada (all provinces except Saskatchewan); thus, the reference group countries were the other 14 countries participating in the cross national survey.

It turned out that Shannon's score of 27 was out of a possible score of 30; i.e., 90 percent. The average score for the class of 25 grade four pupils was 22 or 73 percent; hence, by this yardstick -- the children in Shannon's class in school -- Shannon had performed above average. In the IEA science achievement study, however, Canada's average score was 13.7 out of a possible maximum score of 24; and Canada's position was sixth out of the 15 countries. While this does not seem to be a particularly poor international standing -- marginally above the international median of 13.2 -- neither does it seem to be a particularly good standing; hence, Canadian newspaper editors whose cups seem to be mostly half empty rather than half full, find yet further evidence for the decline in educational standards and a further opportunity for teacher bashing.

Canada's School System

The Canadian school system as we know it today was structured for governance purposes by the British North American Act of 1867. Prior to the advent of Confederation, Sir John Alexander MacDonald (Sir John A.) was co-premier of the

Province of Canada, at first with George-Étienne Cartier, and later, in the early 1860s, with George Brown, editor of the *Toronto Globe*. Sir John A. was leader of the Liberal-Conservative party and George Brown leader of the Reform Liberal party. By the mid-1860s both parties had joined forces to push for confederation as a common goal. Sir John A. was the least enthusiastic of the two, but according to Bliss (1944:12) once he realized that public sentiment gave him no choice, he joined the bandwagon and "soon led the band."²

One should remember that the mid-1860s were the years of the American civil war, and that to most informed observers of the day American federalism was not equal to the task of reconciling North and South because the American constitution gave all political powers to the states, including all residual powers, except those explicitly conferred on the federal government. In short, it seemed to most Canadians that American sovereignty was vested in the states. The framers of the British North America Act faced a parallel dilemma -- how to divide governmental powers between the central government and the proposed new provinces. To avoid the presumed flaw in the American constitution the Fathers of Confederation gave all political powers including residual power to the central government. They wanted to ensure the strongest possible federal constitution with the most important functions of government firmly under the control of the central governmental body. To be doubly sure of federal supremacy the federal government was given the power to veto any provincial government law. The net result was a second tier of government at the provincial level in charge of what was intended to be only minor governmental powers, albeit sufficient to protect the language and the religious rights of the French speaking minority; namely, property rights, civil rights, local government affairs, and education. The intended consequence was that to this day Canadians believe that constitutionally, education is the realm of powerless PTAs, and equally powerless school boards controlled by a parochially-minded bureaucracy. The irony, of course, is that since Sir John A's day education has become the single most important element by far in the national income growth accounting equation -- a matter taken up next.

The Economics of Schooling

Today, it would seem self-evident that economic success in the global economy is a function of productivity and technological innovation. What is less obvious is that it all begins in the classroom.³ Productivity and national income growth are responses to the knowledge, skills and energy of a well-educated, well-remunerated work force.⁴ It is becoming indisputable that the countries with world class knowledge workers are the countries with world class economies; and to have world class knowledge workers nations have to have world class educational systems. It is helpful to have physical capital, abundant natural resources and a large supply of labour; but the basic resource is none of these. Rather, it is knowledge that comes first, and not knowledge by a few but knowledge by all. For the foreseeable future knowledge would appear to be the bedrock of competitive advantage.

In regard to the production of knowledge workers by our universities Arthur May, President of Memorial University, expressed the situation clearly before a Standing Committee on Industry, Science and Technology of the House of Commons. He stated that:

You can produce researchers only by doing research and funding research in the universities. This is the only way they are produced.⁵

And by the same token you can produce knowledge workers by providing children and youth with quality educational experiences. And to do this you have to fund the school system and attract able university graduates to the teaching profession. This is the way knowledge workers are produced in all countries.

Science Achievement

The goal of gathering data on student achievement in the core subjects such as science, mathematics, and reading literacy is a difficult one to attain. It calls for standardized procedures of research, the quantification of assessment variables gathered by instruments which have been translated into many different languages, and in the case of school achievement, consensus among the participating nations over what elements of the curriculum domain to include on the instruments.

Canada is a late comer to the international club of nations which since the late 1950s have participated in cross-nations studies of school achievement.⁶ The procrastination ended in the mid-1980s with the participation of two provinces, British Columbia and Ontario in the second international mathematics study⁷ and all provinces except Saskatchewan in the second international science study⁸. From Table 4 one notes that the achievement results for the 10 year-old samples are presented using two kinds of scale -- an ordinal scale for the ranking of nations, and interval scales for the raw scores and percentage scores. Ordinal scales have two mathematical properties: the measurement tells us what class the unit falls into with respect to the property, and it tells us when one unit has more of the property than another unit. The interval scale has both these qualities, but in addition it tells us that one unit differs by a certain amount of the property from another unit. Clearly the interval scale is the superior measurement of the two. But the simpler measurement is the one preferred by the media. In effect the media takes a more accurate measure, degrades it by translating it into an inferior ordinal scale which is the scale it reports.

It is simpler to say that Canada came sixth than to say that Canadian 10 year-olds' aggregate score on the international test of science achievement was 13.7 and that the international mean, where country was the unit of analysis, was 13.1. By interpreting the interval scales one notes that the average Canadian 10 year-old scored 13.7 points out of a possible total of 24, or 57 percent; and that the countries with the highest ranking (Japan and South Korea) scored 15.4, or 64 percent. The difference between Canada and the top ranking countries was less than 2 marks out of 24 (i.e., 1.7 marks), or 7 percent. While it is true that in statistical terms the difference between the top ranking countries and Canada on the elementary school mathematics test was statistically significant (in terms of a one-sample t test there was no difference between the international mean and Canada's score, but there was at the $p < .001$ level for Japan and Korea), in substantive terms few people get overly excited by differences of 7 percentage points on a test. On the other hand, to increase a nation's standard of performance in elementary school science achievement by 7 percentage points might not be easy, although it can be done, as was recently shown in Newfoundland.

Table 1
Science Achievement Scores, National Rankings, and Rho Values
for 10 Year-Olds in 15 Countries, 1988

Country	Mean	Standard Deviation	Percentage Score	Rank Order	Rho ⁹
Australia	12.9	4.5	53.7	9	.15
Canada	13.7	4.3	57.1	6	.12
England	11.7	4.5	48.8	12	.17
Finland	15.3	4.0	63.8	3	.07
Hong Kong	11.2	4.2	46.7	13	---
Hungary	14.4	4.5	60.0	5	.22
Italy	13.4	4.7	55.8	7	.19
Japan	15.4	4.0	64.2	1	.04
Korea	15.4	4.2	64.2	1	.16
Norway	12.7	4.1	52.9	10	.15
Phillipines	9.5	4.5	39.6	15	.56
Poland	11.9	4.5	49.6	11	.22
Singapore	11.2	4.1	46.7	13	.39
Sweden	14.7	4.0	61.3	4	.03
U.S.A.	13.2	4.6	55.0	8	.14

Source: The International Association for the Evaluation of Educational Achievement, 1988. *Science Achievement in Seventeen Countries*. Oxford: Permagon.

In 1991 Newfoundland's grade 6 standing in mathematics on the Canadian Tests of Basic Skills was measured to be at the 39th percentile -- hardly satisfactory. The Provincial mathematics consultant, Patricia Maxwell, was given the task of trying to improve the situation. She analyzed the test results item by item, compared each item on the CTBS math test battery with the grade 6 curriculum content domain. In other words she found where the students' strengths and weaknesses lay vis-vis the math curriculum. She then passed this information to all the district level math consultants and all the grade six math teachers in the Province along with suggestions regarding how much time might be spent on certain topics, what criterion standards to insist on, and what the teacher expectations should be. Testing occurs every three years, so this year (1994) the grade 6 students were tested again using the same instrument. This time the Provincial standing using national norms was at the 51st percentile, a 12 percentile point improvement.¹⁰

The findings for junior high school science achievement (14 year-olds) in 17 countries are presented in Table 2. Their interpretation would be much the same as that for the science achievement of 10 year-olds reported above. It is useful to note, however, that between grades 4 and 9 Canada's international ranking improved from 6th

out of 15 countries to 4th out of 17. The finding is revealing because in almost all countries students in the 14 year-old age group are still attending school; hence performance in junior high science is considered a proxy for the scientific literacy level of the adult work force. In contrast, the scores for U.S. students between 4 and 9 declined; a matter which should be of some concern to U.S. educational authorities.

Tables 3 through 5 present the rank ordering of countries who tested grade 12 students in their terminal year of secondary schooling in biology, chemistry, and physics. In most of these countries advanced secondary school students take specialist science courses for two years. In raw performance terms the English, Hong Kongese, Japanese and Singaporean students performed well. Countries such as Canada, the United States, Italy and Sweden did less well -- quite poorly in fact. Careful interpretation of these results is necessary. Note, first, that there were considerable shifts in national rankings between junior high school performance in Table 2 and senior high school rankings in Tables 3, 4, and 5. In the case of England the change was pronounced, from low ranking (12th out of 15) in junior high school to high ranking (2nd in biology, chemistry and physics) in senior high school. In contrast Canada's ranking fell from high (4th place) in junior high school, to low (11th out of 13 in biology and physics, and 12th out of 13 in chemistry) in senior high school. What is going on here?

Before drawing firm conclusion from the statistics presented in Tables 3 through 5 we have to consider age differences, selectivity mechanisms, and participation rates. See Table 6. In Canada over 70 percent of the relevant high school age group, 17-18 year-olds, are still in school compared to 20 percent in England. In the case of biology, 28 percent of the Canadian students are registered while the parallel figure for England is 4 percent.

Table 2
Science Achievement Scores, National Rankings, and Rho Values
for 14 Year-Olds in 17 Countries, 1988¹¹

Country	Mean Score	Standard Deviation	Percentage Score	Rank Order	Rho
Australia	17.8	4.9	59.3	10	.17
Canada	18.6	4.7	62.0	4	.14
England	16.7	4.9	55.7	11	.19
Finland	18.5	4.2	61.7	5	.05
Hong Kong	16.4	4.5	54.7	16	.29
Hungary	21.7	4.7	72.3	1	.26
Italy	16.7	5.0	55.7	11	.39
Japan	20.2	5.0	67.3	2	.04
Korea	18.1	4.6	60.3	7	.15
Netherlands	19.8	5.1	66.0	3	.50
Norway	17.9	4.7	59.7	9	.02
Phillipines	11.5	4.6	38.3	17	.48
Poland	18.1	5.2	60.3	7	.34
Singapore	16.5	4.9	55.0	13	.56
Sweden	18.4	4.9	61.3	6	.08
Thailand	16.5	4.1	55.0	13	.24
U.S.A.	16.5	5.0	55.0	13	.29

Source: International Association for the Evaluation of Educational Achievement, 1988.
Science Achievement in Seventeen Countries. Oxford: Permagon.

In England, most sixth form students (the equivalent of grades 11 and 12 in Canada) specialize in three "A-level" subjects while most Canadian high school students take 8 different subjects in their grade 11 and 12 high school years. Tables 3, 4 and 5 are comparing the top 28 percent of biology students in Canada with the top 4 percent in England. And similar inequities are to be noted in the cases of chemistry and physics. The fact is that Canada had the highest proportion of its eligible age group taking chemistry of any nation and the second highest proportion taking biology and physics. No country had a higher proportion of its students taking specialized science courses than Canada.

Table 3
Comparisons between 13 Countries in Grade 12 Biology Achievement

Country	Mean Percent	Standard Deviation	Rank Order	Rho
Australia	48.2	13.9	9	.10
Canada	45.9	14.0	11	.20
England	63.4	13.1	2	.20
Finland	51.9	12.8	7	.04
Hong Kong	55.8	16.8	5	---
Hungary	59.7	13.5	3	.38
Italy	42.3	14.1	12	.28
Japan	46.2	15.1	10	.39
Norway	54.8	15.0	6	.07
Poland	56.9	12.9	4	.32
Singapore	66.8	12.8	1	.11
Sweden	48.5	15.8	8	.18
U.S.A.	37.9	15.4	13	.40

Source: International Association for the Evaluation of Educational Achievement, 1988.
Science Achievement in Seventeen Countries. Oxford: Permagon.

Table 4
Comparisons between Thirteen Countries in Grade 12 Chemistry Achievement¹²

Country	Mean percent	Standard Deviation	Rank Order	Rho
Australia	46.6	18.8	6	.20
Canada	36.9	16.0	12	.25
England	69.5	17.2	2	.21
Finland	33.3	13.7	13	.12
Hong Kong	77.0	17.4	1	---
Hungary	47.7	18.3	5	.43
Italy	38.0	23.4	10	.60
Japan	51.9	22.0	4	.62
Norway	41.9	16.8	8	.12
Poland	44.6	17.1	7	.43
Singapore	66.1	17.4	3	.28
Sweden	66.1	16.6	9	.17
U.S.A.	37.7	18.3	11	.49

Table 5
Comparisons between 13 Countries in
Grade 12 Physics Achievement¹³

Country	Mean Percent	Standard Deviation	Rank Order	Rho
Australia	48.5	15.1	8	.15
Canada	39.6	14.6	11	.23
England	58.3	14.9	2	.12
Finland	37.9	13.8	12	.10
Hong Kong	69.9	14.4	1	---
Hungary	56.5	17.2	3	.42
Italy	28.0	12.9	13	.37
Japan	56.1	17.2	4	.42
Norway	52.8	15.6	6	.12
Poland	51.5	17.2	7	.46
Singapore	54.9	13.2	5	.07
Sweden	44.8	14.9	10	.08
U.S.A.	45.5	15.8	9	.38

What needs to be done, of course, is to conduct research designed to compare the top 4 percent of sixth form biology students in England with the top 4 percent of Canadian students; and the same in chemistry and physics. While this was not done in the case of the IEA science achievement study, it was done in the case of the 1986, IEA second international mathematics study.¹⁴ Here the top 5 percent of Canada's grade 12 students ranked 4th out of 11 countries, and less than one third of a standard deviation behind the second and third ranked countries, Finland and Hungary respectively. It should be noted that tables of specification for selecting test items consist of sets of cognitive objectives that range from low-order factual recall items to higher-order items which call for the use of analysis, synthesis, and evaluative cognitive strategies. What Canadian researchers are failing to do is to compare national levels of achievement on the set of higher-order items in each subject matter domain. Such comparisons would give more valid indicators of Canada's international standing at the grade 12 level than present methods. These analyses are conducted by the national institutes of educational research in several countries; but in Canada no such research institute exists, which is odd because they do in the natural sciences and health sciences.

Table 6
Grade 12 Participation Rates in Biology, Chemistry and Physics

Country	Percent in School	Percent of Age Group taking the Course			
		Average Age	Biology	Chemistry	Physics
Australia	39	17.3	18	12	11
Canada	71	18.3	28	25	19
England	20	18.0	4	5	6
Finland	45	18.7	45	14	14
Hong Kong	20	18.4	7	14	14
Hungary	18	18.0	3	1	4
Italy	52	19.0	14	2	19
Japan	63	18.2	12	16	11
Norway	40	18.1	10	15	24
Poland	28	18.7	9	9	9
Singapore	17	18.1	3	5	7
Sweden	15	19.0	15	15	15
U.S.A.	90	17.7	6	1	1

Source: Crocker, R.K., 1990. *Science Achievement in Canadian Schools*. Ottawa: Economic Council of Canada.

Mathematics Achievement

In the 1992 International Assessment of Educational Progress mathematics survey Canadian 9 year-olds came 9th out of 13 countries. Korean 9 year-olds outperformed the rest of the world, but when imprecision of the estimates due to sampling is taken into account there was no statistically significant difference between the aggregate performances of the countries in the second tier (Hungary, Taiwan, Russia, Italy and Scotland). Students from Quebec performed well enough to belong to this second tier of countries. There were 8 percentage points between the aggregate performance of Canadian students and that of the highest performing nation in the second tier. As shown in Table 7 Canada ranked below the half way point in mathematics, but in terms of percentage differences Canada was not all that far behind the leading countries (South Korea excepted). And as we have shown with respect to Newfoundland, a concerted effort by consultants and teachers can sometimes eliminated these performance gaps.

Table 7
Mathematics Achievement Scores and National rankings for
9 Year-Olds in 14 Countries

Country	Mean Percent	Rank Order
Canada	60	9
England	59	10
Hungary	68	2
Ireland	60	9
Israel	64	7
Italy	68	2
Korea	75	1
Portugal	55	14
Scotland	66	5
Slovenia	56	13
Russia	66	5
Spain	62	8
Taiwan	68	2
U.S.A	58	12

Source: International Assessment of Educational Progress, 1992. *Learning Mathematics*. Princeton: Center for the Assessment of Educational Progress, Educational Testing Service.

As noted above Junior high school achievement is regarded as a proxy for the educational level of the work force since in almost all countries students are in school until the age of 14. From the data presented in Table 8 it is seen that Canada ranked 10th out of 21 countries, and that the Canadian mean for 13 year-olds was a mere 4 percentage points higher than the international mean. Canada placed in the third tier of countries along with France, Italy, Israel, Scotland, Ireland and England. These countries clustered together, there being no significant difference between their aggregate mean scores which ranged from 61 to 64 percent. Since some of the highest achieving countries were in Asia it is worth noting that Stevenson and Stigler¹⁵ suggest that Asian students might be performing at higher levels than North American students in mathematics because Asian teachers work from the concrete to the abstract, the reverse of what teachers tend to do in North America. Thus, fractions emerge from meaningful experience with fractions, not from initial understandings of the abstract concept. They write, "Mathematics ultimately requires abstract representations, but young children understand it more readily if it is embedded in a meaningful context than if it is presented as what seems to be arbitrary definitions and rules."

Table 8
Mathematics Achievement Scores and National Rankings for
13 Year-Olds in 21 Countries

Country	Mean Percent	Rank Order
Brazil (Sao Paulo)	37	19
Brazil (Fortaleza)	32	20
Canada	62	10
China	80	1
England	61	11
France	64	7
Hungary	68	6
Ireland	61	11
Israel	63	9
Italy	64	7
Jordan	40	18
Korea	73	2
Mozambique	28	21
Portugal	48	17
Scotland	61	11
Slovenia	57	14
Russia	70	5
Spain	55	15
Switzerland	71	4
Taiwan	73	2
U.S.A.	55	15

Source: International Assessment of Educational Progress, 1992. *Learning Mathematics*. Princeton, N.J.: Center for the Assessment of Educational Progress, Educational Testing Service.

Reading Literacy

The International Association for the Evaluation of Educational Achievement released the results of its reading literacy tests in 1992. At the 9 year-old level the standing of Canada-BC (no other province took part) was reported to be 17th out of 27 countries. At the 14 year-old level Canada-BC was ranked 15th out of 31 countries. The statistical results are reported in Tables 9 and 10. Canada's 9 year-olds had a mean score of 500 with a standard deviation of 80. Alpha reliability was 0.93. Note from Table 9 that the mean scores are bunched; thus, there was no significant difference between the scores for Ireland, Greece, Belgium (French), Switzerland and Slovenia. Six nations ahead of the group in which Canada was a member were also bunched together -- Iceland, Singapore, Norway, France, Italy, New Zealand and Sweden -- and, again, the modest differences between them were not statistically significant. With Finland and the United States in the first tier, Canada-BC would fall into the third tier. Because of this bunching together, and because of the modest differences between the countries in each group, it would seem that Canada was holding its own as a third tier country, and that the problem for educators in Canada would be how to lift standards so that Canada could join Finland and the United States in the first tier.

Note, however, that the mean ages of the students in all 27 countries were higher than those in Canada, and that this was particularly evident in the cases of countries with higher reading literacy standings than that of Canada. The average ages of the United States, New Zealand, Italy, and France samples were a year or more higher than the average age of the Canada-BC sample. Note, too, that the age question is confounded by the fact that in several northern European countries grade one begins at age 7, whereas in North America and much of the rest of the world grade one begins at age 6. Thus, students in grade 3 in Canada would be the same age as students in grade two in countries such as Denmark, Finland and Iceland. From Table 9 we note that the Canadian sample were on average 8.9 years of age, whereas the mean age by country was 9.7.

In the face of this discrepancy, and given that IEA analysts made no adjustments for age, it was decided to adjust the scores for age differences between samples. There were three considerations. First, reading literacy is not a particularly school dependent endeavour. Students well before the age of school entry are exposed to reading demands on a daily basis. Thus, second, children in many countries will already have defined themselves as readers by the age of about six. Third, by the age of ten most children will have experienced four years of schooling, even if not four years of formal reading instruction. Between the ages of 9 and 10 the reading improvement of most children is substantial. This is the age when most children in industrialized countries begin to switch from primary dependence on grapho-phonemic or bottom-up text processing to increasing dependence on syntactic-semantic inferencing, or top-down processing. It is the switch from learning to read to reading to learn.

On the basis of these simplifying assumptions the mean scores were interpreted not as fixed points but rather as indicators of reading potential. And on this basis the IEA scores were adjusted for age differences. The adjusted scores are reported in Table 11. Note that the Canadian mean following adjustment shifted from 500 to 693, so that instead of being 15th

Table 9
Reading Literacy Achievement and Rankings for
9 Year-Olds in 27 Countries

Country	Grade Tested	Average Age	Mean Reading Score	Rank Order
Belgium	4	9.8	507	13
(French)	3	8.9	500	17
Canada-BC	4	9.8	481	22
Cyprus	3	9.8	475	24
Denmark	3	9.7	569	1
Finland	4	10.1	531	4
France	3	9.5	499	18
Germany	3	9.4	503	16
(East)	4	9.3	504	14
Germany	4	10.0	517	9
(West)	3	9.3	499	18
Greece	3	9.8	518	8
Hong Kong	4	10.8	394	26
Hungary	4	9.3	509	12
Iceland	4	9.9	529	5
Indonesia	3	9.2	485	21
Ireland	5	10.0	528	6
Italy	3	9.8	524	7
Netherlands	4	10.4	478	23
New Zealand	3	9.2	515	10
Norway	3	9.7	498	20
Portugal	4	10.0	504	14
Singapore	3	9.8	539	3
Slovenia	3	9.7	511	11
Spain	4	9.6	451	25
Sweden	4	10.0	547	2
Switzerland	4	10.1	383	27
Trinidad				
U.S.A.				
Venezuela				

Source: National Center for Educational Statistics, 1993. *Digest of Educational Statistics 1993*. Washington, D.C.: U.S. Government Printing Office.

Table 10
Reading Literacy Achievement and Rankings for
14 Year-olds in 31 Countries

Country	Grade Tested	Average Age	Mean Reading Score	Rank Order
Belgium (French)	8	14.3	481	24
Botswana	9	14.7	330	31
Canada-BC	8	13.9	522	15
Cyprus	9	14.8	497	22
Denmark	7	14.8	525	13
Finland	8	14.7	560	1
France	9	15.4	549	2
Germany (East)	8	14.4	526	12
Germany (West)	8	14.6	522	15
Greece	9	14.4	509	21
Hong Kong	9	15.2	535	8
Hungary	8	14.1	536	5
Iceland	8	14.8	536	5
Ireland	9	14.5	511	20
Italy	8	14.1	515	18
Netherlands	8	14.3	514	19
New Zealand	10	15.0	545	4
Nigeria	9	15.3	401	29
Norway	8	14.8	516	17
Phillipines	8	14.5	430	27
Portugal	9	15.6	523	14
Singapore	8	14.4	534	10
Slovenia	8	14.7	532	11
Spain	8	14.2	490	23
Sweden	8	14.8	546	3
Switzerland	8	14.9	536	5
Thailand	9	15.2	477	26
Trinidad	9	14.4	479	25
U.S.A	9	15.0	535	8
Venezuala	9	15.5	417	28
Zimbabwe	9	15.5	372	30

Source: Same as Table 10.

Table 11
Reading Literacy Mean Scores and Rankings Adjusted for
Age Differences for 9 Year-Olds in 27 Countries

Country	IEA Score	Age Adjusted Scores	IEA Rank Order	Age Adjusted Rank Order
Belgium/Fr	507	487	13	17
Canada-BC	500	693	17	1
Cyprus	481	456	22	21
Denmark	475	455	24	22
Finland	569	598	1	3
France	531	466	4	19
Germany/E	499	540	18	9
Germany/W	503	566	16	8
Greece	504	593	14	5
Hong Kong	514	466	9	19
Hungary	499	582	18	7
Iceland	518	503	8	14
Indonesia	394	219	26	27
Ireland	509	598	12	3
Italy	529	503	5	14
Netherlands	485	587	21	6
New Zealand	528	482	6	18
Norway	524	514	7	11
Portugal	478	361	23	25
Singapore	515	609	10	2
Slovenia	498	498	20	16
Spain	504	451	14	23
Sweden	539	535	3	10
Switzerland	511	514	11	11
Trinidad	451	445	25	24
U.S.A.	547	509	2	13
Venezuala	383	277	27	26

Canada-BC became 1st. Lest the adjustment is thought to be too good to be true it should be pointed out that independently of this writer, the British Columbia research team was replicating the study on a grade 4 sample -- one in which the mean age level corresponded to the mean of the IEA sample. They found that for this sample the aggregate achievement level was, indeed, higher than that of Finland, the highest ranking country; while at the same time the new analysis confirmed the rankings of the adjusted means results presented in Table 11. Without belabouring the point it is noted that the same adjustments were made for the 14 year-old sample, with the result that the Canadian ranking became second, not 17th. There is evidence from the Statistics Canada Survey of Literacy Skills Used in Daily Activities that most Canadian Provinces would be unable to match the reading standards of children in British Columbia. Nevertheless, the B.C. standard is one that all provinces should aim to attain by the year 2000.

Conclusions

Some of the problems besetting Canadian schools were identified as inevitable consequences of the erosion of the schools' corporate authority. It was argued that as the corporate authority of the schools declined the power of students has increased. A recent Canadian white paper which has suggested the use of educational vouchers as a method of paying the costs of post secondary schooling would seem to be the ultimate enhancement of student power.

Although the critics of the schools claim that standards have declined and continue to decline, there is no hard empirical evidence to substantiate their claims. In fact, cross-national studies of educational achievement suggest that Canadian students may be holding their own in terms of international competition. Most of the evidence cited by the critics lacks a referent or comparison group, whereas in the case of international studies of school achievement the referent is the performance of children of the same age in the same school subjects in other countries.

Since Confederation, schooling in Canada has been viewed as one of the minor responsibilities of government. It is well known that the father's of Canadian federation delegated what they thought to be minor powers to the provinces, keeping what they thought were the most important matters concerning the economy and trade, foreign affairs and defense in the hands of the national government. But while education was assumed to be a minor power with nothing to do with the economy of the country it has turned out to be the single most important feature of national productivity and income growth. Fortunately, the provinces seem to be handling their educational responsibilities efficiently and effectively.

The case of science achievement is impressive on three grounds. First, Canadian students are only marginally behind several leading nations at the elementary school level. There is no reason why performance standards in science achievement could not be enhanced and the current gap closed at this level given consensus about national strategies to be identified later. Secondly, as students move through the school system performance in science improves vis-a-vis the performance of students of the same age in other countries. Compare Tables 1 and 2. Thirdly, while on the surface, the performance of Canadian students in biology, chemistry and physics, during the last year of high school seems weak, on closer examination they are shown to be highly competitive. For example, a higher proportion of Canadian students stay in high school than in most other countries; and a much higher proportion study science subjects than in most other countries. See Table 6. Most important, however, is the fact that the situation is improving. Thus, when the top 5 percent of Canadian students are compared to the top 5 percent in other countries, the Canadian students more often than not come out on top, even when comparisons are made with students in other countries who specialize in only three or four subjects in their last two years of high school.

Mathematics achievement in Canada fell behind the parallel achievements in several Asian countries. Nevertheless, Canadian performances were on a par with those in several European nations, whose scores clustered together. At both the elementary and junior high school levels Canadian students fell into the third tier of countries. Within each tier or cluster there were no statistically significant differences in performance. Nevertheless, mathematics achievement is at best satisfactory, and needs to be taken far more seriously by school authorities.

In 1992 the International Association for the Evaluation of Educational Achievement released a misleading report about the performance of Canadian students in reading. A retraction is still not forthcoming. The statistics released had not been adjusted for substantial age and grade differences in reading. Canadian grade 3 pupils were being compared invidiously with pupils in grade 4, and in one instance pupils in grade 5. Most of the students in the leading countries were around a year older than the average Canadian student. When adjustments were made for these age-grade discrepancies Canadian students ranked first in reading at the age 9 level and second in reading at the 14 year-old level.

From Tables 1 through 5 it is noted that there are substantial amounts of school achievement variance lying between schools. Implicit in this finding is the notion that not all Canadian schools are equal. Provincial governments are beginning to address this problem through a program of research designed to construct accurate educational indicators. There are three other relatively modest ways (in terms of cost) of promoting greater uniformity of educational standards across the nation. First, in nearly all the countries with world class educational systems, there are national curriculums, and in most of these countries four subjects constitute the curriculum core; namely, mother tongue language and literature, mathematics, science and a foreign language (in some countries more than one). Perhaps the day has come to recognize that in terms of national interest not all school subjects are equal, and that it would be educationally sound to promote national standards in these four areas as is proposed by the Council of Ministers of Education, Canada in their School Achievement Indicators Project.

Second, most of the high performing school systems have some 190 to 200 instructional days in the school year. In each instructional day, instructional time averages 300 minutes (there is some variance between the early grades and the secondary school grades), giving around 1,000 hours of instructional time per school year. With the notable exceptions of Alberta, Manitoba, and Saskatchewan Canadian school systems fall short of meeting these international standards. In some jurisdictions this might be all that is necessary to bring standards up to the international level. Third, following the recommendations of the Newfoundland Royal Commission on Education, consideration might be given to the introduction of national accreditation procedures both in faculties and colleges of education, and in the nation's high schools.

Two expensive but essential initiatives are unlikely to be introduced without substantial Federal support, and both deserve early attention if governments have long term national interests at heart. These are: (i) pre-school education for 4 year-olds, and (ii) a post-secondary scholarship program based on competitive examination in the four core subject areas of schooling identified above. These expensive items would bring Canada up to par with countries such as France, Germany, the Netherlands, and England.

The report card entry for Canada might read then as:

Canada is performing well in science and reading but mathematics' performance is disappointing. Improvement in all three subject areas is expected.

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NOTES

1. IEA, 1988. *Science Achievement in Seventeen Countries*. Oxford: Permagon.
2. Michael Bliss, 1994. *Right Honourable Men*. Toronto: Harper Collins.
3. D. Crane, 1992. *The Next Canadian Century: Building a Competitive Economy*. Toronto: Stoddart Publishing.
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5. A. May, 1990. Presentation to the Standing Committee on Industry, Science and Technology, Regional and Northern Development. Ottawa: Natural Sciences and Engineering Research Council.
6. See studies by Arthur Foshay and Torsten Husén. A.W. Foshay (Ed.), 1962. *The Educational Achievement of Thirteen Year-Olds in Twelve Countries*. Hamburg: Unesco Institute for Education; and T. Husén, 1967. *The International Study of Achievement in Mathematics: A Comparison of Twelve Countries, Vols. 1 and 2*. Uppsala, Sweden: Almqvist and Wiksell.
7. See Robitaille, D.R. and R.A. Garden, 1989. *Canadian Participation in the Second International Mathematics Study*. Ottawa: Economic Council of Canada.
8. See Crocker, R.K., 1990. *Science Achievement in Canadian Schools*. Working Paper No. 7. Ottawa: Economic Council of Canada.
9. Rho is an intra-class correlation coefficient (Kish, 1987) indicating the extent to which student achievement in each country clusters within schools. In the Canadian case a modest 12 percent of the variance in elementary school science achievement is between schools, and the remaining 88 percent is between students within schools. See Kish, L. 1987. *Statistical Design for Research*. New York: John Wiley.
10. Information in this paragraph is based on personal communication with Ms. Patricia Maxwell, Mathematics Consultant, Division of Curriculum and Instruction, Department of Education, Government of Newfoundland and Labrador, in September, 1994.
11. Source: Same as Table 1.
12. Source: Same as Table 3.
13. Source: Same as Table 3.

14. The source of this information was Table 375 in The National Center for Educational Statistics, 1991. *Digest of Educational Statistics 1991*. Washington, DC.: U.S. Government Printing Office. NCES identified their source as a contractor report based on the "Second International mathematics Study" conducted by the International Association for the Evaluation of Educational Achievement in 1986.
15. H.W. Stevenson and J.W. Stigler, 1992. *The Learning Gap*. New York: Summit Books.

PURSUING TOTAL QUALITY STAFF DEVELOPMENT

R. Lloyd Ryan
Assistant Superintendent
Notre Dame Integrated School Board
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Not so long ago, we all believed in the virtues of continuing education, especially the inservice variety. It is strange, is it not, that the former adjective, "inservice," qualifying the type of continuing education, has evolved into a noun. INSERVICE now stands alone - in more ways than one.

INSERVICE is a funny animal. Everybody believes it to be necessary, but the product itself does not enjoy a great deal of popularity (Nicholson & Joyce, 1976). While the invective may not now be quite as severe as it once was, many teachers are still not greatly charitable in their assessment of their inservice education experiences. Many inservice providers are undoubtedly puzzled and are probably asking "Why is this? Why do teachers not appreciate the inservice that we burn our buns preparing for them? What do teachers want, anyway?"

In any review of the inservice continuing education literature, there is one lesson that seems to come through quite strongly. That lesson is that teachers want to be INVOLVED in their inservice.

Being somewhat of an amateur semanticist in my personal search for meaning, I wondered what INVOLVEMENT meant, but found that the literature did not clarify the meaning. What I did discover was that everybody using the term had his/her own assumed personal meanings.

I wanted to give the word back its meaning, because I thought that it would be useful to do so. I undertook a piece of research to find the meaning of "involvement," as it applied to teachers and inservice continuing education or inservice staff development.

The task that I set out to do was a difficult one, I found, because the words "inservice" and "continuing education" and "staff development" have also lost their meanings. One organization, the National Education Association (1966), for example, suggested that camping constituted inservice teacher education. It appeared that a great variety of experiences could qualify as inservice teacher education. So it was in the context of fluid meanings of words and slippery concepts that I tried to determine what teacher "involvement" in inservice education might mean.

People are complex beings. Becoming a teacher means that the human being becomes even more complex. At one time we believed that once a person turned 21, then s/he was an adult and continued on without much change until senility. The eventual recognition of the female, and later still the male, menopause caused beliefs to change. Eventually, through the research of people like Gail Sheehy (1981, 1982) and Patricia Cross (1981), we came to realize that adults are undergoing almost constant change - physically, cognitively, sensually, emotionally, socially, attitudinally, morally, egotistically, personally, mentally, psychologically, self-conceptually, aggressively, sexually, relationally, and so on. We now know that the typical adult is a virtual maelstrom of change and that very few of our stereotypes are valid. The manifestations of these changes were investigated by a research group at the Ontario

Institute for Study in Education (Miller, et al, 1982; Miller & Taylor, 1983) who discovered, for example, that as male and female teachers progress through their careers, they perceive themselves and their careers differentially and they develop different career aspiration patterns. For example, after a certain age and career stage, male teachers typically abandon their aspirations to promotions to administrative positions, while female teachers experience an awakening in their administrative aspirations.

One of these significant changes characterizing adults is that they change as learners. Malcolm Knowles (1980) calls the related knowledge ANDRAGOGY and suggests that adult learners, such as teachers, want their wealth of experience to be acknowledged and to be used as a learning resource; they want greater independence and self-direction in their learning experiences; they want new learning to meet their real-life needs; and they want their learning to be goal-directed or performance-centred. Some of the implications of this new knowledge are: (i) inservice has to have an emphasis on experiential techniques; (ii) it has to have practical application; and (iii) it has to provide initial experiences to help teachers prepare for the new learning.

Other researchers (e.g. Schaiper & Delforge, 1982; Dunn & Bruno, 1985) have inferred from their research that adults have different preferred and optimal learning styles. For example, some prefer field-dependent, and others field-independent methods; some prefer auditory methods but others are more comfortable with visual, or tactile components. Other researchers talk about various conceptualizations of learning styles: visual language, visual numeric, auditory language, auditory numeric, tactile concrete, social individual, social group, concrete random, abstract random, concrete sequential, abstract sequential, oral expressiveness, and written expressiveness. These theorists claim that teachers will prefer some, maybe personally-unique, combination of these learning modes. One researcher (Guild, 1988) says that "every individual has basic fundamental patterns and approaches...as learners" (p. 2), that these styles can be identified, and that they can be taken into account when staff development activities are being designed. He also says that individuals study and organize differently, and that different staff development decisions about materials demand different instructional styles.

Related to these findings are those having to do with career stage. Several researchers (e.g. Neugarten, 1968; Kimmel, 1980) have discovered that people have unique personal ambitions and that they are always checking their career timetables to determine whether they are on track with their life plans. If they are on-course, they appear to be somewhat satisfied; if they are not on-course, if they are not achieving their aspirations, then dissatisfaction begins to set in.

There is a significant lesson for educational administrators and other inservice providers in these findings. It appears that a great many teachers are not finding fulfilment in their careers. They feel that they are not making valuable personal contributions and that their contributions are not recognized. Consequently, they begin to pursue other interests outside of school where they do find either personal self-fulfilment, or recognition for their achievements, or both. That is, their energies are directed away from their jobs and they do not invest the effort and energies into teaching responsibilities as they might otherwise, at one time, have done.

The challenge for principals and other administrators, here, is two-fold. Firstly, administrators have to try to enhance jobs so that teachers are able to develop a sense of self-fulfilment from them, and secondly, undoubtedly related to the first,

administrators have to let teachers know, individually, that their contributions are recognized and that the teachers, as people, are appreciated and valued.

All of this is made to appear more complex, from a research perspective, when the literature of psychiatry is added to the mix. Then, we find that a person's behaviour is a function of personality and that personality is a function of personal experiences, at least to a significant degree. For teachers, some of these experiences are, of course, those having to do with past involvement in inservice continuing education.

It appears that the most significant experiential component affecting a person's psychological structure is the matter of general satisfaction, which seems to have an inverse relationship with the cumulation of stress related trauma. Again, continuing education experiences can play a significant role.

Numerous researchers have documented the degree of teacher stress and its dysfunctional effects, both personally and professionally. There is almost unanimous agreement (Moorhead, 1983; NTA, 1983; Rogers, 1992; Sparks, 1979) that teacher stress is quite high and that teachers at all teaching assignments and at all ages experience it. The effects of stress, popularly called "burnout," is readily recognized, and follows a sequence: lack of enthusiasm, stagnation, frustration, and apathy (Freudenberger, 1986). This results in deteriorating job performance and morale, gradual loss of confidence, diminished self-esteem, lack of creativity, poor performance, conservatism, fear of change, less patience with children, ulcers, high blood pressure, allergies, heart attacks, mental breakdown, (e.g. Selye, 1981; Kaiser & Polczynski, 1982; Moorhead, 1983) and general physical, emotional, and attitudinal exhaustion (Scrivens, 1979), and so on.

Probably, one of the most significant findings in the teacher stress literature is that there is one major culprit contributing to teacher stress ... and that is administrative behaviours (e.g. Lambert, 1968; Schroder, 1971; Holdaway, 1978; Moorhead, 1983). One might take some comfort (but it is cold comfort) from the research findings that indicate that the same is true of many business and industrial settings, where worker stress can be traced substantially to the behaviours of their managers and supervisors.

This relationship between the behaviour of principals and teacher stress is manifested in a number of ways. From one study in Ontario (Morehead, 1983) it was concluded that teachers' least complementary remarks are reserved for district administrators, supervisory people, and their principals. Teachers called them inept, incompetent, unreasonable, and inflexible. In particular, teachers seemed to resent the lack of involvement they had in decision-making which affected them. Another researcher (Scrivens, 1979) claims that teachers feel used, and are frustrated because their principals force fads on them. The experience of Sentinel Secondary School (Gould, 1993) is a dramatic example.

Related to this, Matteson & Ivancevich (1979, 1980) claim that teachers are stressed because of a lack of support from their principals, lack of status, poor communication, and other factors over which teachers have little control. Other researchers (Blase & Matthews, 1984) say that principals do not provide recognition to teachers for their accomplishments. They say that teachers feel manipulated, helpless, impotent, and frustrated over lack of possibilities for input. Another researcher (Unger, 1986) says that when teachers feel that they have little control over their professional lives, they become less productive.

This is not surprising, of course. It is pretty well an accepted phenomenon, now, that when people lose a sense of personal control, they become depressed and cease to strive. We see the same thing happening to students at school. Deming (1990) says that all humans want to be effective, and Rhodes (1990) says "that [people] are purposeful cognitive beings intrinsically motivated to seek satisfaction through the accomplishment of their purposes" (p. 34)

Now, the positive news is that principals have it within their power to reduce teacher stress (Ratsoy, 1986; Dubrin, 1981; Bailey, 1983). A number of researchers (Bailey, 1983) have pointed out that it is within the power of principals to determine the organizational climate of his or her school. These researchers say that principals have to assist teachers in believing that they are successful. One of the most effective ways to achieve this is for principals to ensure that teachers have a real voice in decision-making. Other researchers (Moorhead, 1983) say that principals must develop better human relations skills, better communication skills and processes, and must develop a more caring attitude toward teachers. Some of this will be fostered by frequent and meaningful consultation between teachers and their principals. It is worth noting that Deming says that between 80% and 90% of organizational problems are caused by the system and processes extant (Schenkat, 1993).

None of this should seem new or surprising. It is just well-known psychological phenomena now put in principal and teacher terms. Everybody knows about Maslow's hierarchy and how it is commonly accepted that the human being strives toward self-actualization - to be all that s/he can be. More than anything else, people need the approval of others, and they need to have their self-esteem supported and strengthened.

That is not to say, nor does most of the research suggest, that teachers have to be involved in all school-level decision making. There are several practical deterrents. Firstly, teachers simply do not have the time, even if they had the inclination. Secondly, teachers are not willing to spend the necessary after-school time in all the meetings that would be required. Thirdly, most teachers want to be recognized as professional people, and want their principals to help create a supportive environment so that they can get on with their job. Fourthly, there are simply too many decisions to be made. Somebody has to make the daily and hourly decisions which keep a school operating. Clearly, then, the role of the principal is not being eroded. Some of the literature on "restructuring" seems to be suggesting something otherwise. However, it appears that the "no administrator needed" notions are being advocated by people who have had very little exposure to the realities of schools.

It has to be noted, though, that there are decision areas which directly affect teachers, and the literature seems virtually unanimous that teachers should be playing key roles in related decision-making. One of these decision areas is the matter of inservice continuing education. The wealth of research on inservice education is pointing very strongly toward the principle that teachers want to be involved in planning and carrying out their inservice, and they want opportunity to individualize their inservice experiences so that these experiences will be personally relevant. There is, also, the supportive psychological phenomenon that is sometimes called "ownership". This translates into teachers perceiving as more relevant, useful, and meaningful those inservice education experiences in which they have had active decision-making roles.

In research, conducted by Ryan (1989), in which 400 teachers in nine school districts were surveyed, teachers were asked to what degree they wanted to be involved

in the various processes of curriculum development for their inservice activities. The resulting data were analyzed with respect to teacher age, sex, education, teaching experience, career stage, job satisfaction, type of teacher training, and type of teaching assignment. The teachers were asked to what degree they wanted to be involved in the full gamut of activities characterizing the development and expediting of inservice activities. These inservice curriculum development activities were perceived to be (a) developing philosophy, (b) setting objectives, (c) determining content, (d) selecting materials, (e) choosing techniques, (f) sequencing activities (i.e. developing the learning plan), (g) evaluating the success of the efforts, and (h) revising the total experience and planning follow-up activities.

Analyses revealed that there were some differences in the patterns of involvement which teachers prefer, and that these differences had to do with sex, age, education, and teaching assignment, primarily. In general, older, male, better-educated, and secondary teachers want more involvement in the various aspects of inservice than younger, female, lesser-educated, and primary teachers. However, it would be an over-simplification to leave things there. In actual fact, some teachers want some involvement in some aspects of the inservice curriculum development sequence, and almost no involvement in other aspects. That is to say that it is virtually impossible to look at a particular teacher or group of teachers and be able to predict what degree of involvement he, she, or they will want in a particular aspect of planning and expediting their inservice staff development.

The elegantly simple conclusion is that if one wants to know the pattern of involvement that individual teachers prefer in planning for and expediting inservice education, it will be necessary to ask them, individually. Furthermore, it should be expected that the pattern of involvement that a particular teacher wants will change over time, and may change radically from one inservice activity to another. In other words, although it is true that teachers want to be involved in the decision-making for their inservice, they simply have to be consulted about their individual desired type and intensity of involvement if the inservice activities are to be worthwhile.

It is important not to fall into the jargon and cliché trap. However, it is vital to emphasize that teachers do need to be involved in collaborative decision-making, especially if they are going to be affected by the decisions. Very few decisions made in schools will affect teachers more directly than those having to do with inservice education. Not only will teachers feel better about themselves if they are involved in inservice-related decisions, but that collaborative involvement will help create a climate in which principals can have much more professional interaction with teachers. When teachers feel good about themselves, they will feel good about the principal, and will be much more conscientious and effective. Furthermore, when teachers are involved in the inservice-related decisions, the resulting inservice activities will be of higher quality, generally; the activities will be more relevant, and teachers - now having accepted a degree of psychological ownership for the inservice activities - will become much more positive in their perceptions of the specific inservice activities, as well as of other inservice activities, especially if other teachers have a hand in planning them.

While the word is used with reluctance, simply because it has already begun to lose its meaning, "empowerment" (Maeroff, 1988) will be gained, to some degree, by teachers when principals and teachers work together collaboratively, with mutual respect and cooperation, on inservice, and on other issues. From a psychological perspective, teachers are given some power over their own futures and feel more personal control over their own lives.

It is not being advocated that principals relinquish any of their authority as principals. That is not the point at all! The principal will still be principal. Neither is it a matter of "democratic decision-making", which means nothing more than everybody-making-a- decision-and-nobody- taking- responsibility-for-it.

Having teachers involved will mean that they will participate in all aspects of inservice curriculum development. It also means that they will be involved in needs assessment, for example. In other words, they will be consulted; they will have input; they will be listened to; their opinions and advice will be considered; and their perspectives will be taken into account when the final decisions are made. In fact, there should be occasions when they, or their representatives, will make the final decisions.

A related inservice truth is that if inservice activities are not based on adequate needs assessment, then the resulting inservice activities have no valid reason to occur. One of the first phases of any inservice activity sequence is adequate needs assessment. Furthermore, needs assessment simply cannot be credibly conducted without teacher participation.

There is an interesting question related to this issue: "Do teachers know what their inservice needs are?" There are two answers, an unqualified "yes", and an unqualified "no". Some advocates say "Yes, because teachers are professional people"; others say "Yes, because we have to trust teachers". In fact, neither of these reasons supports the "yes" response. Teachers can be professional, and we can trust them, but that does not answer the question whether they do, in fact, know what their inservice needs are.

The more rational and supportable response to the question is that SOME teachers know SOME of their inservice needs SOME of the time. In fact, they will likely know some of their inservice needs that cannot be identified any other way than by asking them -and for that reason they should be involved in needs assessment. But, the principal, supervisory personnel, and other teachers will also be in a position to recognize inservice needs that individual teachers will not recognize, simply because it is extremely difficult for individuals to look at themselves and see their professional "needs" objectively and dispassionately. Furthermore, it is the principal's responsibility to students, and to parents, to ensure that teachers receive the inservice education that is needed to support and foster student success, regardless whether teachers see the need or not.

The caution is that school administrators can no longer decide for teachers that they are going to be summoned to some central location, where they will be talked to by some "expert", and then told to go back to their classrooms like good little boys and girls and do like the man said. That whole process has been demeaning; the teachers have gone back to their schools and said that it was all a waste of time, which it usually has been!

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**FACULTY OF EDUCATION SURVEY OF RECENT
GRADUATES: EMPLOYMENT OPPORTUNITIES,
CURRENT POSITIONS, AND VIEWS ON PREPARATION**

**Ern Cluett, Leroy Klas, Joan Netten
and Glenn Clark
Faculty of Education**

Summary Report Prepared by

**Joan Netten
Faculty of Education
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A study of recent graduates of the Faculty of Education was undertaken in the Fall of 1992 in order to determine their employment status, degree of satisfaction with current employment and satisfaction with preparation for teaching. Recommendations for revisions of the teacher preparation program at Memorial were also sought.

A questionnaire was developed and mailed to the home addresses of all graduates of the Faculty of Education for the three years 1986, 1988 and 1990. Difficulties were experienced in tracing graduates, and further measures were undertaken in an attempt to locate additional graduates through cross-reference with the Department of Education. As indicated in Table 1, a 25 percent sample of the total population was attained. Characteristics of the respondents were compared with those of the total population, and an analysis of a random sample of late responses was also performed. While there were some differences between the groups, it was judged that the surveyed population was sufficiently representative of the total intended population to warrant proceeding with the analysis of the data.

**TABLE 1
NUMBER OF RECENT GRADUATES SURVEYED**

Populations	Number	%
Total population	2187	100
Untraceable	600	27.4
Did not respond	1044	47.8
Responded	543	24.8

Results of the survey give some interesting insights into employment patterns, current positions and views of recent graduates. However, conclusion must be treated with some caution.

Profile of the Respondents

Respondents to the survey represented the geographic distribution of the teaching force in the Province, with the exception of the Avalon region. This result may be indicative of the difficulty of obtaining positions in this region for recent graduates. Respondents also tended to be somewhat older than might have been expected. Over 40 percent of respondents were 31 years of age or older, and nearly 30 percent of this group were 36 years of age or older. Since a considerable number of respondents were recipients of a second degree or diploma, these results suggest that many recent graduates of the Faculty of Education are not first-time graduates.

Employment Patterns

Results of the survey indicate that respondents may be divided into three broad categories. About one-third found employment prior to graduation; some respondents in this group are graduates who are not first-time graduates and would not be actively seeking employment as they could well have been on leave of absence from their school districts. Another one-third obtained a permanent position within a year after graduation, while a further one-third found only temporary positions, or are unemployed. These data are summarized in Table 2. About 10 percent of respondents had been employed outside of Newfoundland, primarily in other Canadian provinces.

TABLE 2
EMPLOYMENT STATUS OF RESPONDENTS ON GRADUATION
n = 543

	n	%
Seeking employment	359	66
Already employed	165	30
No response	19	4
Total	543	100

Information gathered by the survey suggest that there are basically two types of career patterns: one for those who obtain a position prior to or within a year after graduation and another for those who do not find a permanent position in the same time frame. Most recent graduates have held several positions, those in the first category holding an average of two before finding permanent employment. Those in the latter category have generally held three or more positions. As the time elapsed since graduation increases, the probability of finding permanent employment decreases. It may be hypothesized that this result is caused by competition from even more recent graduates.

TABLE 3
TIME REQUIRED TO FIND PERMANENT FULL-TIME POSITION

n = 543 (total respondents)
n = 377 (seeking employment after graduation)

	n	% of Total Respondents	% of Respondents Seeking Employment
By graduation	166	30	-
Less than one year	160	29	42
1-2 years	67	12	18
3 or more years	28	5	7
No permanent position	106	19	28
Unemployed*	31	6	8
Total	558**	101*	103**

* due to rounding

** some respondents placed themselves in more than one category.

However, there is also evidence to suggest that the younger graduates, that is those from age 20 to 30, who are also first-time graduates, have experienced considerably more difficulty in obtaining positions than did their older colleagues. Respondents in the 20-30 age groups have held a greater proportion of substitute, replacement and part-time positions than their older colleagues. They have also already held more positions, generally, and more positions in rural areas, than their older colleagues. There are also indications that more of the youngest age group, that is those 20 to 25 years old, have experienced even more difficulty in finding employment than was the case for those who graduated five or fewer years previously. These findings suggest that more of the most recent graduates find themselves in the second career pattern.

Subject area specialization may facilitate obtaining permanent employment, particularly at the high school level. There is evidence to suggest that recent graduates prepared for French, particularly French immersion, mathematics, religious education and special education have experienced the most favorable employment opportunities. However, it is interesting to note that a number of special education graduates are not working in their area of specialization. Teachers of religious education spend only about 50 percent of their time teaching in their area of specialization, yet are amongst those who find employment most quickly. It must be assumed that recent graduates in these two areas are considered desirable for reasons other than their academic area of specialization. It should be said, however, that the areas of specialization targeted by the school system will change with priorities, and the finite number of positions available. There are indications, for example, that recent graduates

prepared to teach entrepreneurship find employment quickly, but the incidence of such instances was very low.

It is also worthy of note that a number of graduates have obtained positions prior to the completion of their qualifications. Many of these positions have been in the substitute, replacement or part-time category, and the larger proportion appear to have been at the primary or elementary levels. A number of graduates who return to university for a second degree or diploma have also held positions before receiving the appropriate qualifications for the area of specialization. These findings suggest that, once graduates enter the school system, they are able to stay in the system and adjust to meet its needs. Because of this situation, gaining entry into the system may appear to some a more important consideration than completion of the appropriate qualifications. These data also suggest that there is a continuing need in the school system for qualified teachers who are able to accept temporary positions.

Several other characteristics of the career patterns of recent graduates also emerged. Age is a distinguishing factor; regular classroom positions are held by those recent graduates under 40. Special education teachers and those associated with guidance and counselling tend to be in the mid-age range from 31 to 40. The largest number of positions per respondent have been held by the 26 to 30 age group, which also has a higher proportion of positions as all-grade teacher and multi-grade teacher. The largest number of graduate students and the largest number of unemployed are those in the 20-30 age groups.

Geographic region was a more important factor than rural/urban distinctions for respondents. The problem of the need to find a position in a particular geographic region was explored. Only 16 percent of respondents indicated that they were limited to a position in an urban or a rural area, but 30 percent indicated that they were limited to a particular geographic area. About half of these were limited to the Avalon region and another 20 percent to the Western part of the Province. More respondents indicated that they were limited to a position in another Canadian province than to the Central, South or Labrador regions of the Province. The smallest number of positions per respondent was reported in Labrador and the South; however, the largest number of positions in excess of the normal proportion of the teaching force has occurred in the South. This finding suggests that a large number of recent graduates have been employed for a short period of time in the South, and that the teaching force in this region tends to be more transient.

Some rural/urban differences were apparent. More positions per respondent are held in rural areas. It is also interesting to note that more positions in rural regions require the teaching of some subject areas for which respondents were "not-at-all" prepared.

Some gender patterns for employment are evident. Certain positions, such as that of primary and elementary teacher, are generally held by females. While an increasing number of administrative positions are held by women, special education, guidance, and other counselling related positions appear to be the preferred career choice for recent women graduates. Females also held a higher number of positions per respondent than most males. Women graduates are also more likely to be restricted to finding employment in a particular geographic region, most often in an urban area or in the Avalon region of the Province.

Employment in Non-School Settings

It appears that a very small proportion of recent graduates have been employed in a non-school setting. There were 95 instances of recent graduates holding positions in what were described as "non-school" settings. Sixty percent were actually employed while 40 percent were graduate students. Only 34 instances were in settings "not-at-all" related to education, the other instances being related to some sort of child care or preschool. The majority of respondents indicated that they had accepted such employment either because they were married/engaged or because they preferred to live "in a large centre." About one-third of those recent graduates who described themselves as employed in non-education settings would like to return to education.

Recent graduates employed in education were also asked if they wished to change to a non-education setting. About one-quarter of the respondents (118) indicated that they would like to change. Reasons for preferring a non-education setting were requested, but only 16 respondents answered this question. Half of the reasons given were associated with the need to obtain a permanent full-time position rather than a temporary one in education.

Degree of Satisfaction with Current Position

Satisfaction levels were relatively high, as about sixty percent of recent graduates appear to be content with their present position. About one-quarter of respondents indicated that they would have preferred to work in another community. Of these respondents the two most frequent preferences were "hometown" or a "larger community." About one-fifth indicated that they would prefer to work in another school. Of this group, the largest number were seeking more compatible working conditions. Less than 10 percent of this group (14 respondents) wanted to change in order to obtain a full-time position. About 30 percent of respondents indicated that they would prefer another type of school position. It is interesting to note that nearly one-quarter of this group would like to be either a special education teacher or a guidance counsellor. This finding suggests that these positions appear to be very attractive. However, three-quarters of those desiring another type of position indicated that they desired a position as a regular classroom teacher. Of these respondents over three-fifths were in the 20 to 30 age categories. These findings suggest that it is the most recent graduates who are most dissatisfied with their current position and that a large proportion of this group may not as yet have found permanent employment in the school system. It may be hypothesized that they have accepted a position because it was the only one available.

For those who would like to locate elsewhere but do not do so, reasons were requested. The main reason given for not being able to relocate was that the respondent was married or engaged.

Respondents were also asked if they would be willing to accept a teaching position outside of the Province. Forty percent of those who responded to the question indicated that they would be willing to take a position elsewhere in Canada, but only 17 percent indicated that they would be willing to take positions outside of Canada. It is important to note, however, that only one-half of the respondents answered this question.

Degree of satisfaction with employment is also a factor of adequacy of preparation. When teachable subject area was cross-tabulated with the degree to which the respondents' current position was related to subject area specialization (i.e. - directly, partially, or not at all), some interesting differences were found. Respondents teaching at the primary and elementary levels reported a greater congruence between preparation and current position than did teachers at the secondary level. Of this second group, almost 70 percent of those prepared for mathematics and French and 60 percent prepared for science are directly employed in their area of preparation. Only about half of those prepared teach English and social studies teach directly in their area of specialization. The degree of comfort of the teacher with the other areas taught, it may be hypothesized, would be a factor in assessing degree of satisfaction with current employment.

Effectiveness of Preparation

Recent graduates rated their overall preparation for employment as fair to satisfactory. Some differences in components did appear in the data analysis. Respondents felt that the internship prepared them significantly better for both their initial and subsequent positions than did their course work. Respondents did, however, feel that their course work prepared them for subsequent positions better than for their first-position. It is possible that a number of recent graduates were faced with teaching different subjects and/or grade levels in order to get their first position, but were subsequently able to move to a position more closely linked with their preparation.

In their evaluation of their field experiences, the number, duration, and quality of these experiences were generally rated poor to fair. The only component which the respondents rated highly was the adequacy of their field supervision. The role played by the university supervisor was rated satisfactory, but the supervision of the co-operating teacher was rated significantly higher than that of the faculty supervisor.

The role played by faculty in the delivery of courses was rated satisfactory.

Of the various skills addressed by the teacher preparation program in the Faculty of Education, respondents indicated the two most important components to be general classroom techniques and subject specific ones. The nature of the learner (i.e., development, needs, exceptionality) ranked third.

Those skills which respondents felt to be most lacking in their preparation included classroom management strategies (i.e., discipline), sufficient field experiences, scheduling and organization. Counselling and inter-personal relationships were also frequently cited as areas needing more attention in the pre-service preparation.

Feelings of Competence in Current Positions

Recent graduates of the teacher education program consider themselves to have good levels of competence on nearly all competencies questioned. Almost all scores were close to 4 (good) on the Likert scale. Five items whose scores were less than 3.5 were still above 3 (lowest = 3.2). These items represented a very mixed set of competencies: knowledge of the Canadian and Newfoundland school systems, knowledge of governance of schools, competence to assist students in selecting their own learning objectives and activities, competence to use the results of system-wide

tests to plan instruction, and ability to meet the needs of special needs students. As might be anticipated, graduates from special education rated themselves much more positively in the last two categories than did those from non-special education programs. However, it should be noted that system-wide tests are much more likely to be intended to support instructional decisions for those involved in special education than are such tests in other areas which tend to be primarily summative.

Graduates of high school training program options scored lower than others on a number of items. Of particular interest are those which dealt with planning and sequencing of instruction. These findings would suggest differences in the preparation program of the high school trained respondents, as compared with the preparation of respondents who followed other programs.

Stressors

Seven stressors were suggested to respondents who ranked their importance. Discipline and time management received the highest rankings. Respondents also indicated that meeting professional and personal goals was a third aspect which caused them considerable stress. By far the least stressor was getting along and working with other teachers.

Some differences across teacher groups did emerge for the ranking of stressors. The most important was that counsellors found parent-teacher interviews much less stressful than regular classroom teachers who has had no preservice preparation in this aspect of their work.

Components of a New Program

Respondents were also asked to make suggestions for areas to be included in the revision of programs currently being undertaken by the Faculty. Respondents indicated that any new program in the Faculty should maintain the internship and other field experiences. The other two major areas which should be included were subject specific methodology and the category described as "other" which included such examples as testing, counselling, and classroom management.

Respondents suggested some changes for the arts and science component of their program. Of the sixteen categories mentioned, items such as better laboratory experiences, more on computers, and more French were cited. However, all of these suggestions were of relatively low incidence.

Changes suggested for the professional component of the program highlighted practice rather than theory. Respondents felt that more field experiences should be added, and that there should be more emphasis on practice. A number of other aspects were mentioned, such as training in classroom management, integration of special needs students, computers, and stress management, among others. However, the incidence of these latter categories was relatively low.

Conclusions

The results of the survey give a positive picture of teacher education programs at Memorial.

Of the recent graduates who responded to the survey, eighty percent have found employment in the Province. Slightly over ten percent have found employment elsewhere, primarily in other Canadian provinces, and less than ten percent remain unemployed. However, twenty percent of recent graduates have found only temporary employment, and about ten percent have found employment in non-education settings. Thus, about sixty percent of recent graduates have found permanent employment in the education system of the Province.

Most recent graduates have filled at least two temporary positions before finding permanent full-time employment, and those graduates who do not secure employment prior to or within a year after graduation are much less likely to obtain a regular classroom position. Recent graduates specializing in French, mathematics and religious education have found employment more quickly than those secondary teachers specializing in other areas.

Two-thirds of recent graduates express satisfaction with their current positions. The largest number of those desiring another position appear to be those who have not yet obtained a regular position as a classroom teacher. Other reasons for desiring change are related to inter-personal relations or to the desire to be located closer to home or in a larger community.

Most recent graduates appear to be satisfied with their preparation. They consider themselves to have good competencies in most skill areas. Special education graduates appear to be better prepared to deal with interpersonal relationships, as well as special needs students. Graduates of the high school options report some deficiencies in lesson planning and organizing instruction.

Respondents consider their field experiences as more beneficial to them overall than their course work. However, courses in subject specific methodology and the nature of the learner are felt to be of particular importance, as well as general classroom techniques. The skills respondents felt needed more attention in preservice preparation included classroom management, time management, organization of instruction and interpersonal relations. Classroom management and time management proved to be the highest stressors.

Recommendations from respondents indicate that program revision should address primarily the need for more emphasis on practice in the degree programs of the Faculty of Education.

IMPLEMENTING CHANGE: A SUCCESS STORY

Bruce Sheppard
Faculty of Education, M.U.N.
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The Context

Recently, schools have come under increasing attack as educators and parents begin to question the effectiveness of school programs and educational methodologies employed (DeMont, Fennell, & Quinn, 1993a, 1993b; Economic Council of Canada, 1992; Levin & Young, 1994; Nikiforuk, 1993). Some of those critics argue for a return to the "basics" and have blamed progressive approaches for perceived weaknesses. Some of the forces that appear to drive such a call for renewal are as follows: the growing existence of a global market, declining resources for education, competitive career opportunities, and declining confidence in public institutions (Change & Challenge, 1992; Drouin, M. & McCamus, 1992; Levin & Young, 1994; Royal Commission, 1992; 'Kindergarten to Grade 12 Education Plan', 1994). In 1990, the Government of Newfoundland and Labrador, Canada, appointed a Royal Commission of Inquiry to assess the existing K-12 educational system and to recommend an appropriate vision for change (Royal Commission, 1992). A major recommendation of the Commission was directed at restructuring to reduce the number of school boards and to provide more ownership of the system at the local level. An essential component of this restructuring is to develop new models of school administration which recognize the need for collaboration among teachers and school-based management. This approach to reform is quite common throughout the world and has become a recent trend in Canada (Caldwell, Smilanich, & Spinks, 1988; Fullan, 1993a; Nova Scotia Department of Education, 1994).

A review of research relative to implementation of school-based management suggests that it may not result in improvements in student achievement that are anticipated by reformers (Cranston, 1994; Fullan, 1993a; Murphy & Hallinger, 1993; Sarason, 1990; Sergiovanni, 1995). For example, Fullan (1993a) states that current efforts, labelled restructuring, where "the emphasis is on school-based management, enhanced roles for principals and teachers, and other decentralized components" are unlikely to succeed more so than past efforts (p. 2). Similarly, Tye (1992) states that current reform efforts [site-based management]...is at risk because many of its advocates oversimplify it and hardly consider the serious underlying issues that must be dealt with if it is to be successful" (p. 14). Sergiovanni (1995) comments correspondingly that "site-based management...has been widely adopted, but instead of becoming a means to help us get somewhere it often is an end in itself" (p. 278). Similarly, Murphy and Hallinger (1993) note that "at neither the theoretical nor the conceptual levels was there much evidence to link ... restructuring efforts [such as, school-based management] with changes in classrooms, relationships between teachers and students, and/or student outcomes" (p. 254).

While the research noted above suggests that our approach to reform does not guarantee success, the direction of some reform efforts in moving "back to the basics" has been challenged as well (Berman & MacLaughlin, 1976; Deal, 1990; Fullan, 1993a; Goodman, 1995; Riley, 1992). Riley (1992) challenges the call to return "to the way things used to be, to a time when schools had high standards, when all students knew how to read and write, and compute" (p. 240). He argues that we tend to forget that only

recently have we had more than half the population who completed high school and he asks that we consider the source of adult illiteracy. Riley suggests that "we are told to return to a time that never was, and we are encouraged to face the future armed with empty slogans and impossible promises" (p. 240). Similarly, Goodman (1995) notes that in spite of the progressive-sounding changes, what we may have is "change without difference" (p. 2). He notes that for us to assess efforts at reform we should understand the historical development of education. He cites an example of thinking relative to reform during the early part of this century. "Many industrial restructuralists argued that the best way to increase the productivity of schools was to predetermine specific learning outcomes and then to test students to see if these outcomes had been reached" (p. 9). He contends that throughout the century, "test scores have become the product of schools, students have become the workers who produce this product using instructional programs given to them by the organization" (p. 11). He suggests that advocates for school transformation "back to the basics" are arguing to maintain the values of efficiency and productivity that exist already.

Arguments that our progressive approaches have weakened the educational process are challenged by the literature that is replete with references to failed reform (Berman & MacLaughlin, 1976; Cranston, 1994; Deal, 1990; Fullan, 1993a; Sergiovanni, 1995). Deal (1990) states, "We have tried almost everything conceivable to improve our public schools. We have invested millions of dollars in staff development--only to watch new skills disappear amidst old routines" (p. 6). Similarly, Cranston (1994) contends that at the classroom level at least, it is frequently a case of business as usual, with the changes greeted in some instances somewhat without enthusiasm, together with cynicism, antagonism and a deal of resistance (p. 23). Sergiovanni (1995) cautions that even if schools adopt innovations, there is no assurance that they adopt more than just the name. He states, "Schools frequently adopt innovations that are not implemented or, if implemented, innovations are shaped to the way things were to the point that the 'change is hardly noticeable'" (p. 278). Hord, Rutherford, Huling-Austin, & Hall (1987) contend that much of the research on implementation of innovations has ignored that implementation is a process. Since the focus of such research has been on improved student outcomes, the most frequent finding of "no significant change" is indicative of the failure of the implementation process rather than the innovation. Goodman (1995) challenges the likelihood of the existence of "progressive approaches" from a professional development perspective. He contends that effectiveness of any pedagogical activity depends on the extent to which teachers understand its ideological underpinnings. He argues, therefore, that in light of the typical one-day inservice approach to professional development, it is unlikely that teachers have employed any "progressive" pedagogical approaches with any degree of effectiveness.

If the intent of efforts at reform in education is improved student learning (Fullan, 1993a; Goodlad, 1992; McLaughlin, 1990; Murphy, 1992, Murphy & Hallinger, 1993; Sergiovanni, 1995), educators must be concerned with the caveats regarding "back to the basics", progressive approaches, and approach to reform that are noted above. Within this context of uncertainty of both direction of and approach to reform, educators must continue to make decisions to attempt to improve opportunities for student learning. While the selection of appropriate student learning outcomes is subject to debate (Madaus, Airasian & Kellagan, 1980), Fullan (1993a) suggests that The Conference Board of Canada Profile of Employability Skills are indicative of directions that schools in Canada are looking toward. This profile suggests that employers need people who can communicate, think, and continue to learn for life; who have positive attitudes and behaviours, are able to take responsibility for their actions, and are adaptable; and who can work with others (McLaughlin, 1992). In Newfoundland

and Labrador, desired student outcomes have been determined through a public consultation process (Newfoundland and Labrador Educational Indicators System, 1995).

District Models for Growth and Improvement

In the context of the Newfoundland and Labrador Educational Indicators System and the employability skills profile, and in an attempt to address the above noted concerns related to global reform efforts, one school district in Newfoundland, in cooperation with Faculty of Education personnel, developed and adopted a district model to guide growth and improvement in a school-based management environment. The model is informed by theory (Fullan, 1993a; Leithwood, 1995; Senge, 1990; Senge, Kleiner, Roberts, Ross, Smith, 1994), and focused on those individuals closest to where learning takes place in the schools--students, teachers, and site administrators. In this model, teachers are expected to be action researchers (Calhoun, 1994; Sagor, 1992). It is based on the proposition that change is a process that cannot be left to the experts (Fullan, 1993a; Kanter, Stein, & Jick, 1992; Peters, 1992). Teachers must be viewed as partners working in an environment of collaboration where they are concerned with both implementation and the evaluation of programs and approaches that are being implemented (O'Neil, 1995). It recognizes the need to develop new complementary roles for the district and the school, and it focuses on the creation of team leadership, and the development of characteristics of the 'learning organization'. See diagrams 1 and 2.

Diagram 1 outlines the primary themes that guide the development of the district framework for growth and improvement. Theme 1 proposes that both endogenous and exogenous variables must be considered (Fullan, 1993a; Wright, 1982). Exogenous variables include external factors, conditions, and individuals that must be considered. Emphasis on these variables ensures the connection that schools must make with the wider environment (Fullan, 1993a). Endogenous variables are the internal factors, conditions, and individuals that potentially affect change (Wright, 1982). Also, consideration of these variables includes recognition of the need to develop leadership that contributes to higher levels of commitment, professional involvement, and innovativeness (Sheppard, 1995). The importance of this theme is articulated by Fullan (1994) in the following statement: "Research on effective and collaborative schools shows that such schools do not go it alone, but are actively part of a wider network in which external and internal influences are equally important" (p. 192).

Diagram 1
Change Themes

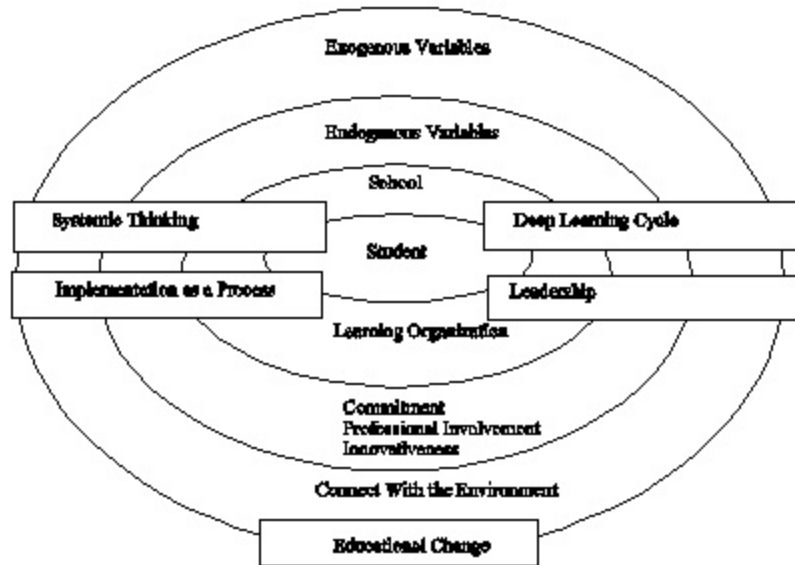
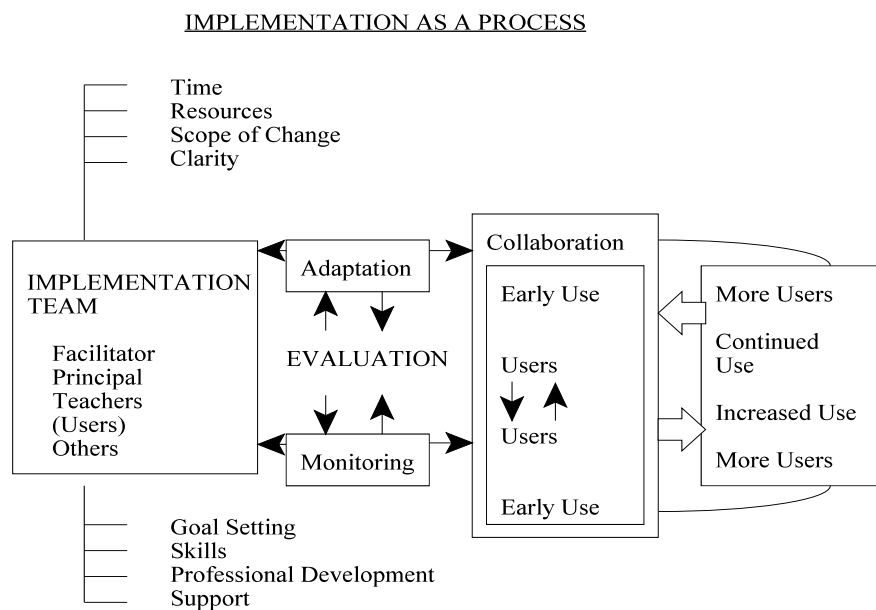


Diagram 2
Model of Implementation



Theme 2 recognizes that schools must become "learning organizations". This concept is grounded in the "five disciplines" expounded by Senge, Roberts, Ross, Smith, & Kleiner (1994). This includes the development of personal mastery, mental models, shared vision, team learning, and systems thinking. While the concept of the learning organization has developed outside of the school setting (Senge, 1990), research conducted by others (Fullan, 1993a; Leithwood, Dart, Janti & Steinbach, 1993; Louis, 1994) supports it as a meaningful approach to facilitate sustainable growth in schools. Fullan (1993a) sees this as "the new work of the principal and the teacher" (p. 66). It requires emphasis on the development of ideas, theories, methods, and tools, and on changes in infrastructure that will support enduring change. Senge et al. (1994) note that the deeper changes in beliefs and assumptions that ensure long term growth are evoked only by sustaining the surface movement.

A third theme is that a theory of change must be implemented (Fullan, 1993a), and that implementation is a process that is halting, incremental, and dynamically complex (Anderson, 1993; Fullan, Bennett, & Rolheiser-Bennett, 1990; Fullan & Miles, 1992; Fullan & Stiegelbauer, 1991; Hord & Hall, 1987; Hord, Rutherford, Huling-Austin, & Hall, 1987; Holzman, 1993; Louis & King, 1993; Miles & Louis, 1990). The role of the district in this process is articulated by Louis and King (1993) who contend that "planning/implementation should occur over a minimum of a 3-year period [and that throughout the process] central office must manage the district environment to ensure that the [reforming] school is neither ignored or reviled" (p. 242).

The fourth theme recognizes the importance of leadership. The need for strong school leadership has been supported in research in the area of effective schools (Edmonds, 1979; Gezi, 1990; Hall & Hord, 1987; Leithwood, Begley, & Cousins), school improvement (Cox, 1983; Crandall, 1983; Hallinger & McCary, 1990; Louis & Miles, 1990), innovation, change, and implementation (Fullan, 1993a; Hall & Hord, 1987; McLaughlin, 1990). The emerging theory of leadership is away from the technological, rational planning models for school improvement, toward cultural, collaborative approaches in which teachers are viewed as partners (Blase, 1993; 1987; Evans, 1993; Griffiths, 1988; Laroque & Coleman, 1991; March, 1988; Pellicer, Anderson, Keefe, Kelley, & McCleary, 1990; Weber, 1989). Current studies support the transformational leadership framework as appropriate when schools are engaged in change (Brown, 1994; Leithwood (1992, 1994; Sheppard, 1995). Leadership as articulated in the model is consistent with this developing perspective.

Finally, and perhaps most significant, the model recognizes that student learning must form the foundation of all change initiatives. Since there is ample evidence (Fullan, 1993a; Goodlad, 1992; McLaughlin, 1990; Murphy, 1993; Murphy & Hallinger, 1993; Sergiovanni, 1995) that past efforts at reform have not impacted on student learning, but rather have become ends in themselves, this model is based on the principle that all reform efforts must be backwardly mapped from the student (Murphy & Hallinger, 1993).

Diagram 2 presents an action research implementation model to be employed at the school level. The description of this model focuses on the major factors related to implementation with an attempt to make each factor operational. Use of this model by those attempting to bring about change assumes that a preliminary decision has been made to consider a particular change initiative. This decision may be mandated from the top or it may have been grown from within.

The implementation team consists of the principal, facilitator, teachers and others that are deemed necessary. The principal, as an educational leader of the school, supports and coordinates the work of the team. He or she must be willing to work in a collaborative fashion with other team members, must develop a clear vision of the change, and must work to establish a positive climate, culture, and collegial environment to accomplish the goals of the initiative. The facilitator is a person inside or outside the school whose job it is to provide assistance and support to people who are initiating and implementing change. The facilitator is a team builder who assists with the planning of meaningful interaction which can lead to task accomplishment. The facilitator should be chosen through consultation between the school leadership and district administration.

Teachers on the team are partners in the planning process and are essential for providing appropriate reality checks. It is desirable that these teachers are committed to or willing to consider early use of the initiative. The team must plan for all stages of the implementation and must remain actively involved throughout the process of implementation. The two-directional arrows indicate the interaction and interdependence that is inherent in the model.

The factors noted in the model must be given consideration by the implementation team as they engage in action research. For each factor there are several questions that are to be used as guidelines by the team. It is essential that the team recognize that these factors require constant attention throughout the entire process and that they are not factors to be considered only during initiation. These

factors are as follows: goal setting, scope of change, clarity, skills, professional development, resources, support, time, and realism.

The model recognizes the necessity of collaboration throughout the implementation process. It recognizes that change is a journey rather than a blueprint, and that problems will be encountered along the way. Such an uncertain process requires collaborative learning that comes from active participation. Organizational structures must allow for peer interactions such as coaching, planning, evaluating, and adapting. Small groups with a bias for action are more likely to make the necessary adaptations to move the change in the required direction. The model is based on the assumption that as other teachers recognize successes and improved practice they begin to desire change as well. Peer support is essential.

The entire process of implementation must be based on an action research model which will begin with a determination of needs through research. When an initiative is determined, the implementation team must develop a research design to evaluate the project throughout. They must recognize that change is an individual process and people move at different rates. Evaluation must not focus on outcomes only, but must ensure the monitoring of the process of implementation. It is essential that evaluations and monitoring impact on decisions relative to the other model factors, and that continuation of the change initiative remains an open decision throughout.

Purpose

The purpose of this research was to determine the strengths and weaknesses of the developed model of change. It serves as a preliminary stage in a research project designed to develop further insights into the process of change in education with the optimistic intent of developing a theoretical model that could be employed to assist other schools and districts as they attempt to implement change. The questions addressed in this study are as follows:

1. What evidence exists that demonstrates that this model can be implemented in a school and a school district?
2. What evidence is there that this model actually makes a difference in teacher performance?
3. What are the difficulties associated with the application of this model?
4. What are the strengths of this model?
5. What is the nature of leadership that supports implementation within the context of this model?

The need for this study arises out of the skepticism related to current reform efforts that is prevalent throughout the literature and is in response to the need for further research into the implementation of change. It focuses both on the school and the district. These foci are consistent with identified research needs. The need for the focus on the school is illustrated by Cranston (1994) who notes that "what we are seeing is a real and urgent need for some systematic investigation of the impacts of the change processes in schools ..." (p. 27). In a similar fashion, the need to focus on the district and school-district relationships is represented by Fullan (1993b) who argues for

the need to research the role of the district in site-based management with a teaching-learning lens. Research has shown that districts should not be involved in centralized district curriculum development or in conducting district wide staff development, but there has been little development of what the role should be.

Methodology

This is a case study of one central high school (500 students, grades 7-12, and 27 teachers) that is attempting to bring about improvements within the context of the district model for growth and improvement described above. The focus of the study includes all teachers in the selected school and all district personnel involved in the process of developing and implementing the model. Since this study was limited to one school and one school district office, generalizability of findings will not be possible. However, the richness of the data through close involvement and observation will provide insights and understandings related to the process that would not be available through a larger scale quantitative study. Understandings, changes to the model, identified needs for professional development, and refined instruments that result from this study will provide the basis for a larger scale study that is currently underway.

Methodology included the use of observations; interviews with teachers, implementation team members, the principal, and district office personnel; document analysis; and teacher surveys. Data were collected over a two year period with the researcher involved as a participant observer at the district level during the planning stage and during the initial four months of implementation. School observation was conducted over a period of five days. Document analysis consisted of analysis of staff meeting minutes; school improvement plans; correspondence between district office and the school regarding implementation plans; minutes of principals' meetings, program coordinators' meetings, and meetings of the senior administration and the school board curriculum committee. Protocols for the interviews and observations were grounded in the theory underlying the developed model. The researcher participated in the development of the district model and assisted in the training of coordinators and principals in its use. Survey instruments employed were as follows:

1. Stages of Concern Questionnaire. This questionnaire was completed by all teachers at specified intervals. Reliability and validity of this instrument has been established by the CBAM researchers (Hord, Rutherford, Huling-Austin, & Hall, 1987).
2. Innovation Profile. An innovation profile of cooperative learning developed by Verhalst (1992) was accepted by the implementation team at the school. This profile describes behaviors of teachers at five stages of implementation of cooperative learning. All teachers were given a scrambled version of this profile and asked to describe their behavior by choosing appropriate profile descriptions. These ratings were categorised by the researcher according to previously identified stages.
3. Time Line/Objectives Scale. A check list was developed from the original time lines and the objectives listed by the project team. All teachers were asked to indicate on a Likert scale the degree to which they perceive that the time lines and the objectives have been met.

4. Consideration of Implementation Factors Survey. All teachers and implementation team members were asked to rate, on a Likert scale, the degree to which they feel that the model factors have been considered by the implementation team. Internal consistency reliability for each scale ranged between $r=.72$ and $.91$.

Results

Question 1: What evidence exists that demonstrates that this model can be implemented in a school and a school district?

Analysis of documents, observations and interviews demonstrated clearly that the development of the framework and model was a complex task which required more time than anticipated by those principals, program coordinators, and senior administrators who initiated it. It became quite obvious throughout the process that the broad based involvement at the development stage was essential to its acceptance. Even in the collaborative context of its development whereby teachers, principals, and program coordinators had input into the development of the model, it was considered by many to be a top down mandate since the origin of the concept came from an assistant superintendent. Once the framework and the model of implementation were accepted by schools and the district as the process to be employed in all change initiatives, it did not result in action. Interviews with principals and program coordinators indicated that while they were exposed to training, they were not comfortable enough with the required process to initiate actions at the school level or to train teachers. While the theory and the method were stated, the tools for implementation did not exist. As a result of the inaction and stated need for operational tools, the model was operationalized through a series of questions that would provide those tools for the school team. Following this, more training was conducted for principals and coordinators. In recognition that any process of change itself had to be implemented, the first school that indicated readiness was provided with the necessary facilitative and research support from district office. This school was identified as a pilot school. Two program coordinators acted as facilitators to train the school team and then to work directly with them in the development of the planned implementation. Interviews with the facilitators and the team members indicated that initial attempts at team building and the development of plans proved to be difficult and frustrating. The model did not provide specific "how to", but rather provided basic principles around which the team was to develop implementation plans. After the initial two or three meetings, as team members became more comfortable with the process and teachers realized that the development of this plan was their responsibility, a specific initiative (cooperative learning) was selected and a detailed action plan was developed. As enthusiasm built at the team level, the action plan was submitted to an outside agency who approved funding. Following acceptance of plans at the district level, the school held a two day introductory inservice on cooperative learning. While there were plans for much more activity during the spring of that first year, things stalled as a consequence of a provincial strike. In spite of this strike, however, several members of the implementation team were involved in local and national sessions related to cooperative learning during the summer break. This was set out in the original implementation plan. Both the principal and district personnel included cooperative learning as a major component of job interviews. At the beginning of the next school year, new teachers to the school were given an introduction to cooperative learning during a one day professional development session.

In order to determine the extent of evidence demonstrating that this model can be implemented in the school, teachers were asked the extent to which they perceived the model was being employed in the school, and if the implementation process differed from past experience. During the teacher interviews it became quite apparent that teachers were aware that there was a model. The model had been presented to them at some point during the previous year but they did not remember the details of the model and certainly did not feel as if they were part of its development even though that was the intent and the perception of the senior district administration. Minutes of principals' meetings clearly indicate that on several occasions during development, principals were asked to present this model to teachers and to get feedback. When the model was written in final form as a district document, it was presented to all principals who were subsequently directed to present it to all their teachers. While this may have been done as directed, it was not readily apparent during the teacher interviews. Only those teachers who were involved as implementation team members were aware of the model details. Despite the lack of detailed understanding of the model, all teachers were aware that there was a model which guided team decisions and the activities of implementation. There was unanimous agreement of all those interviewed that there existed a process that was quite different than they had previously experienced and that as a consequence, cooperative learning, the initiative that they had chosen to implement a year ago, was being successfully implemented. Opinion regarding whether all teachers needed to understand the model varied; however, the majority of teachers indicated that such knowledge was a concern for administration and the team, not all teachers. If they were to become part of the team at some point then they would expect to learn the process. Most were quite comfortable that their implementation needs were being met and that they could see, not just increased use of cooperative learning, but also, more collaboration among colleagues. Teacher recognition that the implementation model was being employed and that it was a significant factor in the success of their initiative are best demonstrated by the following comments of six teachers:

Cooperative learning is the buzz word in the school. There is more focus than in the past. It is obvious that there is a formal structure. People are aware that there is an implementation model that is being used as a guide.

I don't know what the model is, but what we are doing is different. We are staying focused on one initiative, we keep coming back to it and there is follow-up to everything we do. It is apparent that there is a plan. We were given revised time lines in September. Something right is happening, it has even changed 'Mr. Consistency', [teacher name].

There is a greater focus on this than any other initiative that we have attempted. There is far more consistency and more follow-up. As a staff we are far more like a team. We are drawn together around the implementation of cooperative learning.

Had it not been for the structure provided by the model it would have been abandoned. It ensures complete treatment, no stone is unturned. In the past things have been done in a piecemeal fashion and important concerns got ignored.

The strength of this model is in the factors that you must consider: support, evaluation, time line. A lot of initiatives have been introduced during the course of my career. They have not survived because they have been presented in one inservice with little support and no long range planning for follow up.

There is a definite process at work. If cooperative learning is a fad that loses favour elsewhere, I fear that we may be a school that is different than the rest because there is no doubt that it will be a strategy in this school.

Evidence that the model was employed in the implementation of cooperative learning is apparent from interviews with involved program coordinators as well. In response to the question whether there exists a different approach to implementation compared to previous change efforts, one coordinator responded,

Now there is a definite plan. Everyone knows the steps to be followed year by year. In previous plans, it was impossible to meet the varied demands of all schools as they jumped from one issue to another. Everyone had the best of intentions but little change resulted. The coordinators' job was to trouble shoot while going. It was difficult to be proactive.

In response to the same question another coordinator noted,

Now everything comes from the school. They suggest what sessions they need and how to proceed. Previously, this has been left entirely in the hands of the coordinator. Follow-up is planned but often not followed through in previous approaches. Inservice is often a one shot deal. Now the staff is insistent on necessary and timely follow-up. When a coordinator is involved in the process under this model, the coordinator and the staff feel as a team. Previously the school moved from one initiative to another with no real focus. No significant change was obvious.

To determine the extent of use of the model during the implementation of this particular initiative, all teachers and implementation team members were asked to complete a survey, "Consideration of Implementation Factors". This survey contained the questions that were to be addressed by the implementation team both during initial planning stages of the implementation process and throughout the entire process. Using a 5-point likert scale ranging from strongly agree to strongly disagree, teachers and team members were asked to indicate to what extent they perceive that the implementation team has addressed or is in the process of addressing these questions. During analysis of the data, a rating 3 (uncertain) was interpreted as denoting that the factor is not perceived as being addressed. Only rating 4 and rating 5, agree and strongly agree, were accepted as indicating that the question had been addressed. Of the 55 questionnaire items, 33 items were perceived by the majority of teachers to have been addressed or in the process of being addressed (See Table 1). When questions were placed in categories according to the 12 model factors, 10 factors were perceived as having been or in the process of being addressed. Two factors, collaboration and evaluation, were perceived as being addressed by 39 percent and 17 percent respectively. Original committee members indicated that all factors were addressed or being addressed; however, one new member indicated that there were 26

items that were not addressed suggesting that the model has not been directly employed throughout the process since original plans were composed.

Another assessment of whether the model was being employed was to determine if objectives and a time line were developed as required by the model. Analysis of the action plan document revealed that both were developed and that time lines had been adjusted to accommodate changes resulting from an unexpected work stoppage. To determine whether these elements guided practice, all teachers were asked to complete the Time Line/Objectives Survey. Of the 12 objectives, 8 were perceived by the majority of teachers as having been addressed (See Table 2). Those objectives that were not viewed as having been addressed related to evaluating cooperative learning and providing time for teachers to develop cooperative lesson plans, and to problem solve. In respect to the time line, there were more difficulties, only five of the time line objectives were perceived as having been met (See Table 3). However, the primary difficulty in this regard was the interruption brought about by the provincial teachers' strike during the spring of the first year of implementation. This changed the original time lines. The team had composed a new time line which they gave to each staff member during the fall of the second year of implementation. Review of this revised time line showed that all items indicated by the staff as not consistent with the original time line had been rescheduled. This is one example of the non linear nature of the change process and the necessity of continued team involvement in the process.

Table 1
Consideration of Model Factors
As Perceived by Teachers

Item	Yes	No	Item	Yes	No	Item	Yes	No	Item	Yes	No
1	22	1	15	21	2	29	23	0	43	6	17
2	23	0	16	19	4	30	11	12	44	8	15
3	21	2	17	22	1	31	11	12	45	4	19
4	17	6	18	10	13	32	10	13	46	5	18
5	19	4	19	21	2	33	7	16	47	3	20
6	19	4	20	16	7	34	22	1	48	1	22
7	17	6	21	18	5	35	15	8	49	5	18
8	18	5	22	17	6	36	6	17	50	10	13
9	11	12	23	12	11	37	15	8	51	6	17
10	20	3	24	11	12	38	7	16	52	5	18
11	14	9	25	15	8	39	12	11	53	3	20
12	19	3	26	18	5	40	20	11	54	19	4
13	21	2	27	10	13	41	10	3	55	13	10
14	21	2	28	21	2	42	14	13			

Table 2
The Degree To Which Objectives Have Been Addressed

Objectives	Yes	No	Objectives	Yes	No
1	25	1	7	8	18
2	24	2	8	20	6
3	22	4	9	4	22
4	25	1	10	11	15
5	13	13	11	23	3
6	14	12	12	17	9

Table 3
The Degree To Which The Time Line Has Been Followed

Time Line	Yes	No	Time Line	Yes	No
1	22	4	7	2	24
2	19	7	8	13	13
3	18	8	9	5	21
4	11	15	10	23	3
5	6	20	11	3	23

Question 2: What evidence is there that this model actually makes a difference in teacher performance?

In order to determine the degree to which the process of implementation was effective in changing teachers' classroom practices, one instrument employed was based on the innovative profile that was accepted by the implementation team as indicative of various stages of implementation. For each of five levels, there were three identifying behaviors. For the purposes of this study, if teachers indicated that two of the three behaviors at a particular level described their classroom activity, they were designated as working at that level. Analysis of the data (Table 4) indicate that the largest percentage of teachers were working at Level 3. Slightly over 50 percent were working at a Level 4 and approximately 30 percent at Level 5. The implementation team accepted that behaviors listed at level 4 and level 5 indicated that the innovation was being used without a great deal of adaptation. Only 28.6 percent of the teachers indicated that they were engaged in all three behaviors at each of those levels.

Table 4
Frequency Of Behaviours At Each Level
Of The Innovative Profile

Number of Behaviours	Level 1		Level 2		Level 3		Level 4		Level 5	
	f	%	f	%	f	%	f	%	f	%
Zero	1	3.6	4	14.3	3	10.7	2	7.1	7	25
One	8	28.6	6	21.4	4	14.3	11	39.3	12	42.9
Two	12	42.9	8	28.6	12	42.9	10	35.7	6	21.4

These survey findings are supported by the CBAM Level of Use interview procedure (Hord et al., 1987) and through semi-structured interviews. Interviews were conducted with a representative sample of teachers in various subject areas. A list of eleven interviewees was developed by the vice-principal and verified by the principal and two other teachers as being representative of the subject areas and people whom they would perceive as varied in their level of use along the continuum of use to non-use. Through the Level of Use interview, two teachers were placed at level 1, not using, but currently looking for more information about it and hope to use it sometime in the future; two teachers were at level III, using, but had concerns related to use; four teachers were at Level IVA, use was stabilized, and there was little thought to making changes, except perhaps to increase their repertoire of cooperative learning strategies; one teacher was at level IVB, concerned about evaluating cooperative learning strategies to improve the impact on student outcomes; and two teachers were at level 5, concerned about the impact on students and were collaborating with other users. Approximately 66 percent of those interviewed indicated that their use of cooperative learning was at least stabilized.

During the semi-structured interviews, in response to the question, "What percentage of time do you spend operating in a cooperative learning mode in your classroom?", only one indicated non-use of cooperative learning; two teachers indicated that they were using cooperative learning 5-10 percent of the time; and one teacher indicated using it 10-20 percent of the time. The other seven teachers indicated use more than 20 percent. Three teachers noted that they used cooperative learning more than 50 percent of the time. (See Table 5). When asked to what extent they perceived cooperative learning was being used in the school, seven of the eleven teachers interviewed perceived that at least 50 percent of the teachers were using cooperative learning at least 10 percent of the time, and five teachers felt that at least 20-30 percent of the teachers were using cooperative learning at least 30 percent of the time (see Table 6). One teacher responded, "I find it quite difficult to put a percentage on the number of teachers using cooperative learning, but what I can tell you is that there is enough use to make me feel uncomfortable about my limited amount of use. It is forcing me to get serious about cooperative learning as a practice that can improve my teaching."

Table 5
Percentage Of Use Indicated By Teachers
Self Reports

Percentage of Use	Number of Users	Percentage of Use	Number of Users
0-4	1	40-49	1
5-9	2	50-59	1
10-19	1	60-69	1
20-29	3	70-79	0
30-39	0	80-89	1

Table 6
Percentage Of Use Perceived by Other Teachers

Percentage of Users	Percentage of Use					
	10-19	20-29	30-39	40-49	50-59	60-69
10-19						
20-29				1		
30-39			1			
40-49			1			
50-59	2	1	1			
60-69		1				1
70-79	1					

The increased use of cooperative learning indicated by the teachers, was supported by coordinators and school administrators. For example, one coordinator stated:

There is more cooperative learning going on than before. There is significantly greater commitment to trying cooperative learning. There is a climate of collaboration at the school that did not previously exist. There is a feeling in the school among teachers that they can do something about what is happening in the school. I believe this is because of the constant focus that this model demands. Teachers see that they have control and that this is not just another bandwagon; rather this is a step by step plan that provides the direction they believe to be necessary in their school.

This use was further substantiated through observation. The researcher was a participant observer in a school professional development day held in April, Year 2. It was apparent that the staff were enthusiastic. A good atmosphere was apparent. This was noted by other visiting teachers and the program coordinators as well as the researcher.

While the activities of session 1 was primarily conducted by program coordinators, all participants clearly understood that these coordinators were acting on a mandate from the school team. The session began with a small group activity to review the essential elements of cooperative learning. Responses were posted. It was apparent from all group responses that there was a strong core of understanding of these elements among staff members. Since the groups were assigned randomly, it was apparent that the degree of expertise that was revealed resulted from the general pervasiveness of knowledge.

Session 2 was a sharing session. Thirteen individual staff members reported on cooperative learning projects they have employed in their classrooms. Subject areas represented were English, special education, career education, French, mathematics, and science. Issues presented ranged from detailed explanation of the process employed to how they have learned to deal with concerns such as time management and teaching cooperative learning skills to students. Several quotations taken from the various teachers during this session reveal the progress that has been made in the process of implementation:

Cooperative learning works well for review. Students have reacted to it well when used for that purpose.

Some students do not want to work in groups. You might be wise to allow those students to work alone. Only a select few students will opt for this. Not a major concern.

I like the idea of students being active.

Absentees and students that are not prepared for class can be accommodated in this learning environment.

They [students] really enjoy this. We [teachers] do, too.

Developing lesson plans and resources is quite time consuming. It would be quite helpful if some of this could be completed centrally.

In the first year teachers seem to have difficulty with time, but this seems to be overcome with experience both on the part of teachers and students. The shift from 40 minute periods to 58 minute periods has helped.

One high school student who is academically weak asked me why I didn't keep doing cooperative learning? He said that he was keeping up when I did that, now he feels he is falling behind.

Question 3: What are the difficulties associated with the application of this model?

The difficulties associated with the use of the model were primarily ascertained through observation and interviews. During the early stages of implementation of the model itself, teachers and coordinators expressed a great deal of difficulty with its application. It appears that they were expecting a model which provided a clearly laid out plan. This model does not provide the plan, but rather the guiding principles and the factors to be considered. Teams were required to develop a plan of action within the context of their own school that used the guidance of the model. The difficulty which resulted from the required problem solving that is inherent in the model was expressed in the interviews by teachers and coordinators. In response to the question, "What do you see as the primary difficulties associated with the current implementation process?", one coordinator responded:

Members of the team might not understand the process. Team members need training. In fact, often the informal leader that you need involved may lead the school in other directions.

Another coordinator indicated that training was needed in the use of the model. Program coordinators were expected to be facilitators of change but did not understand the model or the role of a facilitator. Similarly, principals, team members, and teachers indicated that they were aware that a model existed but did not understand it well enough to find it useful without considerable effort and expenditure of time. The process was working at their school because the facilitators understood the process and worked closely with the staff, assisting both in the interpretation of the model and in facilitation of the process. Concern relative to the difficulty of the process was expressed by a principal in another school who stated that his school did not get involved because they found the required process to be complex and time consuming. Minutes of a staff meeting at the latter principal's school support this position. Other document analysis provides additional evidence of the need for training of school teams in this regard. For example, a district proposal submitted to HRDA for funding clearly articulates the need for a training program for school teams. Included in this proposal is clear reference to the district framework and the model of implementation (Genge & Walters, 1995).

Question 4: What are the strengths of this model?

All those interviewed indicated that the major strength of this model is that when used it works. One teacher stated "It has led to the professional growth of the staff; it has created an air of excitement that did not previously exist; it has provided a structure that can be followed, but allows for adjustments where necessary; it has brought about collaboration among staff members; it has ensured a more concrete connection between the school and district office; and has given a focus to professional development efforts." Another teacher commented, "Had it not been for the structure provide by the model, cooperative learning would have been abandoned by many, as other initiatives have." And yet another noted, "If cooperative learning is working in this school, it is because of the model. I would rate it an "A". In like manner, one coordinator stated,

Teachers and the principal have learned a great deal from the process. This is apparent in respect to the principal's performance relative to his previous experience as principal in another school where his strengths were not so obvious. He is now a strong proactive leader. Differences can be observed in the school. The school has a vision to increase achievement and to deal with social

difficulties that have persisted there. The school is moving at a steady pace toward the achievement of their goal through a step by step approach where every step is planned and evaluated carefully. Major differences are apparent in just one year.

Question 5: What is the nature of leadership that supports implementation within the context of this model?

During interviews this question was asked with specific reference to identified groups or individuals as follows: principal, teachers, department heads, program coordinators, and district administration.

Principal. The most common term used to describe the principal's role in the process was that he was supportive of the initiative. This support was described generally as indirect influence through his obvious commitment to cooperative learning. Staff meetings were conducted using cooperative learning structures; there was a cooperative quotation of the week included on the announcements; the principal was a member of the Implementation Team, provided inservice time, and promoted the use of cooperative learning by maintaining a constant focus. One coordinator stated, "The principal must mobilize the others and must have a definite vision of where the school should be going. The current principal has been involved in the process and has been key in moving the school forward. The model has assisted the principal in keeping the focus with the staff and has strengthened his leadership. The model will not work without the leadership of a strong principal." Another coordinator supported the essential role of the principal as well, stating,

The principal is the liaison with the staff and is aware of staff concerns relative to the implementation. Following the recent two day inservice he requested that each staff member employ at least three cooperative learning structures by the end of May. Also, he employees cooperative learning strategies in his staff meetings. He is a key player and is acutely aware of the politics of his staff.

Document analysis revealed an evaluation of this principal that was conducted during the first year of this implementation process. This evaluation was conducted by the assistant superintendent of personnel and was composed of self-evaluation, evaluation by teachers, and evaluation by the senior administration. Evaluation dealt with issues of management and educational leadership. This principal received a positive rating from all sources.

Teachers. During interviews, the majority of teachers highlighted the importance of team work, collaboration, and peer coaching that had developed since the beginning of the implementation process. Three or four teachers were recognized as lead teachers. These teachers had an open door policy so that others could observe cooperative learning in practice. These were recognized by teachers as early users who had developed some degree of expertise. These teachers for the most part were members of the Implementation Team. They organized inservices and other cooperative learning sessions in staff meetings. Generally, teachers felt that collaboration among teachers was growing. One teacher commented,

"There are four or five teachers who are lead teachers. These teachers who come from various subject areas have been the driving

force behind my efforts. They might suggest, 'Here are some things you can try.' I have not been forced. They present materials and ideas, then I choose what is appropriate for my classes."

Confirmation of the importance of teacher leadership was provided through observation at the April inservice. When teachers were asked to identify the most significant and worthwhile aspect of the inservice, the session of teacher presentations of their practices was identified by all groups.

Department Heads. Department heads encouraged teachers to engage in cooperative learning strategies and suggested strategies that could be used in their particular subject area. There was a great deal of overlap between this discussion and discussion regarding other teachers, in that department heads were not viewed as a separate category by teachers. It is apparent that those department heads that were perceived as early users were noted as supporting the implementation directly, whereas those that were not early users were viewed as providing moral support to the initiative.

Program Coordinators. Those program coordinators who were involved as facilitators on the Team were viewed as making an excellent contribution to the implementation. However, outside of these involved coordinators, teachers did not perceive a great deal of input from coordinators in respect to the implementation of cooperative learning. A team member remarked, "They have given excellent support! We would not have gotten it off the ground without them. They had insights. They helped develop the team approach. They facilitated and led, but did not dictate." Most other teachers recognized the role they played in training, but were not aware of the critical role of facilitator recognized by the school administration and the team members. The following comment is representative of teacher's responses when asked to discuss the role of the coordinator in the implementation process: "I don't have much to do with coordinators. Other than their role at inservices that we have had on cooperative learning, I have little to do with them. Once they give their inservice they are gone. No other follow-up as such." Observations and document analysis indicate quite clearly that the coordinators who were involved as facilitators played a significant role in the success of the initiative. They acted as liaison between the school and district, assisted in working out "bugs" in the model, and acted as catalysts for change when others may have given up on the process. This observation was substantiated in interviews with the principal, vice-principal, and team members. Coordinators that were interviewed stressed the importance of the facilitative role, and the need for training relative to that role and use of the model. For example, one coordinator stated,

The coordinator is a facilitator. He/she is absolutely key to provide the energy and time that is required to obtain necessary materials and references to help the staff develop their focus and then to assist them to develop their plans and to carry them out. The coordinator must be familiar with the process model of implementation and must be strong in facilitator skills. Also, it is important that the coordinator assist in obtaining necessary funding. Training is required for coordinators in developing these skills.

Similarly, another stated,

I feel that I, as well as most other coordinators, need training relative to the role as facilitator using the process model of implementation. Most of us are not comfortable with it.

Assistant Superintendent. The role of the assistant superintendent was not included as a question in the interview with teachers as the model did not provide for his/her direct involvement with the teaching staff during the implementation. However, it was included as part of the interview with the principal and the coordinators. All indicated that the assistant superintendent was key to assisting in the development of the model and was part of the initial planning as required by that model. The researcher observed that the assistant superintendent suggested appropriate program coordinators to act as facilitators, committed time for professional development, and committed requested financial support. Also, it was noted that while this person was not an active part of the implementation team, he/she remained in constant contact with the team as they developed their plans. The assistant superintendent assisted in providing essential information such as what resources were available and also, acted as gatekeeper to ensure that only projects that were consistent with the model principles were approved. One coordinator commented,

The assistant superintendent must be the gatekeeper. He/she must know what is happening throughout the district. He/she must ensure that the schools operate within the district framework and must approve only those major initiatives that are planned within the context of the process model. Also, he/she must provide both the funding, training time, and the moral support to schools throughout the process; otherwise it will fail. This year all commitments made to the school have been honoured. The degree of training and funding support is indicative of moral support; however, the moral support could have been more overt and direct. The assistant superintendent must get into the school to "pat a few backs".

Images of leadership that are presented in reference to each of those groups or individuals suggest that all have an important role to play. No one group appears to be more significant than others. This indicates the need for a team approach. Additionally, it is clear that in the context of the successes that this staff perceives, the image of leadership is facilitative, nurturing, and supportive, rather than directive. Finally, the need for leadership training for all groups is strongly supported as individuals recognize the potential of the model which emphasizes the need for leadership at all levels of the organization.

Summary and Recommendations

It is apparent that the model for growth and improvement is in the process of being implemented in this one school and that it is supported by the district. To the degree that it has been implemented, it is perceived by teachers, and school and district administration to have positively influenced the implementation of one initiative in that school over a two-year period. Beyond these perceptions of success related to the implementation of one initiative, teachers have noted that model use has contributed to professional growth and increased collaboration, as well as strengthened connections between district office and the school. The primary weaknesses identified related to the complexity of the model and the lack of training of individuals expected to employ it.

If the model is to be successfully implemented (institutionalized) in either the pilot school or other schools, training must be provided to district facilitators and school teams. In that teachers indicated that issues of evaluation and collaboration were not adequately addressed, and that team members indicated that these were the most

difficult factors to be considered in the model, training should focus on these issues. Additionally, since there appeared to be much complacency among teachers regarding their need to understand the model or to be actively engaged in action research, there must be a training emphasis there as well.

Both district and school personnel perceive that the model is workable, that while it has weaknesses, it has had positive impact on the school's change efforts. Findings of this pilot will form the basis for further research and development, already underway, which will focus on planned change, leadership training, leadership approach, school-based management with teachers as action researchers, the learning organization, and student outcomes.

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THE DEVELOPMENT OF SCHOOL-BASED MANAGEMENT IN THE EDMONTON PUBLIC SCHOOL DISTRICT

Jerome G. Delaney
St. Kevin's Elementary School
Fall 1995

The Newfoundland Royal Commission of Inquiry into the Delivery of Programs and Services in Primary, Elementary, and Secondary Schools (1992) suggested that a model of school administration worthy of consideration was that of participatory management. One such specific model of school administration is school-based management or, as it is more frequently referred to, site-based decision making. The Edmonton Public School District, which serves approximately 70,000 students in Edmonton, Alberta, pioneered this concept in Canada. In 1976 the district initiated a pilot project in seven of its schools and in 1980 had expanded the concept to all of its schools. Today 15 years later, school-based management is functioning successfully and other educational jurisdictions across Canada can look to Edmonton to see how this system of school administration is operationalized on a daily basis. In this article the author traces the beginnings of school-based management in Edmonton Public and discusses the various challenges faced by the district in implementing this system-wide change. In a future article the author will discuss school-based management and its implications for school improvement in Newfoundland and Labrador.

The Beginnings of School-Based Management

As the story goes (B. McIntosh, personal communication, September 19, 1994), there once was a principal in Edmonton Public Schools who wanted to develop a library in his school. He called the Director of Library Services at the central office and received assurance that he would be able to obtain some books from the district to make his library operational. He then contacted the maintenance director at the central office looking for a supply of lumber in order to make shelves for the library but his request was turned down. He was told that there was no money left for that kind of expenditure. A few days later, maintenance workers showed up at his school with a supply of new doors and informed him that it was time for his school doors to be replaced. The principal protested and explained that he didn't need doors but rather shelving for his library. In disgust, he told the workers to take back the doors!

This actual account does serve to illustrate the significance of the concept of local decision making, the very basis of school-based management. Prior to 1976, the Edmonton Public School District operated under a very centralized system of school management and principals and teachers, who worked under this centralized system, readily admit that the above story was just one of many examples of that type of decision making (B. McIntosh, personal communication, September 19, 1995). This was symptomatic of what schools and their personnel tolerated prior to the introduction of school-based management or what was locally referred to at that time as "school-site budgeting".

The Arrival of Dr. Jones

In 1968 an American educator, Dr. Rolland Jones, became superintendent of the Edmonton Public School District. According to M.A. Kostek (personal communication, February 9, 1995), Jones was a "visionary 20 years ahead of his time" who believed that every principal should be "superintendent of his school". It bothered the chief superintendent that principals did not have the decision-making power he felt was necessary for them to run their schools as effectively as possible. Jones believed that central office administrators and supervisors should serve schools and their principals in an advisory and consultative capacity. Although Jones was keen on the philosophy of site-based decision making, he was unable to operationalize the concept and under his tenure no significant actions were taken to further advance the concept.

However, during Jones' period as superintendent, a young school administrator by the name of Michael Strembitsky was rising through the ranks to eventually become Jones' executive assistant. It was while working under Rolland Jones, who was perceived by many as "Strem's mentor", that Strembitsky began to consider this whole notion of site-based decision making (M.A. Kostek, personal communication, February 9, 1995). Having served as a school administrator in the Edmonton system, Strembitsky had first-hand knowledge of the kinds of decisions being made by central office personnel and it too perturbed him that although principals had the legal authority of being ultimately responsible for everything that went on in their schools, they lacked the financial resources and the flexibility to deploy those resources as they saw fit.

Dr. Jones resigned from Edmonton Public Schools in 1972 and returned to the United States to serve as superintendent of the Charlotte-Mecklenburg School District in North Carolina (Kostek, 1992). Michael Strembitsky served as acting superintendent in the interim and was officially appointed superintendent of Edmonton Public Schools in 1973.

The Pilot Project

Strembitsky was now in a position where he could work towards operationalizing his thinking regarding site-based decision making (M.A. Kostek, personal communication, February 9, 1995). In late 1975 he invited schools in the Edmonton Public School District to volunteer to participate in a pilot project on "school-based budgeting". According to R.P. Baker (personal communication, December 20, 1994), the invitation provided little detail about the project because the terms of reference were to be developed with the schools chosen to participate. However, principals were aware that if their schools were chosen to participate, they would be involved in developing a budget which could respond to the individual needs of their schools. The seven schools selected to participate in the pilot -- Grovenor, Hardisty, Kensington, M.E. LaZerte, Lynnwood, Parkdale, and W.P. Wagner -- were announced early in 1976.

The terms of reference and parameters for the pilot, which ran for three years from 1976 to 1979, were as follows (Baker, 1977):

- budgets were to run concurrently with the school operation year -- September to August;
- budgets were to reflect short and long term goals;

- budgets were prepared by program (e.g., Language Arts, Mathematics, Custodial, Utilities, etc.);
- the budgets were to be used as an authorization and control document;
- the school board had to approve each budget prior to commencement of the operating period;
- principals were designated as signing authorities for designated programs;
- average salaries were used for budgeting purposes;
- 1976 budget dollars were used with allowance to be made in 1977 for inflation and salary negotiations;
- provincial curriculum guidelines were to be observed;
- contracts with Board employees were not to be violated;
- the project was not to be used to circumvent problems for which procedures were already developed (pp. 54-55).

Not long after Strembitsky became superintendent, he hired planner Alan Parry whose primary responsibility was to develop a system for school-based budgeting. Parry is regarded by many as the architect of school-based management in the Edmonton Public School District and although he confronted numerous obstacles in setting up that system, he was tenacious in those efforts (M.A. Kostek, personal communication, February 9, 1995). Those efforts included Parry visiting the Dade County School District in Florida and the Orange County School District in California where school-based management had been in operation for some time. It was during the Californian trip that he met two consultants, Fred Wellington and Les Shuck, who provided invaluable assistance to the Edmonton Public School District during the pilot stage and the early district-wide implementation years.

R.P. Baker (personal communication, December 20, 1994) and Victor Nakonechny (personal communication, December 21, 1994), two of the pilot principals, recalled that when their schools had decided to get involved in the pilot project, there was a certain amount of apprehension and anxiety on the part of teachers. "They nor I weren't quite sure what we were getting ourselves into but overall there was a considerable amount of co-operation from teachers and that certainly was instrumental in making the pilot work," commented Baker.

The Role of the School Board

Although the Edmonton Public School District is well recognized in the literature on school-based management (e.g., Brown, 1990; Herman & Herman, 1993; Mohrman & Wohlstetter, 1994), it appears that the School Board itself has not received the appropriate recognition for its leadership role in approving Superintendent Strembitsky's pilot initiative and eventual district-wide implementation of the concept (J. Cowling, personal communication, February 15, 1995).

Former board chairperson Joan Cowling, who spent 12 years as a trustee and who began her term of service in 1980, the first year of the district-wide implementation, has suggested that the public and at times the trustees themselves, didn't always appreciate the leadership role that the board played in facilitating the start of school-based management in the Edmonton Public School District (J. Cowling, personal communication, February 15, 1995). She too recalled the anxiety and uncertainty of teachers in the district when the decision was made to go district-wide: "It was certainly a classic example of a paradigm shift and the first year was a real learning experience for all of us." During the implementation years, principals were invited to meet with board subcommittees to discuss their educational plans and Cowling recalled that it was around 1984 or 1985 when the concept of school-based management seemed to "become institutionalized and have taken on a life and philosophy of its own" (J. Cowling, personal communication, February 15, 1995).

Obstacles to Implementation

In retrospect, one can now agree that the strategy of starting off with a seven school pilot project was certainly a successful one. In the late 1970s there was a paucity of written information on the concept and apart from some isolated efforts in the United States and none in Canada, there were no locations where Edmonton Public administrators could go to view a model operation (M.A. Kostek, personal communication, February 9, 1995).

In fact, Edmonton was indeed "blazing new trails" and of course there were a number of obstacles that had to be overcome. One of the most obvious obstacles at the time was the resistance on the part of central office personnel who worked in the area of finances. One gets the impression that those personnel were rather skeptical as to whether or not school principals could actually handle the financial end of the process (B. McIntosh, personal communication, September 19, 1994). Also, with control over the finances, these individuals wielded considerable power over the schools and perceived their very existence and employment to be threatened by the introduction of school-based management. Consequently, it was obvious that many roadblocks had to be overcome.

Another impediment at that time was the lack of computerization at the central office. This computerization would have greatly facilitated the generation of much-needed data for making budgetary decisions (A. Durand, personal communication, December 22, 1994). Hours and hours of tedious, time-consuming manual labor were expended in order to come up with information, such as determining allocations, which was vital to the decision-making process.

In spite of these impediments, the tenacity and perseverance of Michael Strembitsky, Alan Parry and others, along with the leadership and supportive role of the trustees, paid off and became a reality (M.A. Kostek, personal communication, February 9, 1995). As Kostek (1992) has so eloquently stated,

For years, educators have discussed the benefits of decision making at the school level by people who are affected by those decisions—students, parents, teachers and principals. The theorizing has stopped in Edmonton where site-based management has been a reality for over a decade (p. 432).

The Allocation System

Andre Durand of the Edmonton Public School District (personal communication, December 22, 1994), in reflecting back over the introduction of school-based management, recalled that the change in structure the district experienced when converting to school-based management was a very significant one. Now principals were expected to take on a new role with a much greater emphasis on planning, decision making, and involving teachers in those processes. To assist principals in becoming more proficient in those new roles, the central office provided consulting services which were available on a voluntary basis to school administrators.

One of the greatest challenges facing the district with the advent of this decentralized approach to school governance was deciding how to allocate financial resources to individual schools (A. Durand, personal communication, December 22, 1994). Prior to the transition to school-based management, schools received a printout late in the previous school year listing how much money they would be allocated for the various departments. There was a limited amount of flexibility with those allocated amounts. And of course, principals, who were very astute politically, knew of different ways to increase those amounts for their schools. Traditionally, two percent of the money utilized by schools actually went out to the schools. With this district-wide change, it would eventually increase to approximately 75 percent.

Durand (personal communication, December 22, 1994) emphasized that one of the things the central office held "very sacred and guarded with our lives was the concept that if you're going to give people responsibility, you must also give them the resources. You cannot say to them you will now have the responsibility but we are going to control the money." The challenge, after it had been decided as to what responsibilities were going to the schools and what responsibilities would stay with the district, was to determine how to actually distribute the monies to allow individual schools to meet those responsibilities. The "paradigm shift", earlier mentioned by Cowling, came into play because schools now had to make decisions which, under the previous centralized system, were made for them--how many supplies, equipment, services were needed, what levels of staffing were required to offer their programs, what kind of staff mix with regards to certificated and noncertificated staff would be sufficient to offer programs and so forth. Responsibility now lay with the schools for making those kinds of decisions. Previously, those decisions were taken by central office with some input from the schools.

The district office was very keen on having the allocations "student-driven and not supply-driven, not equipment-driven, not staff-driven so that there would be a way to distribute the money and to get away from the old concept of having supplies-equipment-services (SES) money assigned and staff money assigned" (A. Durand, personal communication, December 22, 1994). Durand further stated that "it was important for us to shake the tree so as to get as much money out of the tree as possible." Central office supervisors responsible for the various subject areas were reluctant to give away their budgets and what it came down to in the final analysis was that "it took a group of central office administrators with a single purpose of determining what was to go to the schools to decide which resources would be decentralized" (A. Durand, personal communication, December 22, 1994).

The next step in the allocation process was to try and come up with a relative weighting for students. That weighting procedure resulted in various ratios being developed (the baseline ratio being 1.00) which attempted to relate to the actual needs

of students. It is important to remember here that this system was a completely new way of allocating financial resources and that this system was not one that was being used by the provincial government at that time.

As the school district made decisions regarding the allocation of financial resources to the schools, in a similar vein, the schools would then have to make their own decisions regarding the deployment of those resources. And back in the early 1980s when school-based management went system-wide, this was indeed quite a dramatic shift in the way decisions were made.

In the 1985-86 school year a review of the allocation system was conducted and it was decided to move from a whole listing of individual student categories to a grouping of categories called "levels". Over the years the system was further streamlined and today there are eight levels serving as the basis of allocation.

Back in the early years of school-based management, it took central office personnel three to four weeks to get back to the schools with confirmation of the actual amounts of money they would be receiving after the September 30 cutoff date. Today with computerization, that same confirmation period has been reduced to approximately five calendar days.

A Final Word

Although individuals such as former school trustee Cowling are quick to acknowledge that school-based management is by no means the perfect system, she is of the opinion that this decentralized approach represented a dramatic improvement in the way schools were administered (J. Cowling, personal communication, February 15, 1995).

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Author Biographical Note

Jerome G. Delaney recently received a Doctor of Philosophy in Educational Administration at the University of Alberta. His dissertation "The Relationship Between School-based Management and School Improvement" involved schools in the Edmonton Public School District. Jerome has served as a teacher and administrator with the Appalachia Roman Catholic School District based in Stephenville and is presently a junior high teacher at St. Kevin's Elementary School in the Goulds. His e-mail address is: jgdelane@calvin.stemnet.nf.ca

LOCAL MANAGEMENT OF SCHOOLS? IT'S NOT SIMPLE!
(A caution that those who try to swim with sharks
may be "at risk".)

R. Lloyd Ryan
Assistant Superintendent
Notre Dame Integrated School Board
Fall 1995

There is a growing body of literature extolling the virtues of planning the curriculum on the basis of the "narratives of experience" of teachers (Connelly & Clandinin, 1988). These narratives or personal stories are supposed to reveal the "personal practical knowledge" of teachers (Clandinin, 1985, 1986; Elbaz, 1983) and teachers' personal knowledge (Clandinin & Connelly, 1986) of what happens in classrooms. The implication is that teachers should have more autonomy in curricular decisions, consistent with the contemporary ideology that says that schools should be locally managed. This is a translation to the educational arena of the local control theories in business and industry, such as those advocated by Peters & Waterman (1982). These authors have since backed away, considerably, from their earlier "site-based management" positions, and many of their exemplary corporations have tightened administrative and managerial reins. However, it appears that many educational theorists have not gotten beyond In Search of Excellence (Maybe, they didn't manage to get **through** it!?), and are "gung-ho!" for administrative and managerial structures which major corporations have already abandoned.

This advocacy is consistent with the well-articulated assumption that education will be (automatically?) better if control of education is transferred to the local level.

It is with some trepidation that this automaticity, of better education emanating from simply giving school administrators and teachers more local control and autonomy, may be challenged. Caution, however, is in order. Greg Malone (1991), a comedian, says "There's a gap between what is presented to you as reality and what you know to be reality" (p. 7). That insight may very well apply to the current push for local control, a concern seemingly shared by those advocating a national curriculum. This attempt at educational change may be destined for failure (Sarason, 1990), at least in terms of children's lives and education.

One of the major factors contributing to possible failure of contemporary educational change efforts may be the existence of gaps of knowledge between the various education-related communities of concern: the theorists, usually university-based; legislators; district-level administrators and supervisory personnel; school-level administrators; and teachers in classrooms (Wayson et al, p. 16), a characteristic of what is being called "loosely coupled systems" (See e.g. Weick, 1982). Between each of these communities are gaps of knowledge, divergences in how the situation is seen. The extent of this divergence is illustrated by Fullan (1982) who says "We have a classic case of two entirely different worlds - the policy maker on the one hand, and the local practitioner on the other hand ("divergent worlds" as Cowden & Cohen, 1979, call them). To the extent that each side is ignorant of the subjective world of the other, reform will fail - and the extent is great" (p. 74).

Seeming to respond to a sense of dissonance between what educators presumably know from their specialized studies, on the one hand, and their educational practices, on the other, Glickman (1991) articulates some of the related problems. He points out, for example, the research-supported inferences that tracking, retention, and corporal punishment do not help students. Furthermore, he summarizes much recent learning-brain and related research which supports the notion that students learn from involvement in real activity rather than from lectures, passive listening, and completing worksheets, the primary modes of "teaching" characterizing contemporary classroom activity (Goodlad, 1984). He also articulates several other sound educational principles, challenging methodologies of teacher evaluation, the ideology of "principals as instructional leaders," the ineffectiveness of standardized testing, and so on. Then, in a sleight of hand that would be the envy of Houdini, he pulls the restructuring and local management of schools ideology out of an educational magician's hat.

It is important to question whether such popular ideologies are no more than "...superficial actions that have been touted as responses to the call for excellence" (Wayson, p. 9). It has to be questioned whether the clarion call for restructuring is not just another such superficial action, and a politically expedient one. Wayson (1988) says that "policy makers who do not want real improvement, or who want it cheap, or who have extraordinary conceit about their powers of persuasion, or who believe so completely in the concept of divine right, will deny or ignore the evidence derived from experience and discover once again that digging in the same hole in the same way merely creates a larger hole" (p. 13). Wayson also recognizes that "the decision unit most crucial to authentic reform is the individual teacher in the classroom" who has "veto power over reforms initiated at other decision levels" (p. 17).

But, what is happening in the classroom? Galton (1980) discovered classroom instruction to be "overwhelmingly factual and managerial" (p. 157) and that "the idea of engaging students in more interactional higher-order cognitive tasks in a class of 30 was highly impractical, if not impossible. Some teachers do succeed, but it requires an enormous amount of skill and energy if they are left to find the way on their own" (Fullen, p. 111), findings echoed by Goodlad (1984).

Are these the frustrated and over-worked people to whom local control is going to be given, despairing people, desperate to survive, who are reduced to "finding and using recipes for busy kitchens" (Huberman, 1980). Furthermore, "on the whole, teachers at all levels apparently [do] not know how to vary their instructional procedures, [do] not want to, or [have] some kind of difficulty doing so" (Goodlad, 1984, p. 106).

Besides, teachers already have all the freedom they could possibly use! As Goodlad observed "teachers ... [appear] to be quite autonomous in all areas central to their teaching" (p. 110).

If schools are restructured, how will principals exercise their instructional leadership functions (despite Glickman's misgivings) as articulated by Smith & Andrews (1989), and how will parents be guaranteed that children will be taught according to how the learning brain functions (Hart, 1975, 1983; Restak, 1984; Dunn, 1985; Caine & Caine, 1991)? One jurisdiction¹ estimates that it will take three years for local school faculties to learn to make decisions, and that no other inservice activity should take place while the faculties are engaged in this new learning. The PSI League of Professional Schools Program at The University of Georgia² shows just how difficult it really is to effectively deploy the local management procedures. Murphy (1991) echoes

this difficulty in her account of a process in which district and local administrators of one Georgia school district are engaging in to pursue restructuring. She specifically mentions some existing impediments undermining the needed related staff development (p. 4).

While numerous authors are advocating local control of schools, there is a dearth of research into just what happens when a faculty is left to make significant educational decisions. Who is interviewing principals and teachers who are struggling with the implementation of this ideology? Does the practice square with the claims? What is the "at-the-school-level reality" of restructuring, of local control, and of significant measures of local autonomy? That is, if teachers are to make curriculum and instruction plans based on their unique experiences, are principals also to follow the same route? What if teachers' experiences and principals' experiences differ - as they most assuredly will? What if different teachers have come to different - maybe even contradictory - conclusions? What is the effect on teachers? On principals? And, most importantly of all, what is the effect on children? What is happening to Children while administrators are seeking consensus about restructuring among their faculties? What happens to children if the supposedly needed consensus is not found, or if teachers and administrators have to take years to develop decision-making skills, assuming a core of educators are still remaining on-site after time and related energies have been expended?

It is worth noting that one school faculty, in Minnesota, tried to implement the jargon and have discovered that it is extremely difficult, and just too demanding on their personal lives and personal time (eg. evenings, Saturdays, and Sundays), to assume the site-based responsibilities that restructuring seems to imply (Gursky, 1990). My own experience is that teachers are prepared to spend about an hour a week on school decision-making (e.g. faculty and committee meetings). There is no doubt that teachers are intensely interested in decision-making, want to be involved, and know that their involvement is welcome, in many schools, anyway. However, the needs of their children and spouses, other personal obligations and responsibilities, and relaxation needs severely limit the non-paid time they are able to devote to school management. Besides, as they are quick to point out, they have assignments to correct and lessons to prepare.

Teachers have quickly realized, and articulated, that if they are to be meaningfully involved in true site-based management, then time will have to be allocated out of the regular instructional day, a move necessitating hiring new teachers - an unlikely eventuality in the current age of restraint!

In fact, many teachers and principals are casting jaundiced eyes at the attempt to foist an inordinate amount of accountability on their shoulders. They are astute enough to realize that accountability resides at the level of decision-making! Related to that, Carnoy (1991) says "It is not surprising that most teachers and principals are leary of reform, and many of those who have bought in are verging on burnout" (p. 5).

In fact, despite the move to "empower" teachers, even against their collective will, it has to be questioned whether teachers want - or need - to be "empowered" any more than they are. Maybe, all they want, and really need, is real support and sufficient resources to get the job done.

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EQUALITY OF EDUCATIONAL ATTAINMENT IN NEWFOUNDLAND (1993)

Jeff Bulcock
Faculty of Education, M.U.N.

Ron Dawe
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Purpose

The question addressed in this paper is: To what extent does equality of educational attainment prevail in Newfoundland? In particular we are interested in whether the equality of educational attainment holds for subgroups in the population based on the following ascribed criteria: gender, age, religious membership, type of community and region.

Background

Concern about inequities in educational opportunity arose in the post-World War II era with the consequence that the governments in virtually all Western nations, no matter whether to the right or left of the political spectrum, and no matter which side of the Atlantic, subscribed to the equal opportunity principle. The principle holds that everyone should have an equal chance to achieve the benefits and rewards that a society makes available; that there should be no artificial barriers holding some people back; and that there should be no special privileges giving some unfair advantages over others. It is for these reasons that equality is usually coupled with the concept of justice. It flows from this that the society which adheres to the equality principle will disallow discrimination which bars people of a particular gender, religion, or ethnicity from careers or public offices. And this means that all children and youth must be given an equal start through provision of equal or common educational opportunities, thereby giving them an equal chance to develop their talents.

While there is little controversy today about the principle of equal opportunity, the same cannot be said for the policies designed for achieving it; and, in particular, for a corollary of the principle called the equality of outputs, or equality of results. While there are numerous empirical studies on the equality of the resource inputs of schooling, there are fewer empirical studies dealing with the equality of schooling outcomes. The reason is fairly obvious: equality of inputs is believed to be attainable, whereas equality of outputs is not. Currently (1995-96), the controversy over equality of outcomes is over the question: What minimal educational provision is each person in society entitled to? The controversy is less over what resources go into education than over what kind of product comes out. From the perspective of the school graduate it is not so much a question, therefore, of how "equal" the school is, as a question of how well equipped the graduate is to compete on the open local, provincial, or national labour market on an equal basis with others, regardless of gender, social origins, community of residence, and such like. The issue has shifted from one focused on equalizing the schools to one focused on whether on entry to adult society all children are equipped to ensure their full participation and potential. Another way of stating this proposition is to say that schools will be evaluated primarily in terms of the extent to which they eliminate barriers

based on ascribed criteria. And, first, we have to identify the extent to which ascribed criteria constitute barriers to full participation, which is the purpose of this paper.

Research Questions

To examine the extent to which educational attainments are equal across different social groupings we can establish a set of conditional probabilities; for example,

- (i) the probability of high school graduation,
- (ii) the probability of attendance at a post-secondary educational institution, and
- (iii) the probability of graduation from a university.

Each probability is conditional upon selected ascribed criteria which are often identified as barriers to full participation in society. In the present instance five conditioning factors -- gender, age, religion, type of community and region -- will be included in the analysis. Five research questions flow from this; namely, to what extent are educational attainments conditional upon (i) gender differences, (ii) age differences, (iii) differences in church membership, (iv) the type of community where a person lives, and (v) the region of the province where the community is located?

Each research question takes a form parallel to the following: Are educational attainments conditional upon gender, other things equal? In other words, can it be said that differences in educational attainments are attributable to differences in gender when taking the other four conditioning agents into account simultaneously? The "other things equal" rider associated with each question is important. It refers to the "other" potential conditioning agents in the full model. Here we are asking whether the gender-educational attainment relationship is net of (or over and above) the effects of age, church membership, community type, and region. The five conditioning variables are referred to as ascribed criteria because each represents a quality which, for the most part, is given at birth, or by the position into which persons are born, hence, over which they may have little or no control. The outcome variable, educational attainment, is an achieved quality; that is, something which most individuals in an open society can attain with appropriate effort, given the opportunity.

Theoretical Framework

Gender Differences

The struggle for gender equality has had a tortuous twentieth century history, but the post World War II era proved to be one which was more receptive than prior years to the idea of equal educational and occupational opportunities for women. There is still a tendency to believe that as a social construct men and women, along with the concepts of feminine and masculine, are polar opposites, and as such provide a basis for people's expectations. In this sense, if men are perceived as being adventurous, assertive, and independent, women are expected to be the opposite. The result in practice is that women who may be performing the same job with the same qualifications and experience as men tend to earn less than men. Statistics Canada reports that on average women earn *other things equal* about 70 per cent of what men do.

Despite the well documented evidence of the barriers to equal opportunity for women, we can find little evidence for inequalities in *educational* opportunities for women in Newfoundland. Educational historian, Phillip McCann, author of *Schooling in a Fishing Society*, reports data showing that from 1921 through 1946 a higher proportion of girls attended school than boys even though 5 to 15 year-old girls constituted a smaller proportion of the population than boys. For the past decade, girls have been outperforming boys in Newfoundland schools at every grade level and in every subject except level 3 physics. In verbal subjects such as reading, language, religion and social studies, the differences in favour of girls are pronounced. For the past decade more females than males have been graduating from Memorial University, and while females are still underrepresented in the physical sciences, mathematics and engineering, the female minority in these fields are significantly outperforming their male counterparts. These are the differences accounting for the fact that medical school entry, which is based largely on academic performance, is in favour of females. Given this kind of evidence we conclude that there are unlikely to be gender differences in educational attainment, and if there are, they are not likely to be in favour of males.

Age Differences

There is ample evidence supporting the negative relationship between age and educational attainment in Newfoundland. Two theories are worthy of consideration: the theory of demographic transition and the theory of human capital. Prior to Commission Government (1934-49), the educational system in Newfoundland was somewhat static. One and two roomed schools were the norm. Few went beyond grade 8. Attendance was voluntary. Over a quarter of the 5 to 15 year-olds did not go to school and attendance among those enrolled in school was little more than 70 per cent. While the Commissioners perceived this as a major problem they were unable to implement changes because the ones imposed tended to infringe on established denominational rights; thus, during the early years of Commission Government the traditional limitations of the educational system were permitted to prevail. For example, though compulsory schooling was advocated by the Commissioners in 1934, they were unable to pass suitable legislation to that effect until 1942, and even then the legislation could not be enforced until about a decade later thanks to a shortage of both schools and teachers. Not surprisingly, Newfoundlanders attending school in these years -- that is, those who in 1993 were in their mid-fifties and older, and especially those from rural settlements -- with but few exceptions tended to have modest levels of formal education.

Substantial demographic changes began to occur during the war years (1939-45). The stable demography of the earlier years of the century with its relatively high birth and death rates changed. For example, death rates which in the 1930s hovered around 13 per 1000 began to fall. Today they are around 6 per 1000. According to the theory of demographic transition death rates begin to fall with improvements in nutrition, sanitation, health care and education. These are not documented here except to point out that in 1937 the death rate was 13.5, while by 1947 it was down to 9.9, and by 1952 it had dropped again to 7.5. In this early stage of transition the birth rate remained high; hence, there was substantial population growth. In 1945 the population of the province was 290 thousand. Thirty years later, in 1975, and despite sustained out migration, it was 550 thousand, an increase of 90 per cent.

These changes were accompanied by shifts in social attitudes toward education, health, contraceptive use, and technology. Higher living standards, thanks to some extent to the war economy, were accompanied by an increased demand for

education, by increasing life expectancy, and reductions in fertility. The 1955 birth rate of 36.3 -- probably the highest in the English speaking world -- by 1985 had dropped to 14.6 and was still dropping. To replace a population, fertility rates must be 2.1 or higher. In 1993 the rate was beginning to level out at 1.5, which is well below the replacement level, and below the prevailing Canadian rate of 1.7. In terms of demand for education, the proportion of provincial government revenues earmarked for education was already one fifth (21 per cent) of the provincial budget in 1950, and by 1970 had risen to 30 per cent of the total provincial budget.

In the late 1950s and early 60s economists were showing that investing in people yielded high dividends in terms of living standards. The classic example is Japan, a country in which people early recognized that the education and skills of its work force constituted its most powerful competitive weapon. The political goals of the period included both better health and education as a way of improving what the economists called human capital. Individuals, by investing in both, were increasing their worth to a future employer, and in the general case the amount of the investment was found to be reflected in their pay. The incentive to invest by both individuals and governments was considerable since there proved to be substantial returns to both private and social investments.

The age factor for three reasons, therefore, should account for differential educational attainments. First, the war time changes to a formerly stagnant provincial economy triggered demographic changes manifest as declining death rates and the beginnings of the post-war baby boom. As the economy grew the advantages to both individual and social investments in education became increasingly obvious, triggering a greater demand for schooling. Accompanying these powerful demographic shifts were substantial cultural changes as the province moved from a predominantly rural to a more urbanized society, a condition congruent with yet further educational expansion. Today's elderly while not necessarily benefitting personally have lived through an educational revolution, a revolution which was accompanied by demographic transition: from a prewar static stage with high birth and death rates, followed by rapid economic growth accompanied by even higher birth rates but declining death rates, followed finally in the 1970s to the present day by demographic slowdown. In each stage the demographic changes following a lag were accompanied by parallel economic and educational changes. Currently, following birth rates well below replacement, both the economy and the educational system seem to have stagnated. The evidence is that we are again entering a period of slow economic growth in which there is little room for further educational expansion even though our educational infrastructure falls short of that existing in other educational jurisdictions. Nevertheless, on the basis of these arguments we expect to find that each generation from the Commission Government era onward will be characterized by successively higher educational attainments. Both higher living standards and low student/worker ratios, thanks to the baby boom, support educational investments and the subsequent educational expansion.

Religious Membership

Here we address the question: What grounds justify the hypothesis of a relationship between church membership and educational attainment? Do the members of some denominations invest more in intellectual competencies than others, and, if so, why? We address two theories posited by Adam Smith (1775) and Max Weber (1904-05). Smith in his classic work on "An Investigation into the Nature and Causes of the Wealth of Nations" provided an explanation for the birth of new religious

organizations. He noted that as churches prosper, they become better endowed, and more firmly established in the eyes of the law, while at the same time there is a tendency for them to become less responsive to the spiritual needs of their congregations. He wrote that in such circumstances the clergy, "reposing themselves on their benefices [neglect] to keep up the fervour of the faith and devotion in the ... people; and [to] become altogether incapable of making any vigorous exertion in defense even of their own establishment." This lack of vitality, according to Smith, was in part due to the fact that stipends were awarded to "churchmen" regardless of their effectiveness either as preachers or proselytizers. Such complacency, he argued, would eventually lead to a spiritual vacuum which would be met by dissenting clergy, who would likely "...inspire [their congregation] with the most virulent abhorrence of all other sects."

In Smith's day, but not in ours, the mechanism accounting for the emergence of dissenting clergy would seem to operate solely in the Protestant camp, but not in the case of the Roman Catholic Church. Smith gave two explanations for this. First, he pointed out that a monetary incentive prevailed in the Catholic Church since the "inferior" clergy at the parish level depended on their parishioners for part of their income. Second, in times when the church fell into disfavour in Europe the mendicant orders "revived ... the languishing faith and devotion of the Catholic Church." Since the sustenance of the mendicants depended "altogether on their industry" they were "obliged, therefore, to use every art which can animate the devotion of the common people." Smith extended this argument by noting that "the advantage in point of learning and good writing [would] be on the side of the established church." He concludes, therefore, that the smaller, non-mainline denominations would place less emphasis on learning and more on preaching and proselytizing.

In Newfoundland there are three mainline, well established denominations; the Roman Catholic Church, the Anglican Church, and the United Church with 37 per cent, 26 per cent, and 17 per cent of the population respectively. For details see Table A1 in the statistical appendix. Non-mainline denominations would include the Salvation Army, the Pentecostal Assemblies and a half dozen or so small, mostly fundamentalist sects. Today the Salvationists constitute 8 per cent of the population and the Pentecostals 7 per cent. It would be congruent with Smith's thesis to posit two hypotheses: first, that educational attainments of the population would be higher among the adherents of the mainline churches than those in the non-mainline denominations; and, second, that there are unlikely to be aggregate differences in educational attainments between the adherents of the mainline churches themselves.

Weber's views differed from those of Smith. Weber's claim was that while the cultural changes brought about by the Protestant Ethic may not have been the cause, or the direct cause of capitalism, nevertheless, the ethic did provide a culture supportive of individualism, hard work, and self-reliance. In this sense capitalism was probably dependent on religious legitimation. In the Protestant Ethic and the Spirit of Capitalism, first written in 1904-05, Weber argued that Protestants lacked confidence in their own personal salvation. This view was based on the belief that only "the elect" were predestined for salvation. Their response to such "salvation anxiety" was hard work, self control, communal service, and reading the scriptures on the grounds that these might possibly be signs of "election". Coincidentally, these were the very qualities that enabled individuals to excel and prosper in worldly affairs. In contrast, Weber noted that Catholics believed that salvation was attainable through institutional means; that is, via the Church's mediation through the confessional, baptism, and communion.

The empirical status of Weber's thesis was given credence by Gerhard Lenski, an American sociologist, who in the 1960s, found on the basis of his Detroit Area Study that working class Catholics largely supported working class values, while working class Protestants largely supported middle class values. Compared to Catholics, Protestants had smaller families; considered work more important, saved their money; voted Republican; migrated to obtain an education or a better job; and developed a greater commitment to intellectual autonomy. And because the Protestant middle class believed in making substantial educational investments for their children Lenski was not surprised to find that a disproportionately high number of Protestants compared to Catholics were upwardly mobile, and had higher levels of educational attainment.

The church membership-educational attainment argument was also promoted by Lenski's findings that urban dwellers preferred face-to-face, personal relationships to impersonal, secondary-type relationships. He was able to show that this desire for primary group, personal relationships was often satisfied through membership of a neighbourhood church. Neighbourhoods, however, tended to be segregated along both economic and ethnic lines; hence there was a powerful tendency for churches over time to become differentiated on the basis of social class, so much so that church membership often became a badge of one's social standing. As neighbourhoods changed so did the churches. Because like attracted like, congregations tended to become composed of families with similar values, life styles and educational levels.

The findings from the Detroit Area Study were unambiguous; namely, that the mainline Protestant congregation was for the most part better educated than the typical Catholic congregation. But this argument carries little weight in Newfoundland. Since Confederation, the Catholic church in Newfoundland despite its other-worldly orientation and its traditional conservative distrust of Modernism, has materially benefitted from its growing urban base. Today Catholics in Newfoundland are as likely as Protestants to hold managerial positions, to hold elected office, to have equal media access, to be members of the professions, and to be well-educated. There is a sense, then, in Weberian terms, in which the Catholic Church in Newfoundland has become protestantized. Given these arguments one should expect few if any educational differences between the Catholic and mainline Protestant populations of Newfoundland.

It is on the basis of these arguments that we predict that there are unlikely to be educational differences between the Catholic Church members and the adherents of the Anglican and United Churches. The adherents of the non-mainline Protestant denominations (though there are many exceptions) are likely to be, in aggregate, less well educated. At the top of the hierarchy, as at the bottom, there may be unmet spiritual needs. In theory, those falling into this category are likely to be highly educated -- e.g., the non-Christians and the unbelievers.

Type of Community

This section of the paper is concerned with whether place of residence affects educational attainment. While we focus on the rural community of less than 1,000 people, which is where 46 per cent of the Newfoundland population live today, we emphasize that the concept "rural" only assumes meaning in the context of its counterpart "urban"; that is, only when the culture of country life is contrasted with town life. The empirical evidence from Newfoundland data overwhelmingly shows that rural populations are less well educated than urban populations; and that with but few exceptions rural students in all school subjects perform at levels below those attained

by urban students. The question addressed here, then, is why have such differences occurred.

The first point to note is that the phenomenon is not unique to Newfoundland. It is found to the same degree in many States of the U.S., and perhaps to a lesser degree in all Canadian provinces. And it is an ongoing concern in virtually all countries in the European Union; indeed, in Britain it was a major reason for introducing the National Curriculum in the Education Reform Act of 1988. Here, we present three arguments to support the hypothesis that urban populations in Newfoundland have higher levels of educational attainment than rural populations.

Item #1. Rural communities have benefitted less from the economic developments stemming from the aftermath of World War II than urban communities. Consequently job opportunities have deteriorated over most of this period in rural Newfoundland, and continue to deteriorate. Rural residents with competitive labour market skills, that is those with post secondary education levels, have tended to move into urban labour markets. And with the recent collapse of the traditional fishery many other rural residents have also moved to urban centres both in Newfoundland and the mainland.

Item #2. Rural educators face a double challenge, which places greater responsibility on the shoulders of rural educators than urban educators. In the first place, the economies of scale that are associated with the specialized teaching and uni-grade classrooms found in urban school systems, are not options for rural educators. Rural schooling, then, is inherently less cost effective than urban schooling, a fact which is rarely taken into account in the Government's policy of equal treatment. Yet to treat people equally when they are different in relevant ways is unjust. Further, given the high unemployment levels in rural areas, many rural youth will only find employment on the urban labour market. This, in turn, means that the rural educator has a mandate for teaching the values and skills which will enable rural youth to compete on equal terms with their urban counterparts; values and skills, moreover, which if exercised could easily contribute further to the underdevelopment of rural Newfoundland. Policies based on educating rural youth for the urban job market might well exacerbate the problems with the rural economy.

Item #3. Traditionally, rural economies, largely dependent as they are on natural resource development, rarely required workers with advanced academic training and/or specialized technical skills. Thus, traditionally it was always a student minority who, wishing to further their education at the post-secondary level, were willing to subordinate rural values to those congruent with success in post-secondary education. Thus, the values of rural educators tend to be at odds with those held by the parents of their pupils. In terms of prevailing ideology the successful rural school is one which does the best job of training students for export -- a policy unlikely to find support in much of rural Newfoundland because it fails to support rural life styles and values.

Consider this view expressed by a teacher of vocational education in a rural school system.

To have a saleable skill is a value to most of our families here. For example, in our vocational program we have no problems with parents. None. They love what we're doing because it fits their norm; whereas in academia they have problem after problem. It is difficult for parents to relate to the need for academic skills as far as earning

a living because most of them don't have such skills either. And most are not mobile anyway. They want to live here. They want to stay here. ...

This quotation is from *The Life and Death of a Rural American High School* by Alan de Young. The school referred to is in one of the Appalachian States of the U.S. Given the above propositions, it follows that academic attainments are likely to be higher in urban centres than in rural areas.

Regional Differences

Should we expect to find regional differences in educational attainments, over and above urban-rural differences; or are urban-rural differences mere proxies for regional differences, or vice versa? Regional differences at the national level, especially by province, have been well documented by Statistics Canada, especially in terms of per capita income, employment rates, and educational levels. Less well understood and documented are the regional disparities within provinces; nevertheless, few would deny that in most provinces there are regions of underdevelopment. In Newfoundland the underdeveloped regions are dependent on the export of raw products such as ground fish, lumber, and metal bearing ores. Underdeveloped regions are overwhelmingly rural and characterized by a low division of labour, and isolation in terms of access to post-secondary educational institutions. In political terms they have modest influence at best. The Labrador coast, the Northern Peninsula, the Baie Verte Peninsula, and the South Coast come to the mind of those familiar with the Provincial economy.

Most people in these regions are fisher-folk. They are more economically self sufficient than most Canadians. They live in small coastal settlements, seldom more than 1000 persons, and fewer than 200 households. They do not constitute a single class, but can be differentiated in terms of their degree of ownership of their trapskiffs, longliners, marine engines, and fishing gear. They are suffering today because their fishing grounds have been overfished by the factory ships and trawlers of the corporate fishing fleets, both Canadian and European, with the result that the ground fish population has been reduced to very low levels, while at the same time the marine ecosystems have been impoverished and destabilized. Ironically, the zero-sum drive for short-term profits (or "madhouse economics") has reduced, not increased jobs, and there is still no consensus about how to restore the ecological balance. The simple fact is, however, that it will require substantial structural reforms to the industry, including a marked reduction (even phase out) of the over-capitalized corporate fishing fleets on the grounds that their methods are too efficient. The economic needs of corporate capitalism have been permitted to override the social needs of regional Newfoundland economies. The purpose of restructuring would be to lessen pressure on fish populations and to increase employment in the fishery.

Hypotheses

On the basis of the arguments presented in the preceding sections we have derived the following hypotheses: (i) that there are few grounds on which to claim that gender differences account for educational attainments; (ii) that educational opportunities have consistently improved over the past half century with the result that in aggregate today's young adults are substantially better educated than today's elderly; (iii) that it is unlikely that there will be educational differences between Catholics and the

members of the mainline Protestant denominations (the Anglican and United Church members); (iv) that the adherents of the non-mainline Protestant denominations are unlikely to be as well educated as the mainline Protestants, while the non-Christian/no religious affiliation group is likely to consist of highly educated persons; (v) that the type of community is likely to be a factor accounting for educational attainment, in favour of the residents of urban communities; and (vi) that over and above the effects of community type there are likely to be regional differences in educational attainments.

Methodology

Data

The public opinion poll data was gathered by Omnifacts Research of St. John's on behalf of the Government of Newfoundland and Labrador in October 1993. It was a follow-up to an almost identical survey conducted in November 1991 by Research Associates of St. John's on behalf of the Royal Commission on Primary, Elementary and Secondary Education. Both surveys were designed to assess public attitudes toward the role of religious denominations in the governance of the provincial school system. The 1993 survey was a 44 question, telephone survey of 1153 randomly selected respondents 18 years of age and older.

Sample

While the initial sample consisted of 1153 randomly selected respondents the Government requested the polling firm to overrepresent the Pentecostal minority; thus, the initial sample included 313 Pentecostal adherents or 27 percent of the total. Because the proportion of Pentecostal population in Newfoundland is reported by the 1991 Canadian Census as being 7 per cent we weighted the Pentecostal responses (WGHT=.204) to reflect the true Pentecostal representation in the Province, that is, to some 64 Pentecostal adherents, which resulted in 904 cases for the purposes of the present analysis. The margin of error for a random sample of this size is ± 4 percentage points 19 times out of 20. Sample accuracy can be ascertained by comparing the known characteristics of the present sample with parallel characteristics from the 1991 Census, as shown in Table A1 in the statistical appendix.

With reference to Table A1, the gender percentages could have been a little closer. Three denominations, the Catholics, Salvationists and Other Christian, were modestly underrepresented while the other four religious groups were marginally overrepresented. Differences in Type of Community and Region were minor except in one instance; namely, region #8 (Baie Verte). Here the difference of over six percentage points (9.1 percent of the population in the 1991 census were from the Baie Verte region whereas our sample population consisted of 15.6 per cent of the population) requires explanation. This region is the Provincial Pentecostal stronghold. To over-sample the Pentecostals as Government.

Table A1. Comparison of 1991 Census and 1993 Public Opinion Poll Sample¹

Variables	Variable Description	1991 Census %	1993 Sample %
Gender	Male	50.01	43.5
	Female	49.99	56.5
Age	18-24	17	13.2
	25-34	23.1	25.9
	35-44	22	29.7
	45-54	14.1	17.2
	55-64	10.3	7.8
	65+	13.5	6.2
Religion	Roman Catholic	37	31.8
	Anglican	26.1	27.2
	United Church	17.3	20
	Salvation Army	7.9	7.5
	Pentecostal	7.1	7.1
	Other Christian	2.6	2.5
	Non-Christian/No Religion	1.9	3.9

Variables	Variable Description	1991 Census %	1993 Sample %
Region of Residence	Region 1 Avalon	44.5	40.2
	Region 2 Burin	5.2	5.2
	Region 3 South Coast	4.3	3.5
	Region 4 Stephenville	4.5	4.4
	Region 5 Corner Brook	8	8.2
	Region 6 Grand Falls-Windsor	7.1	7.2
	Region 7 Clarenville	7.6	6.9
	Region 8 Baie Verte	9.1	15.6
	Region 9 Northern Peninsula	4.4	3.3
	Region 10 Labrador	5.3	5.5
Place of Residence	Rural (<1000)	46.4	44.8
	Small Town (1000-9,999)	19.4	14.8
	Urban Centre (10,000 +)	34.2	40.4

1. The 1991 Census data were derived from several Statistics Canada sources; specifically the following: Age, Sex, and Marital Status, Table 1 (p. 7) and Table 4 (p. 100); Religions in Canada, Table 2 (pp. 20-22); and Urban Areas, Table 3 (p. 62) and Table 4 (pp. 68-75).

requested, the polling firm had to over-sample the residents of this region. In doing so they not only oversampled Pentecostals but also other Christian groups by 6 percent.

Variables

The models to be estimated in this study in order to confirm or falsify the hypotheses consist of 30 variables of which 28 are dummy variables. The age variable is interval and the educational attainment variable is ordinal. Variable descriptions and their directionalities are to be found in Table A2 in the Statistical Appendix. The age variable was broken down into four categories representing political eras. Category #1 included the young adults who were educated largely during the Moores' administration beginning in 1972 and who in 1993 were aged 18 to 27. Those aged 28 to 49 were educated during the years of the Smallwood administration 1949-1971; those aged 50 to 64 were educated in the Commission Government years; while the 65-86 year-olds were educated in the Colonial era. This odd categorization was designed to test a supplementary hypothesis. There is some debate about the effectiveness of the Commission Government years 1934-1949 in terms of educational progress. It is claimed, for example, that they were years of stagnation, years when the government's mandate was effectively to preserve the status quo ante, thus lacking the progress found under later administrations. The categorization specified in this study will test such claims in terms of educational attainment.

Table A2. Questionnaire Item, Mnemonic, Variable Description and Directionality of Variable

Item	Mnemonic	Variable Description	Directionality
Q38	EDATTAIN	Educational Attainment	Range from 1 = elem. school to 6 = university graduate
Q38	EDUC3	High school graduate or not	1 = high school graduate, 0 = otherwise
Q38	POSTSEC	Some post-secondary educ. or not	1 = postsec. educ., 0 = otherwise
Q38	EDUC6	University graduate or not	1 = univ. grad., 0 = otherwise
Q46	GEN	Gender, male or female	1 = male, 2 = female
Q39	AGE	Age in years	Range from 18 to 86 years
Q39	AGE1	Post-Smallwood generation 1971-93	1 = age < 28, 0 = otherwise
Q39	AGE2	Respondent schooled during Smallwood administration 1949-71	1 = age 28 to 49, 0 = otherwise
Q39	AGE3	Respondent schooled during Commission Govt. era 1934-49	1 = age 50-64, 0 = otherwise
Q39	AGE4	Respondent schooled in colonial era	1 = age greater than 64, 0 = otherwise
Q41	CATHOLIC	Roman Catholic	1 = RC, 0 = otherwise
Q41	ANGLICAN	Anglican church member	1 = Anglican, 0 = otherwise
Q41	UNITED	United Church membership	1 = United Church, 0 = otherwise
Q41	SA	Salvation Army	1 = SA, 0 = otherwise
Q41	PENT	Pentecostal Assemblies	1 = Pentecostal, 0 = otherwise
Q41	CHRISTN	Other Christian Religion	1 = CHRISTN, 0 = otherwise
Q41	NOREL	Not Christian or No religion	1 = NOREL, 0 = otherwise
Q43	MUN1	Rural community/municipality	1 = MUN1, 0 = otherwise
Q43	MUN2	Small town/municipality	1 = MUN2, 0 = otherwise
Q43	MUN3	Urban municipality (>9999)	1 = MUN3, 0 = otherwise
Q44	REG1	Avalon Peninsula	1 = REG1, 0 = otherwise
Q44	REG2	Burin Peninsula	1 = REG2, 0 = otherwise

Item	Mnemonic	Variable Description	Directionality
Q44	REG3	South Coast/Burgeo	1 = REG3, 0 = otherwise
Q44	REG4	Stephenville	1 = REG4, 0 = otherwise
Q44	REG5	Corner Brook/Hampden	1 = REG5, 0 = otherwise
Q44	REG6	Grand Falls/Windsor	1 = REG6, 0 = otherwise
Q44	REG7	Clareville	1 = REG7, 0 = otherwise
Q44	REG8	Baie Verte/Carmanville	1 = REG8, 0 = otherwise
Q44	REG9	Northern Peninsula	1 = REG9, 0 = otherwise
Q44	REG10	Labrador	1 = REG10, 0 = otherwise

Religious membership was included as a set of seven categories. Five of these were unambiguous -- Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Assemblies. Greater detail is provided in Table A1. Some 23 respondents belonged to small (in Newfoundland) Christian congregations such as the Apostolic, Christadelphian, Christian Brethren, Gospel Hall, Baptist and Presbyterian. These were combined into a single category and labeled "other Christian". The 35 respondents who identified themselves as belonging to religions other than Christian, or who had no religious affiliation, were also combined into a single category labeled "no religion".

The type of community or place of residence was a three point classification; namely, (i) a rural community with less than 1,000 people, (ii) a small urban area with a population at the time of the 1991 census of between 1,000 and 9,999, and (iii) urban municipalities with 10,000 or more people. Because it was thought that region of residence could also be a factor accounting for educational opportunity over and above community type, the Province was divided into the ten regions representing the proposed new school districts which closely resemble those boundaries called for by the Royal Commission on Education which reported in 1992.

Findings

This study is concerned with the extent to which five ascribed factors account for the educational attainments of adult Newfoundlanders. These factors were: gender, age, religious affiliation, place of residence, and region of residence. As a side issue we also address the question as to whether in educational terms the Commission Government era (1934-49) was a stagnant period in Newfoundland's history. The research questions were framed as conditional probabilities; namely the probability of graduation from high school, the probability of post-secondary education participation, and the probability of university graduation. The findings are presented in Table A3.

1. In terms of the probabilities of high school graduation, post-secondary participation and university graduation there were no gender differences identified. As hypothesized for the reasons given above the findings support the "null hypothesis" of no difference.

2. For all three probabilities in so far as age was concerned there were no differences found between those educated in the Colonial era and those educated during the years of Commission Government. This finding provides ample evidence for the conclusion that in so far as educational opportunity of results is concerned the Commission Government era was one of stagnation rather than change. At the same time it is acknowledged on the basis of the positive signs on all three AGE 3 unstandardized beta coefficients that the status quo ante was preserved.
3. Can we say that educational opportunities have consistently improved over the past half century for those adults educated in the Smallwood Government years and after? There is little ambiguity about the answer to this question.

The opportunities for high school graduation and post-secondary participation were significantly better than those in either the Colonial or Commission Government eras. Table A3 findings, however, were not supportive of the hypothesis that the chances of graduating from university had improved when controlling for the other four potentially confounding factors in the model. They show that the opportunity to graduate from university is no better statistically for today's young adults than it was for their grandparents educated in the Colonial era, a finding which was unexpected.

4. We argued that there would be few, if any, educational differences among the mainline or founding denominations; i.e., the Catholics, Anglicans, and United Church adherents. The findings support this thesis in that there were no differences among them on any of the three probabilities. The arguments based on Adam Smith's thesis that adherents of the austere, non-mainline denominations such as the Salvationists and Pentecostals would have lower educational levels and fewer educational opportunities than the members of the mainline denominations was only partially supported. The thesis was partially supported in the case of Salvation Army members but not for the Pentecostals. Thus, Salvationists were significantly less likely to graduate from high school than were Catholics; but there were no differences for the Pentecostals and the "other Christian" groups compared to the Catholics. The most interesting finding related to religious membership was that, as hypothesized, the respondents identifying themselves as members of other than Christian religions, or of no religious affiliation, were far more likely to be post-secondary education participants and university graduates than the members of other religious groups. In sum, hypothesis #3 was substantiated in two particulars (the absence of educational differences between mainline denominations and the advantages of the non-Christian category over all other religious groupings), but only partially substantiated in the third particular (the claim that non-mainline denominations would likely be educationally disadvantaged).

Table A3. Logistic Regression Estimates for the Conditional Probabilities of (i) High School Graduation, (ii) Post-Secondary Participation, and (iii) University Graduation

Independent Variables	Dependent Variables					
	High School Graduation		Post-Secondary Participation		University Graduate	
	Beta	t-squared	Beta	t-squared	Beta	t-squared
Gender	.159	.962	.126	.671	-.190	.676
Age 1	1.704***	22.410	1.231***	10.023	.087	.021
Age 2	1.160***	13.422	1.147***	9.823	.640	1.354
Age 3	.268	.586	.560	1.931	.530	.786
Anglican	.175	.648	.125	.398	.112	.131
United Church	-.039	.028	-.002	.000	.427	1.832
Salvation Army	-.722*	5.179	-.274	.694	-.082	0.20
Pentecostal	-.173	.268	-.167	.229	-.637	.673
Other Christian	.312	.330	.168	.121	1.103	3.503
Other Religion	.520	1.084	.905*	4.488	1.663***	12.850
MUN1	-.910***	14.956	-1.014***	22.903	-1.044**	8.751
MUN2	-.453	2.542	-.274	1.098	-.192	.239
Reg2 Burin	-.049	.018	-.722	3.173	-.693	.758
Reg3 S. Coast	-1.047**	6.157	-.956*	4.270	-6.263	.356
Reg4 Ste'ville	-.861	4.952	-.613	2.132	.286	.244
Reg5 Cnr. Brook	-.253	.658	-.396	2.144	-.016	.002
Reg6 Grand Falls	.057	.024	-.281	.879	-1.202*	4.704
Reg7 Clarenville	-.317	.912	-.576	2.774	-.251	.219
Reg8 Baie Verte	-.672**	6.474	-.435	2.567	-.531	1.297
Reg9 N. Peninsula	-.607	1.856	-.003	.000	-.905	.702
Reg10 Labrador	-.498	1.813	-1.289***	10.642	-2.315*	4.897
Constant	0.269	0.39	-.927*		-1.807*	7.037
Chi square	129.084***		108.440***		72.607***	

* p<.05; **p<.01; ***p <.001

5. Both community type and region of residence accounted for each of the three conditional probabilities, essentially as hypothesized. There were no differences between the urban centres and small municipalities in terms of the three probabilities, while, in contrast, residence in a small rural settlement proved a substantial barrier to educational achievement. There is no doubt on the basis of these (Table A3) findings that both urban and small town dwellers are educationally advantaged in terms of high school graduation, post-secondary participation, and university graduation. Pockets of educational disadvantage were also located in several regions of the Province. Compared to the Avalon region all other regions to varying degrees were educationally disadvantaged, but in most cases the differences were not statistically significant. Exceptions, however, included regions 3 and 10 (the South Coast and Labrador) which were disadvantaged on two out of the three criteria of educational opportunity; while regions 4 and 8 (Stephenville and Baie Verte) were disadvantaged in terms of high school graduation; and, finally, residents of region 6 (Grand Falls/Windsor) were disadvantaged in terms of the opportunity to graduate from university.

Conclusion

This study of the equality of educational achievement in Newfoundland has focused on five ascribed criteria, each of which, potentially, could constitute a barrier to the attainment of an individual's educational potential and therefore to full participation in Canadian society. We argued that in Newfoundland it was unlikely that barriers to educational attainment would be found on the basis of gender; and this hunch was supported by the analysis. And, as expected, we found that the substantial improvements in the Provincial economy over the past half century were accompanied by considerable educational expansion, followed by the progressively higher educational attainments of subsequent generations. By the same token as the barriers to educational attainments on the basis of age dissolve through attrition -- as the older generations die off -- we can expect the age factor as a barrier to decline.

We also found barriers, as expected, in terms of religious membership. But these were far less than we anticipated on the basis of our theorizing. Salvationists were less likely to have completed high school than the members of other Christian denominations. And the members of the mainline denominations were far less likely to have completed post-secondary schooling than either non-Christians or those with no religious affiliation. This finding gives rise to two questions, namely, (i) Is being a Christian these days a handicapping condition in so far as the attainment of higher education is concerned, or does having a higher education tend to promote agnosticism? and (ii) Whatever the answer to the first question, is it culturally problematic?

Notwithstanding the effects of age and religious membership discussed above, the two factors which accounted most for the magnitude of the disparities in educational attainments, were the type of community in which a person resides and the region of the province where the community is located. Fact number one is that Newfoundlanders living in small rural settlements of less than 1,000 persons have educational attainment levels well below those living in the urban centres and small towns and that, given current educational policies based on equal treatments even for persons who are not necessarily equal, these inequities are likely to remain. And fact number two is that persons living on the South Coast, Stephenville, Baie Verte, and Labrador regions are much less well educated than the residents of the Avalon Peninsula and the other five regions of the Province; and, again, given current educational policies, these inequities are likely to remain unchanged. The ten regions, moreover, are those contiguous with the ten new school districts proposed by Government on the recommendation of the Royal Commission on Education. The School Boards in the four disadvantaged districts will have little chance to improve matters in their regions if the equality principle is based on the erroneous assumption that the people in these regions are otherwise equal to those in other regions in so far as educational treatments are concerned. The evidence suggests that they are culturally different and that such differences may justify unequal treatments.

Statistical Appendix

Logistic Regression

The estimates presented in Table A3 which follow are based on a logistic regression analysis. The logistic model uses a maximum likelihood estimator and is a natural complement of the least squares estimator used by the multiple regression

model in the situation where the regress and, or dependent variable, is not continuous but, rather, in a state which may or may not obtain; for example, high school graduation or not, contraction of a disease or not, or voting yes in a government referendum or not. When such variables occur among the regressors of a regression equation they can be dealt with by the introduction of (0, 1) dummy coding; but when the dependent variable is of this type, the regression model breaks down (some key assumptions such as that of bivariate normality are violated). It is in such instances -- i.e., in the case of qualitative dependent variables -- that a logit or logistic model provides an appropriate alternative.

Both the multiple regression model and the logistic regression model are designed to address systems of causal relations as opposed to statistical association. Both are designed to be isomorphic to the experimental model where the direction of causality is not in question. Both address models where there is a clear *a priori* asymmetry between the independent variables (regressors) and the dependent variable (regress and). But unlike regression the logistic model permits interpretation in terms of utility maximization in situations of discrete choice. Regression requires a disturbance term, but like all probability models the random character of the dependent variable in the logistic model flows from the initial specification.

Mathematically, the probability of falling into group 1 (not group 0) is expressed as follows. Probability of being in group 1 (e.g., high school graduate) = $1/(1 + e^{-z})(1)$ where e is the base of natural logarithms (2,718), and Z is estimated from an equation which optimally weights each predictor variable. This necessitates the probability being greater than 0, but less than 1, given $Z = B_0 + B_1X_1 + B_2X_2 + \dots + B_pX_p(2)$ where B_0 is the constant term and $B_1, B_2,$ and B_p are the coefficients each of which is estimated mathematically to maximize the predictive accuracy of the equation. The mathematical computations are done by computer, being too complex to be done by hand.

From the public opinion on education data set used in this study, where 1 = high school graduate, 0 = non-high school graduate equation 2 is (see Table A3):

$$\begin{aligned} Z = & .269 + .159(\text{GEN}) + 1.704(\text{AGE1}) + 1.160(\text{AGE2}) + .268(\text{AGE3}) + .175(\text{ANGLICAN}) \\ & - .039(\text{UNITED}) - .722(\text{SA}) - .173(\text{PENT}) + .312(\text{CHRISTN}) + .520(\text{OTHREL}) - .910(\text{MUN1}) \\ & - .453(\text{MUN2}) - .049(\text{REGION2}) - 1.047(\text{REGION3}) - .861(\text{REGION4}) - .253(\text{REGION5}) \\ & + .057(\text{REGION6}) - .317(\text{REGION7}) - .672(\text{REGION8}) - .607(\text{REGION9}) - .498(\text{REGION10}) \end{aligned}$$

where the values for the independent variables were obtained from Table A3. Consider the probability of a 64 year-old Pentecostal man from Carmanville, a small urban community in the Baie Verte region of the Province, graduating from high school.
 $Z = .269 + .159(1) + .268(1) - .453(1) - .672(1) = -.602$

Thus, the probability of high school graduation from equation 1 is:

$$1/(1 + e^{-(-.602)}) = 1/(1 + e^{.602}) = 1/(1 + 1.826) = 1/2.826 = .354$$

That is, the chances are approximately one in three that this person (or his statistical twin) will have graduated from high school. Suppose, however, that the same person instead of being a resident of Carmanville in the Baie Verte region had been a resident of St. John's. His Z-score would be 0.523; hence the probability of his graduation from high school would be:

$$1/(1 + e^{-(.523)}) = 1/(1 + .593) = 1/1.593 = .628$$

That is, his probability of graduating from high school will have significantly increased from 35 per cent to 63 per cent. Obviously there are clear educational advantages to being a resident of St. John's on the Avalon Peninsula.

Now, consider the probability of a 21 year-old Anglican female from Carbonear graduating from high school $Z = .269 + .159(2) + 1.704(1) + .175(1) - .453(1) - .317(1) = 1.696$

Thus, the probability of high school graduation is:

$$1/(1 + e^{-(1.696)}) = 1/(1 + .183) = 1/1.183 = .845$$

Or, her chances are better than 4 out of 5 that she will graduate from high school. Would it have made any difference if this person had been a resident of St. John's? Her Z-score would be 2.466. Thus, her probability of high school graduation had she been a resident of St. John's would have been:

$$1/(1 + e^{-(2.466)}) = 1/(1 + .085) = 1/1.085 = .922$$

In other words although her probability of graduation from a Carbonear high school was high (84 per cent probability), her chances would have been even higher by an additional 8 per cent had she been a resident of St. John's. Both type of community and region of residence make a difference.

SCHOOL RETENTION AND THE CANCELLATION OF OAC'S

Noel P. Hurley
Faculty of Education
University of Windsor
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Editorial Introduction

In Newfoundland, educators are used to looking outward to other Canadian provinces for inspiration and advice. How do they handle this issue in Ontario? What is policy on such and such an aspect of schooling in Alberta? When we ourselves are the focus of policy interest on the part of teachers and administrators in other provinces we are pleasantly surprised. Thus, we were pleased to receive a report on school retention policies in Ontario in which the author points to the Newfoundland experience vis-a-vis student retention as constituting a set of model procedures.

The author, Dr. Noel P. Hurley, is a professor in the Faculty of Education, University of Windsor. Prior to his University of Windsor appointment he was an Assistant Superintendent (Curriculum) with the Conception Bay North Roman Catholic School Board. His doctorate at the University of Ottawa was in the area of Educational Administration, where his special research interest was in the formulation and estimation of econometric models of schooling resource allocation processes and their relationships to both the affective and cognitive outcomes of schooling. In addition to a career in the public sector Dr. Hurley has worked in the private sector where he held directorships in several Newfoundland companies, and has held public offices at the municipal level.

Hurley argues that the November 1995 cancellation of an advanced university placement program in Ontario high schools known as the Ontario Academic Credit will adversely affect student retention rates. He draws on his experience as a member of the Dropout Prevention Committee of Newfoundland's Department of Education in 1989, as well as on the positive results stemming from the implementation of policies recommended by the Committee. In the paper he traces the origins of Newfoundland's dropout prevention policies over the past 15 years, policies which have been bearing fruit for several years now in this province, and which in his opinion could well be heeded by the policy makers in other provinces during a period of retrenchment in public education services.
(Jeff Bulcock)

Retention Rates: The Ontario Case

Ontario has been the envy of most other provinces over the years, at least in terms of a few educational indicators. One of these areas has been its student retention rate. The number of students who have remained in school in Ontario has been consistently the highest or nearly the highest for the past couple of decades. It can be argued that this has in large part been a result of the existence of the Ontario Academic Credit (OAC) year.

Ontario students have been able to complete the equivalent of first year university for modest direct cost in their home high schools. On November 2, 1995, however, John Snobolen, Minister of Education, announced the cancellation of the OAC

year in Ontario beginning in 1997, becoming fully effective in the year 2001. The province intends to compress its five high school years into four years. Snobolen said, "It means we're going to do some compression and have normal high school completed in four years". How is the reduction of the number of years of schooling likely to affect Ontario students?

Policy Implications of OAC

If one examines Snobolen's statement critically, it leaves the Ontario government the option of off-loading the OAC year of schooling onto the individual. In Newfoundland and many other jurisdictions the equivalent of OAC is purchased privately by students in the form of a junior studies or a general studies year at university. The likely effect of the cancellation of the OAC year will be the reduction of the number of students who complete that year of schooling. It might be that Snobolen feels "ordinary high school" is schooling to the end of grade 12. For the Minister and The Government OAC might no longer be "ordinary high school".

Student Retention in Newfoundland

Student retention has long been identified as a problem in North American education. Schreiber (1967) stated that it was 1950 before the number of students who stayed in school until their normal graduation year equalled those who dropped out. Newfoundland, too, has long been concerned with student retention as was evidenced by the appointment of the Crocker and Riggs (1980) Taskforce on **Improving School Retention and Post-secondary Participation**. The Newfoundland Department of Education established a student retention committee in the 1980's to develop policies to address the still persistent problem of student retention. The advent of the grade 12 program in Newfoundland saw an improvement of the retention rate of students that seemed to be the result of increased academic success of students because the academic requirements were spread over four years rather than three. Many studies such as Radwanski (1987), Crocker and Riggs (1980), and Harris and Snelgrove (1983) identified the main cause of student dropouts as student dissatisfaction with school.

What Researchers Find About Student Retention

Ontario recently appointed a sociologist to study the issue of the relevance of educational programs and the issue of dropouts. Radwanski (1987) reported that the dropout of students in Ontario was more related to student socio-economic background than to school factors. His arguments, similar to those of Coleman et al. (1966), claim that higher student achievement was related to higher socio-economic levels. Radwanski pointed out that students in lower socio-economic home environments receive less support and encouragement with regard to their school work. If this argument is valid then Newfoundland students would be much more likely to drop out than their more affluent counterparts in Ontario, but in recent years such has not been the case. The Newfoundland Department of Education, in the early 1980's, identified low retention rates as a major educational system problem. Only 55 percent of seventeen-year-old students were staying in school until their normal graduation year. These were the years when the Newfoundland high school program was compressed into three school years. The introduction to Grade 12 to the Newfoundland system

increased the student retention rate in spite of predictions from a task force on dropouts in the opposite direction.

Two reasons are suggested for the subsequent increase in retention rates. One was the lengthening of the program from three years to four years which made it possible for academically challenged students to master learning outcomes which were too demanding over a three year period. The second reason that one can propose has to do with an increase in the expectations of students accompanying the additional year of schooling. Since the curriculum was made more manageable it was easier for a larger proportion of the student body to meet with success. Other recent studies, too, have reported that academically successful students have more favourable attitudes towards school and are less likely to drop out.

Radwanski (1987), for example, reported that surveys completed by Decima and Goldfarb for his Royal Commission identified the main reason for withdrawal from school as being school related. These findings were consistent with similar studies in Newfoundland that identified problems in school as the leading reason why students withdrew.

Potential Consequences of the Snobolen Initiative

The Snobolen initiative is likely to make the curriculum load more difficult for students to master over the shorter period of time. Average and slower students are likely to be more challenged by the contraction in the high school program. If the Newfoundland experience can be used as an example, then many Ontario students are likely to become discouraged; hence, they will be more at risk to drop out before graduation.

Thus the cancellation of the OAC year of schooling in Ontario is likely to be a "double jeopardy" for many students, but especially the disadvantaged. They will be more at risk to drop out before graduation. If they persevere and successfully graduate they will have the further challenge of trying to fund an additional year of post-secondary study. One presumes that the Minister is unaware that Ontario's grade 12 students are performing in aggregate below the level of grade 12 students in the other 9 provinces. Thus, it is likely that fewer students will be able to successfully complete the four year degree programs at Ontario's universities.

Learning from The Newfoundland Experience

What then are the lessons that Ontario can learn from the Newfoundland experiences of the mid 1980's? Any answer to this question has to be preceded by a second question: Which goal is most important to the Ontario educational system? Is it equity, accountability, efficiency, or adequacy? In these conservative times of budget cutbacks, doing more for less, and more scholar for the dollar discussions, equity tends to take a back seat to efficiency concerns. Thus, Snobolen is not likely to be concerned about the possibility of Ontario students having to pay for a general studies year as Newfoundland post-secondary students do. It seems that the reduction of the OAC year will probably result in the reduction of student achievement outcomes by one year. Perhaps the years of schooling might have been more painlessly reduced by eliminating the junior kindergarten program which was probably begun as much to provide cheap day care as for educational achievement outcomes. One of the strongest features of

the OAC program of studies is that it makes it possible for all Ontarians, regardless of socio-economic status or geographic location, to complete one year of education generally considered to be post-secondary in other provinces. Thus Snobolen's cancellation will tend to make the Ontario system more elitist. As tuition fees increase in response to transfer cuts at the post-secondary level fewer students from lower socio-economic levels will become post-secondary participants. The elimination of OAC will therefore promote greater inequity among different income groups in the province.

It seems that the two provinces are heading in different directions from an educational perspective. On the one hand Newfoundland adapted many strategies from Ontario that seemed to promote educational conditions favourable to student retention - it lengthened the number of years for its high school program and concomitantly raised its level of student retention. On the other hand Ontario is contracting its program, and that will likely frustrate students who are experiencing academic difficulty and increase student dropouts. Whether or not the cancellation of the OAC year actually saves the economy of Ontario money or causes an erosion of its stock of human capital and a student retention problem should be a subject of debate in months and years to come.

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FORECASTING THE FUTURE SPECULATING ON THE NEXT 25 YEARS

Terry Piper, Ph.D.
Dean, Faculty of Education
Fall 1997

I am pleased to have been asked to speculate on the future of the Faculty of Education. One of the things I like best about my job is the opportunity, indeed the responsibility, to think and speculate about the future of education. The future is partly shaped by the past, of course, and for Memorial University's Faculty of Education, there are certain events in our past that have influenced the course we are setting ourselves for the future. In the next few pages, I would like to reflect on some of those events and to describe the direction I think the Faculty will take in the next quarter century.

The Past

January 1987: Submission of the report of the *Small Schools Study Project*

The Provincial Department of Education commissioned a study into small schools directed by Dr. Frank Riggs, now retired from the Faculty of Education. The primary purpose of the project was "to investigate problems peculiar to small schools with an aim toward developing proposals to enhance educational opportunities for students in these schools." The Department and the report affirmed that teaching and learning in small schools has special characteristics. The report recommended the greater use of technology for program delivery in small schools, especially in high schools. In making this recommendation, the authors of the report obviously responded to certain educational realities: not every school can afford the teachers and the materials to mount all the courses that students and their parents have a right to expect; not every school can afford a full time music teacher, and the distance between schools is often too great for an itinerant teacher to work effectively. As the range of program and course options narrows, the viability of the school is threatened, and the viability of these schools is essential to the viability of their communities. The importance of, and the need to support, small schools was thus affirmed.

November 1988: The release of *Focusing our Future*

In August of 1987, Memorial President Dr. Leslie Harris established a committee to review all aspects of teacher education in the province. Chaired by Madeline Hardy from London, Ontario, the committee was given very broad terms of reference to conduct a complete and unbiased study of the state of teacher education. In November of 1988, the committee's report was released, and it was to have a profound impact on the direction and the structure of the Faculty of Education. It is impossible here either to summarize the report or to capture the full extent of the Faculty's response to it. Nevertheless, certain of the recommendations and the way the Faculty has responded to them seem to point us in a particular direction.

There were a number of recommendations in the report dealing with the internship, but two deserve special mention not only because they have been demanding a great deal of Faculty time during recent years but because they signify a different kind of relationship with the schools. In brief, the report recommended that a

model for internship be developed that provided for closer involvement of teachers in the supervision of interns and a clarification of the roles of all participants. Under the leadership of Dr. Dennis Treslan and Dr. Alice Collins and with the assistance of many members of the faculty, including Drs. Andrea Rose, Barrie Barrell, Amarjit Singh, Bill Kennedy and Elizabeth Yeoman, a new model for the internship has been implemented in the province and in Harlow. We are excited about this model because it changes the University's role in the supervision of interns and gives greater professional responsibility to teachers, principals and other school district personnel. To venture just for a moment into the future, I see the Faculty in the next decade working with the profession to create a development plan for master teachers and supervisors and to refine the selection criteria and role of all participants in the enterprise of student internships. What is especially exciting about the new model is the opportunity it affords for the University to work in true partnership with professional teachers.

Focussing our Future recommended that the Faculty extend its distance offerings, and that is a recommendation that we have been very active in following. We have added substantially to our list of distance offerings, especially at the graduate level, and have diversified the delivery modes as well. This is a theme to which I will return shortly.

March 1992: The release of the report of the Royal Commission of Inquiry entitled *Our Children, Our Future*

The Royal Commission was established to inquire into the delivery of programs and services in the schools. While the committee was not charged with assessing programs in the Faculty of Education, we are in the business of educating teachers, and so much of the report had implications for the Faculty. During the last few years, we have turned our attention to a number of matters that were identified by the Royal Commission as needing attention although, in fairness to the Faculty, it must be said that many of these issues were already on the agenda. In this latter category, for instance, was the recommendation that the Faculty, undertake research into the school contexts in which first year teachers are placed with a view to gathering realistic information to help shape preparation programs" (p. 31 of summary report).

The Royal Commission recommended the establishment of School Councils to ensure that parents and communities had a voice in the education of their children. The Faculty of Education, largely through the work of Dr. Alice Collins, has played a significant role in establishing and monitoring the work of these Councils. The Royal Commission also recommended "that the Faculty of Education establish a Centre for Small Schools which would address problems of particular concern to small schools and approaches to teaching in multi-grade classrooms." In a slight variation on this theme and with the help of a substantial grant from Industry Canada, we opened in 1997 the Center for TeleLearning. What began as a Center for TeleLearning became effectively a home for both Telelearning and rural education since the context for TeleLearning in this province is chiefly rural or small schools.

Recommendation #86 of the Royal Commission report was that the Faculty of Education, in conjunction with school boards, designate selected schools as University Schools which would assume a cooperative role with the Faculty of Education in order to prepare teachers adequately for the realistic demands of teaching and to enable the Faculty to experiment with innovative teaching ideas and practices." We have begun to meet the spirit of this recommendation through projects initiated by individual faculty

members. In particular, Jean Brown and Bruce Sheppard were instrumental in formalizing a partnership arrangement with the Western Integrated School District (as it was then known), and Ken Stevens and I were instrumental in fostering a similar relationship with Clarendville High School. This latter project is part of the school's renewal plan and will see different faculty members involved at different times as the school turns its attention to changing various aspects of its curriculum and administration. Other faculty members are working closely with schools in ways that may be formalized later. Even if they are not, the spirit of such cooperative arrangements is to create environments that truly facilitate learning, both for the pupils in the schools and the teachers and potential teachers who teach there. There were a great many other recommendations made by the Royal Commission that have influenced the Faculty's direction since the report was released and will continue to do so in the coming decades. I have mentioned only a few. The point is that the Faculty has responded to the call for change and has done so quickly and positively.

January 1994: Publication of Launch Forth, a Strategic Plan for Memorial University of Newfoundland

In this document, the University affirmed its commitment to education for students whose needs might differ from those of traditional students. It also acknowledged the University's obligation to the community of the province and the region. With regard to the Faculty of Education, many interpretations are possible, but two things seem abundantly clear. One is that we must take a hard look at exactly who our non-traditional students are in the Faculty. Are they part time students? Are they rural? Or are they defined as having particular needs as teachers that we are not meeting? Another perspective on this issue has to do with demographics. As out-migration continues to result in a declining population, a fact that is felt in school and university registrations, the Faculty may well find itself looking beyond the shores of the island and the boundaries of Labrador for students in our courses. Second, we must never forget that however far off shore we may look for our students, our primary responsibility is to students and teachers in Newfoundland and Labrador, and that responsibility extends to *all* schools and teachers in the province, not just those conveniently located in St. John's.

February 25, 1997: Memorial President Arthur May announces the appointment of the Industry Canada Chair in TeleLearning in the Faculty of Education

With this appointment, the Faculty signaled its participation in the information age. Dr. Stevens' mandate is to facilitate research on teaching and learning in the TeleLearning environment. His background and interests in rural schools situate him well to realize that goal within the context of small and rural schools in Newfoundland and Labrador. In my view, that is entirely appropriate. It is consistent with the broader goal of the University as articulated in Launch Forth, it is consistent with many of the recommendations made in the other reports mentioned above, and significantly, it is symbolic of one of the directions the faculty is taking as it prepares to educate teachers for the 21st century.

The Future

There is much about which I could write, many strengths of this faculty that I see developing over the next few decades. The events from the past I have highlighted above, however, point to two particular areas of growth, one related to distance delivery of our existing programs and the other related to the possibility of creating new programs to focus on the needs of small schools.

We are in the early days of a communications revolution that will have a profound impact on teaching. Evidence that this is true comes from the number of courses we now offer via the internet, by the number of courses faculty members are developing for delivery using cd-rom, the world wide web and a number of other delivery options that were not available when the Morning Watch made its debut. (I invite you to visit the Faculty's home page and explore some of the options available.) We will continue to move in this direction although there are a great many obstacles to overcome. One is attitudinal.

I often wonder what kinds of discussions occurred at Oxford and Cambridge and at continental universities when the printing press was an emergent technology. Did our academic predecessors engage in speculation about the future of education? Did they worry about the cost of producing books? Did they worry that the publication of books, especially in the vernacular, would change the very elite character of university? In other words, would demands on the universities change as more people had access to books? What would happen to quality? And what about tradition? I don't know whether such discussions took place, but they very well could have, and if they did, our predecessors faced the same questions that we face today. There is not the space here for a full discussion of these issues, but let's take a brief look at a few of those most often heard in connection with computers and on-line teaching.

The most common argument against major expansion into hi-tech delivery is the cost. Certainly this is a serious objection when every public educational jurisdiction in North America is fighting to maintain any kind of capital budget. The fear that computers will wipe out the entire resource budget is a real one. Do we want more modems at the expense of books in the library? The solution to the problem of cost is by no means simple, but we can take some comfort in Moore's Law. This precept holds that the same amount of money spent on a computer today will buy twice the power in 18 months' time. Twenty years ago pocket calculators represented a much larger "hit" to the budget than they do today. In ten years' time, we will be able to buy more powerful computers for much less money. What we are spending now is, in Kilian's words "tuition expenses: some of us have to learn when it's costly to do so, so that we can transmit our hard-earned knowledge to the next generation. Pioneers always have to pay a higher price" (1997, p. 33).

Critics also make the point that not everyone is comfortable using computers and, more specifically, that however effectively they may be used for instruction, on-line instruction is not better than face to face. As to the comfort factor, as computer applications become more diverse and easier to use, more people are finding some use of the computer with which they are very comfortable. Many people are expanding their computer use to new applications, whether to word-processing, e-mail, or web browsing. In classrooms, teachers are using computers in art and music class as much as in science and English, and they are increasingly using them with students who are themselves familiar with some applications before they come to school. There is little doubt that comfort levels are improving.

I doubt that many educators would claim that computers will replace teachers or argue that there are many instructional applications that can take the place of personal contact. What the computer can do, of course, is provide an amazing array of resources to teachers, and for students who are isolated or home-bound, education delivered over the internet or by cd-rom may be the only alternative to none at all. What is important to remember is that computers, smarter than they once were, are still essentially only dumb machines. Humans still provide the structure and content for teaching. The computer is just a very efficient tool.

Still, there are important pedagogical questions that must be asked, and they are properly asked within faculties of education. This one will be no exception. At the same time that we are looking at the use of technologies to equalize opportunities in small schools, we will be looking at more fundamental issues. We will be asking questions such as what kinds of teaching are most effectively done on line. What happens to the student-teacher relationship and how does it influence learning? What is the effect of putting children in front of computer monitors for extended periods of time? What are the psychological and sociological consequences of our increased reliance on computers? Some would argue that we need the answers to these questions before we commit more of our scarce resources to technology. But of course we can't do that. We cannot sit back and wait for someone else to answer the questions. We have to find out for ourselves what the best uses of the various technologies will be, and we can only do that through active experimentation with those technologies.

I was asked by the editors of *The Morning Watch* to speculate. The most interesting question to speculate about is not what technologies of the future will be or even what they can do but rather what we can do with and because of them. If I thought the answer had to do only with increasing resources and access, I'd still be interested, but I'd also be a lot less excited. I think that the potential of technology lies in the possibility of radically reconceptualizing what it means to learn and to teach. We have an opportunity, an exciting one, I think, to revitalize or even recreate the roles of teachers and learners. What is truly exciting is that this broader perspective crosses discipline boundaries. I am not so worried about creating techno-junkies or about focusing our attention too exclusively in the sciences rather than the arts. Here in Newfoundland, I see the potential of technology to enrich and protect rather than to replace the strong traditions in music and the arts. If it were otherwise, I would not be interested. The work I see faculty members doing nearly every day in drama and music, to name only two areas, convinces me that that is the power of technology and that its potential is being realized in exciting ways.

In short, I believe that technology may well provide us with the opportunity to reclaim education. In ruminating about the future of on-line teaching, Kilian puts it very well:

"Somewhere in the fairly recent past, education fell into the hands of the bean counters. Nowhere in Plato do we learn how many evening symposiums were required for a Socratic certificate. Alexander the Great never had to send back to Aristotle for a transcript of his grades. When Paul had his revelation on the road to Damascus, he didn't hand in a term paper on what he'd learned (nor did he cite God's question as a "personal communication in the footnotes), and his epistles did not appear in refereed journals. Custer went to West Point; Crazy Horse didn't.

J. Alfred Prufrock measured out his life with coffee spoons. We measure out our own in credit-hours and essays submitted and MLA-approved citation format. This bureaucratization generates a lot of clerical work and committee meetings, but I really doubt that it advances genuine self-propelled learning.

"After all, what we learn ought to surprise us, open up unexpected opportunities, create whole new industries and cultures....

"We online teachers are domesticated beasts suddenly at liberty, like the conquistadors' horses running wild on the Texas plains. If we can learn how to be free, and how to stay free, then we can teach the same freedom to our students. I can't imagine a nobler calling." (p. 34)

Nor can I, and if we can recreate learning and give learners the permission and the tools to take charge of their own learning, we will be well rewarded for the expense and the effort. We will have provided them with the real tools to become life-long learners. This freedom that transcends discipline boundaries, that creates thinkers whether they be mathematicians, poets or musicians, this is what excites me about technology and the future.

I would like to thank the editors of the *Morning Watch* for the work they have done during the last quarter century. They have provided us a forum for thinking and talking about a great many educational issues over the years, a platform to debate and, as for me in this issue, an opportunity to dream.

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**STRUCTURAL CHANGE COMBINED WITH TRAINING
CAN DELIVER EFFECTIVE SITE-BASED MANAGEMENT**

**Lorraine Devereaux
Holy Redeemer Elementary School
Trepassey
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Abstract

This article centers around a research project involving fifteen schools based both in Canada and in Europe. It brings awareness of the basic power shifts considered essential for effective site-based management. It conveys knowledge that training in site-based management theory when combined with exposure to site-based management in practice does make a difference to the success of this contemporary management system. This difference was especially evidenced in the area of leadership approach, which requires particular and immediate training focus prior to implementation of site-based management.

There appears to be a growing realization of the need for change in the educational system among researchers (Barth, 1990; Fullan, 1993; Sergiovanni, 1994). Numerous calls from society for increased school effectiveness and advanced student achievement implies that a cooperating management team within schools is a fundamental ingredient for school improvement. Site-based management, in which principal, teachers, parents, community members and students are given autonomy to effect educational change, is accentuated as a credible change mechanism that has the capacity to revitalize today's educational system (Herman & Herman, 1992; Hill, Bonan & Warner, 1992; Midgley & Wood, 1993). Site-based management requiring school-based decision making and increased stakeholder involvement presently engulfs schools in many regions of the western world. For example, Australia, New Zealand, more than forty states in the United States, as well as all European countries (with the exception of Portugal and some areas of Germany), have already placed their faith in this contemporary management system. In addition, Canadian provinces such as Nova Scotia and Newfoundland and Labrador have recently joined Alberta, Saskatchewan and Prince Edward Island in their quest for shared decision making in school management (Nova Scotia Department of Education, 1994). In their advocacy for school-based decision making, The Royal Commission of Inquiry into the Delivery of Programs and Services in Primary, Elementary, and Secondary Education (Royal Commission, 1992, p. 222) suggest that schools flourish when groups that collectively pursue a common goal are given the power to initiate change and face together the complex forces that are influential in teaching and learning. Currently in its formative years of site-based management, Newfoundland and Labrador's recent reduction in the number of school boards adds fuel to the necessity for increased school-based decision making in this province.

Deterrents to Site-Based Management

This mostly mandated structural change, however, presents educators and researchers with a major concern. As educational practitioners confront implementation of this blanket government policy, there is fear that not all site-based management participants may be sufficiently informed about consensus decision making to ensure effective change in such a vital area for school improvement (Collins, 1995; Devereaux, 1995; Sheppard & Devereaux, 1997). It is a widely held belief that without sufficient training for school council participants, a move to site-based management may be superficial, simply changing the power base from one group setting to another (Conley & Bacharach, 1990; Fullan, 1993; Nova Scotia Department of Education, 1994; Sergiovanni, 1994). The Steering Committee for School Council Implementation (1994, p. 7-8) suggested that "resistance to sharing power is perhaps the greatest barrier to change," while Collins (1995) reiterated concerns expressed by The Royal Commission (1992) that it is quite possible that school councils may be dominated by principals.

Contemplating this anxiety, The Royal Commission (1992, p. 211) suggested that, "competent leadership is critical for any major restructuring to work, but it will need to be developed and nourished and steps will have to be taken to identify appropriate leadership models, skills and potential leaders." In Newfoundland and Labrador, The Schools Act 1996 clearly places responsibility for establishment of legislated school councils among the duties of each and every school principal in this province. Since the essential role of the school principal as change agent is widely recognized (Mahon, 1991; Hannay, 1992; Haughley and Rowley, 1991; Keedy and Finch, 1994), training and professional development are vitally needed for adoption of site-based management (Bailey, 1991; Bolman and Deal, 1991; Peeler, 1991; Thurston, Clift and Schact, 1993).

Many researchers recognize that the transformational leadership approach is steadily emerging as the preferred form of leadership for change (Bass, Waldman, Avolio and Bebb, 1987; Brown, 1994; Leithwood, 1992). Kouzes and Posner (1995) report similar sentiments as they recount findings based on a sample of more than 36,000 managers and their subordinates that stress challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and encouraging the heart as effective leadership practices in a site-based management environment.

Purpose and Methodology of Study

This study was initiated specifically to identify the appropriate leadership approach required for the successful implementation of school councils. It was undertaken to ascertain approaches to leadership and power that were perceived to exist in schools and to determine if leadership and power positions varied with involvement in school councils.

To accomplish this objective, a two-phase research study was conducted. In phase one, a group of research participants in Newfoundland and Labrador, Canada, were selected and were invited to respond to two survey type questionnaires: the Leadership Practices Inventory (Kouzes and Posner, 1989) and The Relationship Between Principals and Members of School Councils (Chapman, 1982). The composition of the sample population for this quantitative non-experimental investigation included 207 principals, teachers, parents, community members and students from thirteen schools. From this sample, seven schools were involved in school councils, while involvement with site-based management in the remaining six schools was nil.

The second phase of the investigation was conducted in two site-based managed European schools. Claims that this environment has one of the most highly evolved types of site-based management, as well as accessibility to schools having several decades of involvement in self-management, attracted the researcher to this specific setting. Through this qualitative component of the study, data were gathered using taped interviews, journal keeping, principal shadowing, and analysis of school policy and other school-related documents. Opportunities for participant observation in various work situations, including both staff and school council meetings, were provided to the investigator spanning a period of one month. Approximately two weeks of data collection was conducted per school. During this time two interview schedules that were grounded in the questionnaires already used in Canada were administered.

Due to the composition of participants in the qualitative section of the study, extra caution was applied to ensure confidentiality in data presentation. There was one male and one female principal; therefore one principal was labeled as male gender and referred to as Principal One; the other principal was designated female gender and referred to as Principal Two (the gender may or may not be accurate). All teacher and school council member participants in this study were referred to as female (again, the gender may or may not be accurate).

Findings

The image of fifteen schools sprawled throughout sparsely populated rural areas and densely populated urban areas in parts of Canada and Europe conjures up diversity. Equally diverse is their exposure in varying degrees to site-based management. In Canada noninvolvement and involvement in the initial stages appeared to be the norm. In Europe, however, excitement mounts as the researcher discovered the possibility to study site-based management that spans decades and, further still, to investigate completely autonomous site-based management. In the totally site-based managed school, contact with school boards had been eliminated, thereby giving the school council complete control over how the funds they received directly from government were dispersed. An unveiling of these site-based management structures in the Spring of 1995 allowed rich insights into the site-based management world of principal, teachers and parents.

Findings from the European aspect of this study indicate that even though structural change has occurred and involvement in site-based management is afforded them, some school principals continue to practice a "top down" traditionalist approach to leadership, maintaining "power over" other school council members and thus capitalizing on their positional power. Genuine stakeholder involvement in shared decision making which accompanies effective site-based management appears non-existent. The primary site-based management goal of improved student learning becomes secondary to the struggle for power. The expertise of school council members remains dormant and their varying perspectives on school-related issues are not reflected upon; consequently there is maintenance of the status quo. This is evidenced in the following comments gathered from interviewed principals and their school council representatives. One school principal expressed the belief that leadership "should be enabling." However, in reference to a school council member's contribution the principal contended:

I find it irksome for the school council to be run through elementary ways of doing things. ...The school council members have recognized

that I am prepared to take on the management role in the fullest extent. ...I recognize that it can be seen as a block, a stitch up, I recognize that, but it hasn't been challenged. My school council members seem to be happy with the way we operate. (Devereaux, 1995)

A council member at this same school suggested that the principal had almost the full balance of power on school council and that as a school council member, she believed she should be given a little more leeway, stating:

I feel restricted. ...Even if we have something to say we get knocked down... We all have our little pigeon holes. ...We just do what the principal tells us all the time. (Devereaux, 1995)

In reference to whether the principal of another school used her expertise to influence school council members, a school council representative declared:

The principal just has her say. She doesn't try to lay down any laws. (Devereaux, 1995)

The principal of this school expressed her leadership beliefs, contending, "it's got to be democratic." Conversely, when addressing the issue of the principal's influence on school council, she declared:

I think most school councils, and I'm speaking for my own, they do listen to the principal. I mean 99.9% of the time the principal has her way. (Devereaux, 1995)

Neither of these principals practiced the transformational leadership approach that is compatible with site-based management. Both principals either directly or indirectly used their influence on school council. The principal who opted for total self-management for his school used expertise and positional power to completely dominate school council members. The principal at the school board controlled site used manipulation, subtly maneuvering school council members into following her agenda. Thus, these principals left school council members powerless to effect change in the educational systems of these particular schools. Although no generalizations can be made from these two schools, these findings suggest that involvement in site-based management does not guarantee that principals' leadership approaches are in alignment with the site-based management philosophy. Legislated structural change does not ensure acceptance of the shared decision making necessary for effective school councils.

At the time when this study was undertaken, site-based management was a new educational concept in Newfoundland and Labrador. Because it was a pilot project, financial resources were provided to train involved principals and school council members in site-based management theory and practice. Quantitative data collected from this phase of the research study suggest that others perceived that a more transformational approach to leadership was exhibited by principals involved in piloting the school council project, while those who were not involved were perceived to be less open to change and therefore not inclined to readily adapt to site-based management. An R-square of 0.124 was obtained when multiple regression analysis was applied to determine if there was a relationship between school council members' perceptions of the principals' leadership approach and the schools' involvement in the school council

pilot project. Thus, 12% of variance in leadership approach is explained by involvement in school councils (DF=1, 190; F=26.88; P<0005). These findings may appear contradictory to those found in the European environment; however, the significant training and support pilot school council members were given must be taken into account. Also, it should be noted that these particular principals may have already been interested in working in a shared leadership setting, since school council involvement had not been legislated at that time and principals' involvement in school councils was totally voluntary.

Ramifications

Principals are entrusted with school council implementation and are expected to become advocates for shared decision making. Consequently, movement toward management at the local school setting heightens the level of principal involvement making the principal's role in a site-based managed school even more critically related to a school's success. This changing role also requires a change in leadership approach and use of power. The new leadership approach required for successful site-based management is not innate and can be learned (Kouzes & Posner, 1995); therefore professional development for principals and other school council members is imperative for the success of site-based management (Wood & Caldwell, 1991; Levin, 1992; Tucker-Ladd, Merchant & Thurston, 1992).

One Principal of a site-based managed school forewarns us of dangers associated with site-based management when there is lack of adequate funding for resource materials and professional development resources at the school level, stating:

If the government doesn't realize it can't expect primary education to lift itself to the standards required without more resources, we're all done for. ...We are at busting point and the big risk is that we've got all these plates spinning and we won't be able to keep them all going and, you know, the possible disaster is they'll all crash to the floor. ...Now, that's a cry from the hearts of principals and it's a cry from the heart of teachers, everybody, maybe school council members too, but I think those, in a sense, are not yet close enough to see what's happening. (Devereaux, 1995)

Through site-based management training, stakeholders are prepared for striving in unison toward the common goal of elevating student performance to the highest possible level in each particular school. Working together they develop school policies, formulate the essential skills and knowledge required by today's students, review and pursue personnel and curriculum resources needed for effective school operation, and draft an action plan on how to best offer students distinctive quality preparation in all growth areas. Then, site-based management participants share accountability and responsibility for decisions that are made. Equipped with a clear focus on the primary goal, while being supported and encouraged by the other school council members, teachers are empowered and challenged to promote higher standards of achievement and to raise student outcomes. Hence, site-based management affects teaching and learning in the classroom in a positive way and provides a pathway to the delivery of the best possible schooling for our children. Emerging theories of The Learning Organization, in which school-based management is an integral component, have already been shown to make inroads in the educational change process,

contributing to improvements in teaching, learning and student outcomes (Sheppard, 1995).

Provision of the necessary resources to properly train school council members will give site-based management a fair chance for success. Through professional training, those who are closest to schooling will be equipped with the knowledge of how to implement and maintain effective site-based management. Only then can the potential of school councils, as a means to bring about the changes in student achievement that society considers vital for the workforce of today and tomorrow, be truly realized.

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Lorraine Devereaux is a teacher and is Acting Vice-Principal at Holy Redeemer Elementary School, Trepassey, NF, A0A 4B0. She is also a School Council Consultant in the Province of Newfoundland and Labrador, Canada. Contact: Lorraine Devereaux

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at the above address. Telephone: (709) 438-2377, Fax: (709) 438-2245, E-mail:
ideverea@calvin.stemnet.nf.ca

**SECONDARY AND TERTIARY SCHOOL CONSTRUCTIONS
OF ENGLISH STUDIES IN ATLANTIC CANADA**

**Barrie R.C. Barrell
Faculty of Education
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A sign over a door in the Arts and Administration Building at Memorial University of Newfoundland announces the Department of English Language and Literature. There is a tacit understanding about both the nature of courses and the structure of debates that take place within the department. Literature, in any of its many contested forms, provides the backbone for departmental calendar entries; the English language, its structures and nuances, round out the department's academic parameters. Baccalaureate programs are devised based upon this traditional liberal understanding of the discipline. Until very recently in Atlantic Canada, this constructed definition of English is what high school students, parents, school officials, and teachers of English understood to be the boundaries of the discipline.

Starting in the early 1990s, a significant change began to take place in how secondary English language arts curricula were constructed and taught. Classroom teachers began to be guided by theories of language and literacy that were linked to the social sciences and to social learning in particular. University notions of English, that is as a discrete subject, no longer guided the building of Atlantic Canada's secondary school English programs. Efforts to dovetail objectives with tertiary English department requirements and regulations were severed and new links forged with computer technology, genre, and media studies. This silent coup left new and veteran secondary teachers of English scurrying to prepared materials that supported the objectives of the new curriculum.

The teaching of English as a discipline, when compared to history, mathematics, religion, and some of the sciences, is relatively new. Applebee (1974) traces the subject's traditions back about 130 years. In the United States, English (the study of literatures and language) evolved out of the 1873-74 Harvard University entrance examinations. States Applebee, students were to write a composition on one of the following works:

Shakespeare's *Tempest*, *Julius Caesar*, and *Merchant of Venice*; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*, and *Lay of the Last Minstrel*. This requirement institutionalized the study of standard authors and set in motion a process which eventually forced English to consolidate its position within the schools (p. 30).

The writing of university set entrance examinations structured the content and form of the discipline within secondary preparatory schools and imposed upon those involved in the discipline a clearly understood purpose for its continued study.

The teaching of English in Britain evolved from different roots. The genesis of English studies began in various colonies as a form of indoctrination and subjugation. Morgan (1990) documents that English in Ontario used language practices at the level of theory to set language and literature cultural policy for the province. Yeoman (1990) reports that the Department of English at the University of Nigeria is being closed because of its links to past colonial oppression. The British literary canon and the

teaching of written and spoken English worked its way back to the schools and universities of the British Isles around the middle of the 1800s. The setting of Oxbridge entrance examinations required grammar and public schools to teach a literary canon and appropriate composition skills to allow students to pass examinations and gain entrance to various tertiary institutions.

This traditional understanding of what is at the core of an English program lives on in the universities of Atlantic Canada. Regional electronic university calendars invariably describe English courses as either the study of various European, Irish, or North American literatures, or the study of composition and/or language. An analysis of the English degree requirements in the calendars of the University of New Brunswick, the University of Prince Edward Island, Acadia University, and Memorial University of Newfoundland reveals the preparation future teachers of English acquire as they work toward graduation. In general, students are required to complete between twelve (MUN) and fifteen (UNB) courses chosen from various periods in the history of the western literary canon. All four universities require a course in Shakespeare. UPEI requires a course in Old or Middle English while others require a course chosen from amongst the literature of the 15th, 16th, or 17th centuries. Two universities, UNB and MUN, require a course in English language and rhetoric. Acadia requires students to select two courses from amongst 20th century British, American, or Canadian literature. UPEI requires either an American or a Canadian literature course while UNB and MUN have no requirement in these areas. On average, half of a student's program is made up of electives. Typically, English majors have a diverse collection of courses and might have built a program that shares little with other matriculating students. Striking is the lack of a degree requirement in any Canadian or Atlantic literatures. Thus, the only course that future teachers of English can be said to have in common is a course in Shakespeare. No negative judgment is intended or leveled at this approach to the study of English language and literature. Indeed, a cursory examination of English programs in the universities of western and central Canada (Universities of British Columbia, Alberta, Saskatchewan, Western Ontario, and Brandon University) indicates the above description to be quite representative of degree requirements. What is consistent within English degrees is the structure of the literary theory and text analysis that students experience. Since the 1970s different literary theories have been added to New criticism. Structuralism, post-structuralism, Marxist, feminist, deconstructionist, and constructionist theories of text analysis are the tools English majors now use to examine the canon.

University conceptions of English and hence literacy, what Myers (1994) calls decoding/analytic literacy, is typically marked by generic concepts delivered to passive learners through textbooks or anthologies. In turn, students studied the material individually and reproduced it by demonstrating their understanding through pencil and paper tests, analytical papers, or tutorials. The century long dovetailing of university and secondary school conceptions of English studies, and associated notions of literacy, lasted until the 1980s. In this decade teachers of secondary English started to use other theories to examine texts with their students and to accept reader response and other forms for students to demonstrate the depth of their textual engagements.

This new way of teaching and learning led decoding/analytic literacy to give ground to transactional/critical forms of literacy and was spurred on by such scholars as Rosenblatt (1978), Iser (1980), Crossman (1982), and Sholes (1985). Individual learning succumbed to collaborative learning in schools, preconstructed learning outcomes gave way to student constructed meaning, the quest for the ultimate literary criticism gave ground to confirming and deconstructing personal and aesthetic readings

of texts. The 1980s also began to see the inclusion and use of a variety of nonprint texts (music, film, television, photojournalism, etc.) in the secondary English classroom. Viewing was added in numerous constituencies to the discipline's traditional secondary school strands of reading, writing, listening, and speaking.

The 1990s have seen the inclusion of representing (multimedia presentations, web pages, 3-D constructions, models, etc.) within the parameters of secondary English language arts. Representing has brought the discipline's core strands to six. More recently, a seventh strand has appeared. Information manipulation through computer connections is appearing in various revised English language arts documents (see for example the high school documents of the Western Canadian Protocol-Common Curriculum Framework and the Atlantic Provinces Education Foundation).

Thus alongside traditional liberal university English department conceptions of what it means to be literate, have been added visual, media, electronic and information literacies. Canadian secondary school students are now expected to "read" not only books, but also the world and to evaluate and respond to an ever expanding variety of texts. These texts appear in a cacophony of Englishes that are marked by variances in register, accent, subcultural style, origin, and technical nuances. Kalantzis and Cope (1997) and the New London Group coined the word 'Multiliteracies' to explain the negotiations students engage in as they navigate through interconnected community, entertainment, and working lives. While secondary students are still expected to respond to their readings in traditional ways, new curricula objectives would have them responding to texts in an infinite number of constructed multimodal forms.

The new parameters of English language arts in Atlantic Canada's secondary schools are marked by the four traditional core strands from an earlier time and three additional strands. It is important to understand that for instructional time purposes listening, speaking, reading, writing, viewing, representing, and technological information manipulation are all treated as equals in the curriculum. While the core strands of the discipline have been increased by 75%, what is to be read has greatly expanded into media and computer accessed information and texts. By including viewing and representing strands, the ways students of English are expected to demonstrate their understanding of texts has experientially increased. In this reconstruction of the discipline, various literatures are having to share space with, and surrender ground to, what the Atlantic Provinces Education Foundation (1997) documents call 'communications'. Indeed, the fictive world of literature is no longer central to senior secondary English education. The new vision challenges tacit academic conceptions of the workings of the discipline. It is a conception that has broken sharply away from the university's notions of what it means to study English by including postmodern, commercial, entertainment, technotainment, and networked discourses. This new vision relies greatly on technology to both find and create the texts used in instruction. It is a vision that will force teachers in Atlantic Canada to notice the fracturing of English as a clearly delineated subject.

Clearly, what is emerging is a new conception of English that is much broader, more inclusive of a variety of texts, and radically different from past or university conceptions of the discipline. With its goal of balancing more traditional works with more contemporary ones, including works which bring new or previously neglected voices into the classroom, and its call for alternative ways of knowing and being, a secondary curriculum emerges that is broad in both scope and vision. How university English departments adjust to the English education that secondary students have experienced remains to be seen.

Meanwhile, the difficulties of teaching traditional English programs is becoming apparent at the end of the century. Goodwyn, Adams and Clarke (1997) use the following quotation from a British teacher with eight years' experience to demonstrate both the cultural forces at play and the difficulties of teaching traditional book-based English as media and technologies impact classroom discourse:

We are moving away from a literary, book-based culture. It's a general move, shift in youth towards television, video, computer games in their own life "out of school you're fighting a society that is moving away from literature towards a leisure-based, easier culture, and the reading and literature themes look too hard" we are between the generations, sort of juggling both reading and writing alongside it. (p. 54)

The growing gap between tertiary and secondary conceptions of English is not a minor one. Peel and Hargreaves (1995) found in their interviews with experienced teachers of English in Australia, England, and the United States that many of them "believed the gulf between secondary and high education to be even greater than the gulf between primary and secondary" (p. 41). This new vision brings into question the appropriate prerequisites new teachers of English should have if they are to successfully teach the various parts of the new regional English curriculum. A minor in cultural, media, and/or computer studies could become a requisite for entry into Atlantic faculties of education.

English methods professors who are aware of changing curricula and the gradual change in secondary constructions of English may understand the work English departments are doing but they do not necessarily vision English the way their colleagues do in the Arts faculty. Dillworth and McCracken's (1997), in a survey of United States English and English education professors, state that many students arrive at college to "quickly discover major differences in outlook among their English and English education professors, differences not only about what is significant in the discipline but also about the fundamental procedures for constructing significance" (p. 14). For Atlantic Canadian students who enter consecutive degree programs it is key for them to be able to spot and understand the divergence of the two discourses and understand how new regional curriculum documents conceptualize English education.

In this decade, English language arts, probably more than any other school subject, is being buffeted by a variety of forces that are questioning received culture and linguistic forms. Some English language arts educators are beginning to ask who will be drawn to major in English and subsequently go on to become its teachers? There is a call from poets and authors to maintain the distinctiveness, the separateness of English from other disciplines; to not lose sight of the textual experiences first found with poems and in books. A widening gap exists between those who feel English is about a liberating aesthetic engagement with fictive texts, those who feel it is about ideas and patterns of literacy and reading, and those who see it incorporating the digitalized worlds of cyberspace.

Until tertiary and secondary constructions of English come more into line it is important that English methods professors and their students understand the gap between the two worlds and explain the different constructions of those worlds. Dillworth and McCracken (1997) use the following quotation from an English education student as an exemplar of the various competing ideologies an English education

student faces in trying to develop a personal philosophy toward English education and bridge the gaps between worlds:

At nine o'clock on Monday morning I hear that Shakespeare was the greatest writer of all time; at ten o'clock I laugh along with my professor about the obvious limitations of a canon of dead white men; at noon I revise my essay in accord with Professor Smith's directions; at two o'clock I listen to my methods professor tell us not to appropriate our future students' texts. On Tuesday, I visit the schools where they tell me to pay no attention to what they say at the U, since anyone not in the schools every day has no idea what's going on in the real world (p. 7).

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WHAT'S WORTH MEASURING? TEACHERS, HARD-TO-MEASURE OUTCOMES, AND ACCOUNTABILITY

Jean Brown and Bruce Sheppard
Faculty of Education
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The Globe and Mail refers to itself as "Canada's National Newspaper". National, in the sense that it is distributed across Canada and makes an attempt to cover stories from all parts of the country, it is usually described as a paper with a decidedly business/right wing, conservative viewpoint. On Saturday, June 28, 1997 it carried an editorial by William Thorsell entitled "Taking the Measure of Our Education Systems" (Saturday, June 28, 1997, D6) which vividly illustrates the pressures being applied to education today:

More than 50 per cent of the residential property-tax bill in Toronto (and many other cities) is dedicated to primary and secondary education. Canadians are among the highest per-pupil spenders in the world on schools.... Our laws generally require children to attend school until they are 16 years of age. Quite obviously we value education highly.

In the very next paragraph, Mr. Thorsell questions whether Canadians really value education. He states:

Somewhere along the way, we forsook some basic management tools in education. The simplest is this: you cannot manage any system without goals that can be measured. This doesn't mean that every goal that is important to a system can be explicitly measured, but some core goals must be if the system is to be managed at all.

Some time in the 1960s, it became fashionable -- and that is the word -- to set goals for education that were effectively beyond measurement. They had to do with self-realization, curiosity, awareness, creativity, open-mindedness, tolerance, gentleness and critical thinking.

Mr. Thorsell attacks what he calls the "corkscrew curriculum" in which all students proceed at the same rate, but not the same pace, through the system. He concluded: "The combination of hard-to-measure goals and corkscrewing (which saw the end of external, general exams) reduced the accountability for spending public money or students' time." The result, he claims, is that mastery of basic skills began to deteriorate. Parents found it hard to monitor their children's progress, and "higher proportions of education taxes went into "supporting missions" such as counselling, extracurricular activities and special interest/needs programs." In Mr. Thorsell's view, funding the education system has led to a form of "indirect taxation without meaningful accountability."

In every part of our country, and in other countries in the Western world, similar views are being expressed. Accountability and testing are indeed buzz words of the 1990s. Mr. Thorsell applauds the solutions which he identifies across Canada:

Alberta restored system-wide testing of basic measures early. British Columbia removed many powers of local school boards. New Brunswick eliminated school boards. Ontario is acting to restore measurable standards and rein in the powers of fewer school boards, while Quebec reviews its core curriculum.

Although not addressed by Mr. Thorsell, Atlantic Canada is also engaged in similar measures. In fact, comparisons of educational systems across the country, and even internationally, make one wonder where all the common ideas for reform spring from and how they are circulated so efficiently among educational bureaucracies. The Atlantic Provinces Education Foundation (APEF) is identifying core learning outcomes in mathematics, language arts, science, and social studies. An indicator program is in place to allow standardized testing based on these anticipated learning outcomes. Departments of Education are assuming responsibility for district, provincial, and national testing and comparisons. If School A is not measuring up to School B, then school councils composed of community members, parents, teachers and administrators (another creation of the 1990s) will want to know why, and the provincial departments (or ministries) of education can investigate. To perfect techniques in this area, many administrators have travelled to distant school districts to see first hand what is happening there. For example, just a few years ago, a team of educators from Newfoundland flew to Kentucky to observe their attempts at school reform through accountability and testing.

This situation should concern all teachers. For many educators, the reaction to Mr. Thorsell's comments is to ask, what is education if we ignore hard-to-measure goals such as "self-realization, curiosity, awareness, creativity, open-mindedness, tolerance, gentleness, and critical thinking"? Furthermore, are they "effectively beyond measurement" (as Mr. Thorsell states) or are there ways to measure them?

Educators may react to the challenge that such a viewpoint poses by becoming angry with those who hold views similar to Mr. Thorsell's; they may then try to ignore that viewpoint and proceed as if it does not exist, holding on to their beliefs and hoping that others will support them in what they consider valuable work. For example, a typical teacher can continue to plan and teach units, devote long hours of one-to-one assistance and help to students, assume a leadership role in school-wide professional development and engage with colleagues to master new and emerging technologies that will assist in the teaching and learning within the school. This is the path that many teachers have chosen in the past. They shudder at the very thought of becoming politically active and would not know where to begin. They would argue that they know and their students know that they work hard, that what they do is important and helpful, that they do not have the time nor the interest to do more. You could ask, what is wrong with such a response?

To ignore what Mr. Thorsell is saying will lead to changes in teaching which may be problematic for many, because although teachers see the value of the different ways they do their work, it is seldom documented. Our research (Brown & Sheppard, 1997a; Brown & Sheppard, 1997b; Sheppard & Brown, 1996) reveals that even in the most recognized schools with strong programs and qualified professional teachers, there is seldom any indication of how programs contribute to student outcomes. The problem is that much of what teachers do falls into the category of goals that Mr. Thorsell rightly identifies as "hard-to-measure".

There is, however, another choice, which is to accept the reality that in today's environment there is a need for accountability. Process goals, such as those involved in helping students learn how to learn, to become independent, life-long learners, are indeed hard to measure, but the important point is that they can be measured. It just requires a different approach to measurement. Part of the problem is that too many teachers in the past have assumed that everyone would support and believe in the need for programs and approaches they saw as important. Because certain values were important to them, many assumed that they would be important to everyone else as well. In this post-modern world, teachers need to recognize that there is no longer an overriding belief in anything. They can no longer take for granted that the goals they endorse are endorsed by the education system, or if they are, that the system will agree on how these goals can be reached. Teachers will need to be politically astute, and that begins by recognizing that there is a need for evidence to back up what is valued.

Our research reveals that schools are not defining learning outcomes well, but others outside the school are. In Canada, education is a provincial rather than a national responsibility. However, provincial departments of education are voluntarily forming themselves into regional groups such as the Atlantic Provinces Education Foundation (APEF). A similar Foundation exists for western Canada. Their mandate is to establish learning outcomes for what they have labelled as core. In addition, editorial writers and other journalists have their own criteria. All educators need to examine and understand what measurements are being used by editorial writers such as Mr. Thorsell. Most would agree with Mr. Thorsell's conclusion that in the end, a major goal for all schools is: "Instructing the next generation about how the universe works, where our civilization came from, why it values what it does and what's on the agenda next". However, those who commit themselves to a career in the classroom want far more than that – they want the "hard-to-measure" goals for all students as well.

Why have non-educators, such as Mr. Thorsell, determined a narrow range of outcomes on which schools are to be judged? Why does he (and others) seem willing to judge the reputation of schools on only those measures easy to obtain? We may not like the answers we hear, such as this example from Stoll & Fink (1995):

If there is a problem for educators and researchers, we did it to ourselves. We have never demonstrated to ourselves, let alone anyone else, that schools make a difference to pupils' learning, knowledge, skills and attitudes which will enable them to be successful citizens in the twenty-first century. If most educators are not assessment literate how can we expect our publics to understand the issues that relate to assessment?" (p.167)

Teachers would be wise to do some private soul-searching and ask themselves how comfortable they would be if asked to show the link between what they do and student outcomes. They need to ask themselves also whether their professional values are reflected in the essential learning outcomes accepted and shared by their colleagues and by the larger community. Teachers who know they are doing a good job need to ask themselves: Who else knows how well I do what I do and the importance of this function to students' learning? How can I show improvements in student achievement scores? In the current political environment, it is critical that teachers identify and articulate the learning outcomes that they want measured, and determine ways they can be measured, for "What gets measured, or assessed, gets valued. If schools do not measure what they value, what others choose to measure will be valued" (Stoll & Fink, p.167). In the research that we are doing, we were told that all teachers

need to show that their work is directly or indirectly related to students' learning outcomes. In the restructuring that is taking place, only those programs seen as contributing to the mission of the school will survive.

To bridge the gap between process or hard-to-measure goals and the need for accountability, there needs to be a greater emphasis by teachers and schools to identify what the important goals in schooling are, to develop measures for such goals, and ensure that they are collected. If teachers perform other critical functions, such as providing peer coaching and training for their colleagues and participating in school improvement initiatives, they need to show that such activities also contribute to student success. For those involved in the education of teachers at the university, there is a need to ensure that programs provide students with the ability to understand and interpret the findings of research, and as well with the knowledge and ability to engage in research themselves. A current imperative is that a research base be built that will provide the evidence that is so badly needed. To do so, the gap between the university researcher and the school practitioner must narrow.

The research program that we have developed is an action research model (Calhoun, 1994) which involves us, both members of a university faculty of education, as "critical friends" (Lieberman, 1995, p. 3) in the schools in which we work. We are actively engaged with school teams in an effort to obtain information and data which are beneficial to us and the school. We see this as a very promising way to develop and test theory and to conduct research, including how best to identify and measure the hard-to-measure goals held within the school.

One thing is clear -- teachers cannot leave the determination and measurement of school goals to administrators, other teachers, or outsiders. It is too important for that. They need to recognize their responsibility for they cannot assume that others hold the same educational values that they do. It is at the school level that teachers will need to ensure that the goals that the profession values are measured; that the contributions of teachers from various programs are identified as making a real difference to students' learning outcomes, and that these outcomes be measured. Teachers have a professional responsibility to work with colleagues in determining the learning outcomes that are valued in the school, and to be leaders in finding ways in which they can be measured.

Professionals in education, whether they work in universities or in schools, want schools that are providing the best possible learning experiences for students. However, the day is gone when anyone can rely only on his or her individual intuition as to what the best is. Neither can teachers assume that the outcomes they value will be measured by standardized provincial or national tests. The current society requires evidence and is demanding greater accountability. All groups in education are in danger of being discredited and disregarded unless they provide that evidence. Schools need to become learning organizations (Senge, 1990), where collectively the staff makes the best decisions they can for the students they serve. This will require a new type of professionalism for teachers and a commitment to continuous improvement for schools through a process of self-evaluation and learning. Increasingly parents and the community can work with schools to identify the learning outcomes that need to be valued and measured, and they can be supporters in the fight for a school system that will provide such an education.

These are difficult times in education for all those who believe in the value of programs such as music, physical education, social studies, drama, and art, and who

see the value and need for qualified teacher-librarians. Many people in our society are seeking tax reductions and are unwilling to support educational programs in the way they were in the past. Politicians are responding to these demands, and as a result, senior administrators and government bureaucrats are being given reduced budgets and asked to trim their expenses. They are being forced to make very difficult choices, and as it is in nature, it is the weakest that will not survive. For too long teachers have tried to avoid the need for public accountability. Focused on the classroom and the student, they have been reluctant to become politically sensitive and responsive to the public's movement towards increased accountability. They can avoid it no longer. If teachers do not stand up for the outcomes they value and measure them, others (such as educational bureaucrats, special interest groups within the public, government members, the business community) will hold teachers accountable for outcomes they value. Teachers need to ask themselves: is this what we want?

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WHERE ARE WE GOING ON PATHWAYS?

**Lynda Younghusband
Faculty of Education
Memorial University of Newfoundland
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Inclusion - the process of integrating students with disabilities into general education classes - has been a buzz word since the mid 1980's. This movement to integrate all students with mild to moderate or even severe mental retardation, students with learning disabilities and students with emotional or behavioral disorders into general classrooms rather than special education classes has been a hotly debated issue in our province since the introduction of the Pathways document in the mid-90's. Historically, these students, for the most part, received their education outside the regular education classroom.

Approximately 40 percent of students K-12 will require instructional support beyond what has traditionally been offered in a general classroom (Salvia & Ysseldyke, 1995). Inclusion has been strongly supported by research, professional organizations and parent advocacy groups, who hold the view that students with special needs will blend into and become a part of the general education classroom community (Mamlin, 1999). Idol (1997) lists the purposes for integrating students with disabilities into the general classroom:

- to allow students with disabilities to benefit from the general education programmes (with appropriate teaching strategies and support).
- to give students with disabilities the opportunity to interact with age-appropriate peers without disabilities.
- to let students with disabilities take part in all aspects of school life, and to better prepare students with disabilities for life within the social community.

Many general education teachers in Newfoundland, with a passion for our profession and committed to holistic student learning, do not feel ready for inclusion. It is difficult for them to carry on with traditional duties and yet free up the energy, time and good will needed for new ones, especially given the feeling that they have not had sufficient time to prepare. Many of these teachers, who feel overloaded with work to begin with, support some inclusion but feel unskilled, untrained and lacking in the expertise to work with mild-moderate (and sometimes severe) disabilities. (There is no requirement to take even one course in special education to graduate as a teacher from Memorial University). Resources to accommodate these students, who are accustomed to a special education format, are not widely available. Many teachers are skeptical about the benefits for such students, fearing that lack of training and expertise in implementing the best practices for these students will lead to frustration on both sides. In addition, they fear the "dumbing-down" of curricula. They have voiced their concerns at meetings, through the Newfoundland and Labrador Teachers' Association (NLTA) and on Teachers in Cyberspace (TIC).

Most of the research on inclusion has been focused on K-6 and very little has been written with High School students and teachers in mind. The transition of students from special education classes to general classes and, even more so, from Junior High special education classes to High School general classes demands further research. The move from Junior High to High School is difficult for many students but for those who rarely have been outside a special education setting it may be traumatic. Adolescence is a difficult time at best, a time when social pressures increase and self-esteem fluctuates. Margalit (1993) has shown that intellectually disabled children are more likely than their non-disabled peers to be deficient in social skills and knowledge. Therefore, social relationships are more difficult for them (Roberts & Zubrick, 1992) and, unable to form close friendships, they tend to feel lonely (Parker and Asher, 1993). Kobe (1994) goes further, stating that these adolescents should be considered at higher risk for developing depression.

As more students with moderate and severe disabilities are integrated into the mainstream at school it is essential that each person on staff understand the part he or she is to play if this is to be a successful venture. The concern is no longer whether this is a good plan but, rather, how a programme can be implemented that is workable and effective, ensuring success for all - from the child with a disability to one who is considered gifted. Added to concerns about inclusion are the responsibilities arising from the new Atlantic Provinces Educational Foundation curriculum standards, which place an emphasis on enhanced academic performance for all students.

Braaten and co-workers (1998) have written that this type of reform poses a problem for students with disabilities. They argue that "in general, current reform movements that stress higher, and more inflexible, academic performance requirements do not bode well for students with mild to moderate disabilities, such as learning disabilities". We are already losing at-risk students in High School because "hands-on" programmes at the lower end of the academic scale have been reduced to the degree that there is little remaining at which they can be successful.

The challenge to meet the needs of an academically diverse student population is especially great at the High School level. High School teachers work with more than 130 students daily and the time for individual students is quite limited. Despite studies which show that special needs students, educated in regular classes, perform better academically and socially than their special needs peers in non-inclusive settings (Wang & Baker, 1985-86; Baker (1994), Shumaker and Deshler (1994) conclude that "the manner in which strategies are taught to students, especially students with disabilities, can significantly affect the degree to which students actually change as learners". Further, they advocate taking great care when including students with disabilities and other at-risk students in regular class settings. They go on to say that we must ensure that:

- "Students' achievements are commensurate with average or above-average classmates, and they do not receive passing grades as gifts.
- Students do not depend on others for their success. They function independently or interdependently as members of the learning community.
- Students do not negatively affect classroom instruction.

- Students, parents and teachers are satisfied with the outcomes of the learning situation.
- Disabled students are not singled out for special treatment but are integral members of the class".

Zigmond and Thornton (1985) caution as well that disabled students (e.g. Pathways 3) included in regular classes have a high rate of failure and tend to drop out. Many students with disabilities are passive learners without the necessary skills to process information given in a traditional manner and many, while physically included in a regular classroom, may feel intellectually excluded and acutely inferior to peers. Some studies have shown that students perform better in a special needs class than in a regular class (Kaufman, 1994). The literature on educational change tells us that many factors influence the levels and patterns of improvement outcomes.

If we include students with disabilities (e.g. *Pathways 2, 3, 4*) in the regular classroom we must ensure that they will continue to achieve at a level **at least equal to or higher than** when they were in a special needs classroom. Additionally, all students, regardless of their ability, should benefit from changes made and alternate educational methods practised in their classroom. We must ask ourselves:

- What will allow this student to function to his or her greatest capability?
- Can this student participate in this lesson with the same learning outcome as all the other students?
- What supports and/or modifications are necessary for this student to participate fully?

Staub and Peck (1994), who studied the outcomes of inclusive classrooms for non-disabled students, asked the following questions:

- Will inclusion reduce the academic progress of non-disabled students?
- Will non-disabled children lose teacher time and attention?
- Will non-disabled children learn undesirable behaviors from students with disabilities?

The answer to all questions was NO. In fact, they believed there were potential benefits for the non-disabled students. Murray-Siegert (1989) found the same results when she conducted a similar study in an inclusive High School. She went on to show that non-disabled students became more tolerant of their disabled peers and more aware of their needs and after spending time with them reported more positive feelings about themselves.

Currently, students are to be given non-inclusive placements for special services only if they can be accurately classified through a psychological assessment. Unfortunately, classifying children accurately is a difficult task at best, as has been shown in many studies (Baker, Wang & Walberg, 1994). Assessment information must be examined taking into consideration the needs of the student within current environments if the desire is to develop relevant ISSP goals. Norm-referenced approaches cannot be used exclusively. Traditional assessment summaries emphasize

the weaknesses and limitations but strengths-based assessments can be used effectively to identify the needed supports and offer valuable information for the teacher. Schwartz, Staub and Peck (1995) report that we should pay close attention to all aspects of the student's life-memberships in organizations and clubs and their social relationships with non-disabled peers if we are to foster the development of competence in relevant functions. We must ask ourselves, "What, exactly, does this student need"? And then, "How can we best provide these services"?

Between 1958 and 1995, Scruggs and Mastropieri (1996) surveyed 10,560 teachers in the United States, Australia and Canada regarding their attitudes toward mainstreaming or inclusion of students with disabilities. Consistently, they found that teachers require support when teaching students with disabilities alongside their non-disabled peers. Further, they found these needs may be greater, for a variety of reasons, for High School teachers than for Elementary teachers. Supports needed were as follows:

- Time - Teachers report a need for time each day to plan for students with disabilities.
- Training - Teachers need systematic, intensive training, either as part of their certification programmes, as in-services, or as an ongoing process with consultants.
- Personnel resources - Teachers report a need for additional personnel assistance to carry out mainstreaming objectives. This could include teacher-aides and regular contact with special education teachers.
- Materials resources - Teachers need adequate curriculum materials and other classroom equipment appropriate to the needs of students with disabilities.
- Class size - Teachers report that their class size should be reduced if students with disabilities are included.

Consideration of severity of disability - Teachers are more willing to include students with mild disabilities than students with more severe disabilities, apparently because of teachers' perceived ability to carry on with their teaching mission for the entire classroom. By implication, the more severe the disabilities represented in the inclusive setting, the more the previously mentioned sources of support would be needed.

There is much to be said in favour of Pathways. But at the same time, it poses many problems, challenges and concerns. At the moment, the role of special education teacher and that of the regular classroom teacher have become confused to most teachers. The introduction of Pathways, without clear explanations of the benefits or methods of implementation, has added to this confusion. The required support models are not yet fully in place. The role of team teaching (special education teacher and classroom teacher sharing the class) which is implied, but not prescribed, in Pathways, adds further confusion. Many teachers have reservations or concerns about Pathways and believe that further support and in-service are necessary if this model is to succeed. Every teacher and student is a stakeholder. It is clear that the ultimate success of Pathways will depend on the extent of support provided by the Department of Education and School Boards throughout the province.

II

Inclusion is both a philosophy and a process. As a process, it is an on-going learning experience through which we all work together to prepare students with exceptionalities for life and work. This requires a co-operative effort between administration, regular and special educators, parents and students themselves. Our goal is to provide a classroom environment in which all children can learn together, be supportive of one another and yet remain aware of individual differences.

Stainback and Stainback (1996) ask the question "What kind of training must be provided to the regular education teachers so that s/he can meet the demands of the inclusion process, the needs of the regular education children within the classroom, and the individual needs of the children with disabilities within the classroom?" They advise us that inclusion cannot be accomplished all at once, that the first step should be the plan, not the programme. Pre-planning and staff training are critical to the success of inclusion within the general classroom.

The majority of teachers are new to Pathways (inclusion) and need as much support as, or more support than, individual students. We need to network with our colleagues, sharing methods, materials, and activities, giving advice and support in order to assist one another as well as our students. In spite of the challenges and the barriers in front of us, much can be accomplished if we support each other and if we have support and leadership from our board office and The Department of Education.

Implicit in the implementation planning for inclusion is a good resource library in every staff room. The References section below contains a number of annotated selections, reviewed by this author, which will be of great assistance to all teachers whether they are new to the profession or are experienced educators. We must insist that such a resource is provided for us as one of the beginning steps in the implementation of *Pathways*.

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WHAT ARE LEARNER-CENTERED SCHOOLS?

Jerome G. Delaney
Faculty of Education
Memorial University of Newfoundland
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At first blush, the above title may evoke a reader reaction to the effect that such a question is so basic to what education is all about that it hardly deserves a second thought. Hold that thought for a moment. We as educators would like to think that all schools are and should be learner-centered, but upon further reflection we may come to realize that schools do have some distance to go before they become truly learner-centered. This article will examine the theory and practice of the "learner-centered school" and hopefully shed some light on a movement that appears to be gaining considerable momentum in the current thrust to restructure and reform schools.

Background

According to Schrenko (1994), the concept of the learner-centered school is not new. She further explains that:

...in John Dewey's *Democracy and Education* (1916), a lab school is described as a plan for education with no discrete grades and much emphasis on "co-operative social organization". The Dewey lab school focused on the students' needs rather than on covering a well-defined scope and sequence of curriculum. Much of Dewey's philosophy is evident in the learner-centered classroom. Students become a part of the learning team, empowered to make choices and to move at their own pace. This learner-centered type of education prevailed throughout the early schools, until the onset of the industrial revolution changed America's vision of education (p. viii).

This "progressive" notion of what schooling should be was not without its critics and schools eventually embraced the industrial or factory model of education introduced to the United States by Horace Mann. In the "factory" school, all students were grouped chronologically, were taught the same material from the same textbook, and were expected to function in an obedient, non-questioning manner (Schrenko, 1994). This system was designed to prepare all students in the same way so they would be ready to work on an assembly line.

This model was indeed useful at the time. Today, however, most of the dull, routine, assembly-line work previously delegated to factory workers is now performed by computers and robots. Today's students must be able to think, make decisions, transfer knowledge, acquire new skills, and work together in teams (Schrenko, 1994).

For the past two decades the American educational system (which heavily influences our educational system in Canada) has been undergoing educational reform and restructuring. The so-called "second wave" of reform presently underway has seen a call for "second-order" (Fullan, 1991) or systemic change. Fullan suggests that this second-order change consists of "changes that affect the culture and structure of

schools, restructuring roles and reorganising responsibilities, including those of students and parents" (p. 29).

By the 1990s, the call for this "second-order" or systemic change led people to question the basic principles and practices of the traditional "factory" model of education (Schrenko, 1994). There now seemed to be a renewed interest in the learner-centered concept but, according to Alexander and Murphy (1993), it was not until the American Psychological Association (APA) produced a concise, research-based summary of the basic principles of learner-centered schooling that a concise framework for defining the nature of the learner-centered school emerged.

In 1990, the APA appointed a special Presidential Task Force on Psychology in Education whose task was twofold: (1) to determine ways in which the psychological knowledge base related to learning, motivation, and individual differences could contribute directly to improvements in the quality of student achievement and (2) to provide guidance for the design of educational systems that would best support individual student learning and achievement (McCombs & Whisler, 1997). "Taken as a whole [these principles] provide an integrated perspective on factors influencing learning for all learners. Together, they are intended to be understood as an organised knowledge base that supports a learner-centered model (McCombs & Whisler, 1997, p. 3)."

Learner-Centered Principles

The following is a list of those principles as developed by the APA (cited in McCombs & Whisler, 1997, p. 5-6):

Metacognitive and Cognitive Factors

Principle 1: *The nature of the learning process.* Learning is a natural process of pursuing personally meaningful goals, and it is active, volitional, and internally mediated; it is a process of discovering and constructing meaning from information and experience, filtered through the learner's unique perceptions, thoughts, and feelings.

Principle 2: *Goals of the learning process.* The learner seeks to create meaningful, coherent representations of knowledge regardless of the quantity and quality of data available.

Principle 3: *The construction of knowledge.* The learner links new information with existing and future-oriented knowledge in uniquely meaningful ways.

Principle 4: *Higher-order thinking.* Higher-order strategies for "thinking about thinking" – for overseeing and monitoring mental operations – facilitate creative and critical thinking and the development of expertise.

Affective Factors

Principle 5: *Motivational influences on learning.* The depth and breadth of information processed, and what and how much is learned

and remembered, are influenced by (a) self-awareness and beliefs about personal control, competence, and ability; (b) clarity and saliency of personal values, interests, goals; (c) personal expectations for success or failure; (d) affect, emotion, and general states of mind; and (e) the resulting motivation to learn.

Principle 6: *Intrinsic motivation to learn.* Individuals are naturally curious and enjoy learning, but intense negative cognitions and emotions (e.g. feeling insecure, worrying about failure, being self-conscious or shy, and fearing corporal punishment, ridicule, or stigmatizing labels) thwart this enthusiasm.

Principle 7: *Characteristics of motivation-enhancing learning tasks.* Curiosity, creativity, and higher-order thinking are stimulated by relevant, authentic learning tasks of optimal difficulty and novelty for each student.

Developmental Factors

Principle 8: *Developmental constraints and opportunities.* Individuals progress through stages of physical, intellectual, emotional, and social development that are a function of unique genetic and environmental factors.

Personal and Social Factors

Principle 9: *Social and cultural diversity.* Learning is facilitated by social interactions and communication with others in flexible, diverse (in age, culture, family background, etc.), and adaptive instructional settings.

Principle 10: *Social acceptance, self-esteem, and learning.* Learning and self-esteem are heightened when individuals are in respectful and caring relationships with others who see their potential, genuinely appreciate their unique talents, and accept them as individuals.

Individual Differences

Principle 11: *Individual differences in learning.* Although basic principles of learning, motivation, and effective instruction apply to all learners (regardless of ethnicity, race, gender, physical ability, religion, or socioeconomic status), learners have different capabilities and preferences for learning mode and strategies. These differences are a function of environment (what is learned and communicated in different cultures or other social groups) and heredity (what occurs naturally as a function of genes).

Principle 12: *Cognitive filters.* Personal beliefs, thoughts, and understandings resulting from prior learning and interpretations become the individual's basis for constructing reality and interpreting life experiences.

The phrase "learner-centered" is often equated with terms such as "child-centered" or "student-centered". However, "learner-centered" goes beyond that as Lambert and McCombs (1998) explain:

When one examines the learner-centered principles, it is clear that the concept suggests more than that. The principles apply to all of us, cradle to grave, from students in the classroom to teachers, administrators, parents, and others influenced by the process of schooling. Other people equate learner-centered with the affective side of education – quality interpersonal relationships, climates of caring, and focus on fostering students' competence and sense of well-being. Again, we think that's only part of the picture. When one looks across the domains covered in the principles – the metacognitive and cognitive, affective, personal and social, developmental, and other individual differences factors – it is clear that there is an emphasis on both the learner and learning. The central understanding that emerges from an integrated and holistic look at the principles, however, is that for educational systems to serve the needs of every learner, it is essential that every instructional decision focus on the individual learner – with an understanding of the learning process (p. 9).

From these twelve learner-centered principles has evolved the following definition of "learner-centered":

The perspective that couples a focus on individual learners (their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs) with a focus on learning (the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners). This dual focus then informs and drives educational decision making. The learner-centered perspective is a reflection of the twelve learner-centered psychological principles in the programs, practices, policies, and people that support learning for all (McCombs & Whisler, 1997, p. 9).

Theory into Practice

Transferring the theory of learner-centered schools into actual practice is the challenge faced by classroom teachers and educational administrators. Such transfer begins with practitioners having a clear understanding of the various underpinnings of the concept – the principles that form the prerequisite foundation.

From those principles we are able, according to Schrenko (1994), "[to] build an underlying belief system about how schools and teachers can best stimulate learning" (p. 4). She puts forth the following premises for our consideration:

1. All children come to school willing and able to learn.
2. All intelligence is modifiable.

Teachers enable learning by creating conditions for learning by all:

1. Using mindful approaches, learner-centered teachers mediate learning by all.
2. Learning best occurs when individuals construct their own meaning.
3. Students must learn to work in teams.
4. Teachers facilitate learning by using different pacing and by recognizing multiple pathways to learning.
5. Learning occurs best when the school supports learner-centered instruction (pp. 4-12).

Understandably, the vision suggested in the learner-centered definition, the various principles, and the premises is "admirable and theoretically sound, but idealistic" (Rallis, 1995, p. 227). She ponders the challenges involved in translating the theory and vision of a learner-centered school into actual practice:

The change requires a shifting of perspective, the adoption of a new set of assumptions about schooling. People hold beliefs and assumptions about schooling that shape their expectations and drive their judgments. These expectations often run counter to what a learner-centered school delivers; thus, harsh public judgments prevent attempts to establish alternative schooling from the start or demoralize those that have begun. Society's survival instinct seeks to maintain the status quo, supporting schools that force children into existing molds and sabotaging those that encourage individuality. Most restructuring efforts such as site-based management teams disregard the learner and learning and focus only on improving existing governance structures and organizational procedures (p. 228).

According to Rallis (1995), "becoming learner centered requires more than structural alterations: it requires changing the culture of the school" (p. 228). She further elaborates on that change:

The culture of a learner-centered school is one of a learning organization (Senge, 1990); thus everyone is a learner, adults included. The active learning of the teachers in a learner-centered school is supported and honored as well. They learn to know their children; they learn in order to develop their teaching; and they learn as a result of their interaction with students. They model the inquiry process for their students and for each other... In sum, all inhabitants of the school are students [learners]. Consequently, they become we, and everything contributes to the prevailing culture of inquiry (p. 228).

The literature contains a number of other characteristics of learner-centered schools. Schrenko (1994) offers the following:

1. Unlike the "factory" model of schooling, the learner-centered school centers on thoughtful expectations and high standards. School is defined in terms of the performance desired by the local community and the results obtained by the students.
2. The learner-centered school or classroom focuses on the success of all students. In the traditional classroom, children at six years of age are expected to know and do the same things. In a learner-centered classroom, developmentally appropriate activities are designed to help students use the thinking and learning strategies they will need to succeed both in school and in life. In a learner-centered system, standards are established, and each child is expected to achieve those standards. The time required to master skills may vary, but the standards do not.
3. Learner-centered classrooms focus on meaningful experiences. Learner-centered teachers know that a "being there" experience is the best type of teaching so they provide as many real life experiences as possible.
4. Scheduling in the learner-centered classroom also differs from the traditional classrooms. Students do not change subjects every forty or fifty minutes but rather follow flexible schedules that integrate subjects enabling depth of study as well as breadth (pp. 28-29).

In learner-centered schools McCombs and Whisler (1997) proffer that students:

1. choose their own projects;
2. work at their own individual pace;
3. show excitement about learning new things;
4. work with students of different ages, cultures, and abilities;
5. demonstrate their knowledge in unique ways;
6. are actively engaged and participating in individual and group learning activities;
7. go beyond minimal assignments (p. 65).

On the topic of instructional strategies and methods utilized in the learner-centered classroom, McCombs and Whisler (1997) suggest the following:

1. utilizing time in variable and flexible ways to match student needs;
2. including learning activities that are personally relevant to students;
3. giving students increasing responsibility for the learning process;
4. providing questions and tasks that stimulate students' thinking beyond rote memorizing;
5. helping students refine their understanding by using critical thinking skills;
6. supporting students in developing and using effective learning strategies; including peer learning and peer teaching as part of the instructional method (p. 65).

Assessment and Evaluation

Assessment and evaluation are topics that cause contentious debate among teachers and administrators. How should students be graded? What criteria should be used in grading? Does one reward knowledge, effort, good behavior, or some combination thereof? These are but a few of the multitude of questions educators are continually asking themselves. Levin and Young (1998) summarize some of the inherent difficulties in evaluating students:

School grades have important consequences for a student's future. They may determine whether a student enters an enrichment program or qualifies for a particular university or college program. Yet grades in school are not particularly predictive of success in adult life. [Research done by Walberg, 1987 suggests that] grades in university programs, for example, correlate very poorly with measures of adult and occupational success. The problems with grades have been recognized for many years. In principle it ought to be possible to provide a thoughtful and thorough analysis of students' skills and weaknesses without using any comparative measure, whether it be letters or numbers. And [according to Maeroff, 1991] important changes have been made, particularly in elementary schools, in terms of assessing students' progress using other forms of evaluation (p. 269).

Acknowledging the kinds of concerns articulated in the previous paragraphs, many schools and school districts are now experimenting with alternative ways of assessing student learning and performance in an effort to become more learner-centered. Darling-Hammond, Aness, and Falk (1995) posit that:

These concerns are also related to the increasing demands for a kind of education that encourages students to do more than memorize information and use algorithms to solve tidy problems – an education that prepares students to frame problems, find information, evaluate alternatives, create ideas and products, and invent new answers to messy dilemmas (p. 5).

These alternative kinds of assessment practices are frequently called "authentic" assessments because they engage students in "real world" tasks rather than in multiple choice exercises and evaluate them according to criteria that are important for actual performance in that field (Wiggins, 1989). These assessments take the form of observation checklists, artwork/illustrations, oral projects and observations, artifacts, oral/written reports, and portfolios (Schrenko, 1994, pp. 135-142). Development of mathematical models, literary critiques, scientific experiments, dance performances, debates, oral presentations, defences of ideas, "domain" projects which enable students to work on practices central to a discipline such as rehearsing a piece of music or writing a scene for a play are additional examples of authentic assessments (Darling-Hammond, 1997).

According to Darling-Hammond et al., (1995), "a major goal of authentic assessment is to help students develop the capacity to evaluate their own work against public standards, to revise, modify, and redirect their energies, taking initiative to assess their own progress" (p. 12). The real world of work requires individuals to continually evaluate their performances on the job and authentic assessment provides students with the opportunities to develop those self-assessment skills.

Lambert and McCombs (1998) suggest that learner-centered assessments should have 3 characteristics:

1. They should begin with a commitment to helping the learner function successfully in society by representing the content, skills, and dispositions that society values and is likely to value over the coming decade. For example, they might include the ability to solve loosely structured problems, work together in groups, and present information orally.
2. Learner-centered assessment tasks themselves function as learning events. The tasks are seen as opportunities for students to learn from one another and deepen their understanding of content.
3. Students are continuously encouraged to self-assess their progress by using publicly stated performance criteria to monitor their own work (p. 212).

Conclusion

Varying degrees of "learner-centeredness" exist in schools today. To suggest that our schools are totally lacking in "learner-centeredness" would be inaccurate and irresponsible; there are teachers and administrators, who, on a daily basis, make valiant efforts to teach from a learner-centered perspective. The message one would like to leave with the reader is that the concept warrants further investigation and study by classroom teachers, building and district administrators.

This article has given an overview of what learner-centered schools are all about – how they are defined, their underlying principles and premises, as well as various other elements of the concept. It is neither the "silver bullet" nor the panacea for the shortcomings and deficiencies in education today. Although it would be naïve and unrealistic to advocate a dramatic and wholesale change from the "factory" model of schooling to learner-centered schools, the concept and its potential to impact on the school reform movement in a positive manner merits further examination. Education in North America and indeed worldwide is at present attempting to respond to a public call for reform; learner-centered schools appear to represent one viable alternative worthy of consideration.

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Jerome G. Delaney, currently an assistant professor in the Faculty of Education at Memorial University of Newfoundland, is on leave from the principalship of St. Michael's High School, Bell Island. His e-mail address is jgdelane@stemnet.nf.ca

**PLACEMENT TESTING AND REMEDIAL MATHEMATICS
FOR POST-SECONDARY STUDENTS: PRESCRIPTION
FOR SUCCESS?**

**Chris Brown
Winter 1999**

Foreword

Issues surrounding placement of students in math courses at the post-secondary level have implications for mathematical practices of teachers and students at the secondary and post-secondary levels. Presently these matters are receiving considerable attention at Memorial University of Newfoundland with the increasing prominence of the Mathematics Skills Inventory (MSI) as a screening device for entry into first year math courses. Chris Brown's article provides an organized expository piece on the topic of placement testing and remedial mathematics. The references and additional titles in the appended bibliography provide a helpful resource to those who may wish to further examine the research in this field. The article itself represents a revision of a paper initially prepared this past semester for a graduate course: (ED6630) *Critical Issues in Mathematics Education*. It has been informative assisting Chris with these revisions in an effort to prepare the paper for publication in *Morning Watch*. Previously unpublished research of my own also appears in this issue. The research was conducted in a math help centre specifically designed to assist students who had been placed into remedial mathematics courses at a large university. Both Chris and I feel that the simultaneous publication of the two papers will enrich the potential discussion that may ensue. Comments on the papers are welcomed.

John Grant McLoughlin

Introduction

It is widely recognized that many students entering post-secondary institutions - community colleges and universities - are deficient in the mathematics background that is presumed necessary for the successful completion of post-secondary level mathematics courses. Various reasons may be proposed to explain this situation:

- Recent high school graduates enter with math grades that give a false impression of satisfactory backgrounds either because the grades tend to be inflated, or because the actual content coverage differs from the official curriculum.
- High school math courses may not include the particular content needed to prepare students for post-secondary math courses.
- Mature students who have been out of school for a number of years have lost their math skills or may never have acquired them at all. (This applies especially to entering students at community and technical colleges, but to a lesser degree, at universities as well.)

Whatever the reasons may be, a common approach to dealing with this problem is to assess all students' math skills at entry with a placement test, and then place underprepared students in a remedial math course (or series of courses) that is intended to bring the students' skills up to the necessary level. The student who successfully completes the remedial program should reasonably expect to succeed in first-year post-secondary level mathematics. By this means, post-secondary institutions hope to extend the opportunities of higher education to a larger number of people and enhance the enrolment and retention rates in mathematics.

Of course this process is not as simple or foolproof as it seems. One of the most important questions that need to be asked is: How effective is the partnership of placement tests and remedial mathematics in improving the success of underprepared students? This article will offer insight into this question by providing a brief overview of widely used placement tests in mathematics and of typical methods of their administration and use. Evidence will be presented from selected longitudinal studies that purport to show that students did benefit from placement testing and remediation. Opposing views and general criticisms of this process will also be considered. The paper concludes with the author's personal view on the use of mathematics placement testing and remedial mathematics.

Placement Tests

Tests are widely used to assess the mathematics skills of students entering the first year of studies at post-secondary institutions. For example, a survey of 1,297 such institutions in the United States found that over 90% used math assessment tests (Lederman, Ribaud, and Ryzewic, 1985). In the local context, Memorial University of Newfoundland and the College of the North Atlantic both use math assessment tests, though in different ways and degrees. Broadly speaking, placement tests take two forms: standardized scholastic tests developed by national or state/provincial bodies, and locally developed tests created for the purpose by an institution. Tests commonly used in the U.S. include:

1. Scholastic Aptitude Test - Math (SAT-M);
2. American College Testing Program (ACT);
3. Assessment of Skills for Successful Entry and Transfer (ASSET);
4. New Jersey College Basic Skills Placement Test (NJCBSPT);
5. Mathematical Association of America Placement Test Program (MAA);
6. Descriptive Tests of Mathematical Skills (DTMS).

Most of these are actually sets of tests that include one or more components on mathematics. A Canadian diagnostic/placement test is the Mathematics Skills Inventory (MSI) developed by Rudolph Zimmer at Fanshawe College in Ontario. It is in use at Memorial University of Newfoundland.

Placement tests may be administered to students in a variety of ways. They may be taken by high school students in the last month or two before graduation. They

may be given to students during the first week of university/college attendance or they may be available to take at any time during a six-month (or longer) period before a student is scheduled to start a program. Students may take the tests in a variety of settings ranging from a large hall with hundreds of others, to a small room with a few others, or a computer terminal all alone.

Of course it is the results of the placement tests, the students' scores, that are considered meaningful. Ranges of scores, referred to as cut scores, are selected by the standard test developers or the institution's math faculty to assign students to categories, and thus courses.

These categories may be loosely described as prepared, underprepared, and very underprepared (Three categories are most common, though sometimes just two are used). For a test with a maximum score of 100, say, students with 60 or more would be assigned to a college-level math course, students with scores from 50-59 would be assigned to a developmental course (elementary algebra), and the rest would be assigned to a basic math course (arithmetic only).

With placement decided, the next step in the process is the remedial mathematics program. What do these programs teach? A survey of 79 post-secondary institutions in the U.S. produced a broad categorization of 4 typical courses (McDonald, 1988). A quick look over the content briefly described there (see Table 1) shows that most mathematics from kindergarten to high school is included.

Table 1: Remedial mathematics courses: Brief overview of content

Course	N	Content
Computation/Arithmetic	15	Operations with whole numbers, decimals, and fractions. Applications, "Story" problems (Signed numbers in some)
Basic/Developmental Math	54	As above, plus signed numbers, real numbers, and basic geometry. Word problems, "real life" applications.
Beginning/Elementary Algebra	63	As above (less time on computation) plus symbols, algebraic expressions, operations.
Intermediate Algebra	23	Comparable to secondary school first-year algebra. (Sometimes high school grad. level)

Adapted from: "Developmental Mathematics Instruction: Results of a National Survey". Anita D. McDonald (1988). 79 institutions with 'exemplary' programs responded.

Most institutions offered two remedial courses: basic math and beginning algebra. McDonald also noted that the content of "Intermediate Algebra" was often included in a college-level course at many institutions, making it remedial for some but college-level for others.

The assignments resulting from placement tests may be mandatory, recommended, or just guidelines for a student to consider in their math course selection. Students may or may not have the option of appealing a placement or taking a retest at a later time with the aim of achieving a higher course placement. These variations can make it difficult to sort out the exact effects of course assignments on students' future success. In the next section, two studies which provide support for placement testing and remediation are reviewed in some detail. Course assignments for both of these situations were nominally mandatory but some flexibility in terms of appeals and retesting was allowed.

Research Supporting Placement Testing and Remedial Mathematics

A Standardized Placement Test Example

A longitudinal study of the cohort of students entering a Connecticut community-technical college in Fall 1990 covered the period from Fall 1990 to Spring 1993 (Sturtz and McCarroll, 1993). All students took the New Jersey College Basic Skills Placement Test (NJCBSPT) which included two mathematics sections - mathematical computation and elementary algebra. Students' scores resulted in recommendations for placement in one of three courses - Basic Math I, Basic Math II, or a college-level math course. Details of the cut scores and numbers of students recommended for each are presented in tables 2 and 3 which have been adapted from Sturtz, Alan J. & McCarroll, Judith A. (1993).

Table 2: Cut scores for mathematics tests in the NJCBSPT

MATHEMATICS (NJCBSPT)	
RANGES (Scaled scores)	RECOMMENDATIONS
≤ 160 in Computation	Basic Math I (Computation)
≥ 161 in Computation and ≤ 171 in Algebra	Basic Math II (Algebra)
≥ 172 in Algebra	College Math

**Table 3: Recommended course placements for New Jersey
college-entry students (1990)**

Recommended Course	N	%	Mean Score	Standard Deviation
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Basic Math I	499	71.1	151.8	5.06
Basic Math II	179	25.5	167.2	5.28
College Math	24	3.4	179.7	4.71

Placement was nominally mandatory. However, some students followed recommendations; others appealed placements and enrolled in higher courses; others still opted to take a lower than recommended course, while some did not enroll in any math course. In fact, about 29% of the students originally tested never enrolled in any math course over the six terms of the study. Most of these students had discontinued studies at the institution.

What happened to the students who did enroll? Table 4 shows that success rates in math were good for those who followed recommendations, but slightly lower for those who took a course higher than originally assigned.

Table 4: Recommendations, enrollments, and success* rates

Recommended Course	ENROLLMENT LEVEL								
	LOWER			RECOMMENDED			HIGHER		
	N	% Succ	Mean	N	% Succ	Mean	N	% Succ	Mean
Basic Math I				322	63	151.7	35	60	153.2
Basic Math II	24	92	161.4	82	78	167.2	15	67	170.6
College Math	0	n/a		19	84	179.7			

(*Success = Grade A, B, or C.)

What exactly does this mean in terms of the assignments by the placement tests? Considering the group of students recommended for Basic Math I we see that 63% of 322, or 203 were successful. But, 60% of 35, or 21 students that appealed and took Basic Math II were also successful at the higher level. Thus, it might be argued that the cut scores alone had misplaced these 21 students out of 357 in the Basic Math I group for an error rate of about 6%. A similar review of the Basic Math II group shows that 67% of 15, or 10 students were successful at a higher course. Again, based on cut scores alone, 10 out of 121 or about 8% of the students were misplaced. Would such error rates be acceptable in a mandatory assignment process?

Sturtz and McCarroll suggest another way to assess the success of the process. The underprepared students who followed recommendations were compared to those who did not in terms of persistence (mean number of terms attended) and quality point average (similar to GPA) over the six terms of the study.

Table 5: Following recommendations: Did it help?

CATEGORY (Basic Math Courses Only)	MATHEMATICS STUDENTS		
	N	Mean QPA	Mean No. of Terms
Recommended and Successful	268	2.71	4.15
Recommended and Not Successful	136	1.45	3.63
Higher Course and Successful	31	2.92	4.74
Higher Course and Not Successful	19	2.33	3.58
No Math Course	224	2.07	2.47

They conclude: "Students who were successful in their recommended basic-level courses tended to continue enrollment ... for a slightly greater number of terms (Sturtz and McCarroll, 1993, p. 17)." This conclusion really does not say much as it is probable that those who failed in the remedial math courses would be more likely to withdraw from college and would obviously have a lower mean attendance as a group. With regard to QPA, it also seems obvious that the successful groups must show the higher QPA's whether or not they followed recommendations. In fact, it is the students who challenged assignments and took higher level courses who show the highest QPA and persistence. Does this show that self-selecting a higher than recommended course is the best route to success?

Finally, the study looked at how the remedial cohort fared with college-level math. While asserting that overall the evidence supports the placement process, they note: "Data for completion of college-level math courses are inconclusive (Sturtz and McCarroll, p. 17)." Only 28% of students who enrolled in Basic Math I, and 55% of students who enrolled in Basic Math II eventually completed a college-level math course.

This study reveals a number of the difficulties in evaluating a mathematics course placement process. It is relatively straightforward to collect data on test scores, grades, and attendance; it is not so straightforward to interpret the data and determine if it is reasonable to say that the placement process is significantly beneficial to underprepared students.

An Institutionally Developed Placement Test

At Pembroke State University in North Carolina, the Mathematics Department created its own test to assess math skills and place students in remedial or first-year university math courses (Truman, 1992). Development and piloting of the process took about two years. A large part of the paper deals with how the test was constructed, and how the content, validity, reliability and other statistical aspects of the test were assessed and improved. The author then reviews the success of the placement and remediation process over the most recent three-year period.

The placement test was administered to all entering students during summer freshmen orientation. Based on scores, students were assigned to one of two remedial courses, and one of three first-year math courses. Students who felt they were misplaced could apply for a retest; only 2% of 1375 students have done so in the three-year period reported on in the paper (Truman, p. 62). To evaluate the effectiveness of following recommendations, the final grades of first-year students in the Fall term were compared with their choice of course level for three consecutive years.

Table 6: Accumulated results for Fall semesters: 1988, 1989, and 1990

STUDENT ENROLLEMNET Category (N)	FINAL GRADES					
	A	B	C	D	F	W
Below Placement Level (262)	52	78	57	42	21	12
At Placement Level (461)	58	112	136	81	53	21
Above Placement Level (52)	5	6	13	16	10	2

(adapted from Truman, 1992, p. 63).

Reviewing the figures in this table, we see that a large proportion of students - 262/775 or 34% - took courses below the placement level. As might be expected, this group shows a relatively high average grade. The 461 students who followed recommendations include 53 who failed, or 11.5%. This can be described as an 11.5% false-positive error for the placement test, i.e., the test placed that portion too high. Finally, 52 out of 775, or 6.7% took higher courses than recommended and, not surprisingly, show a low mean grade. However, 24 of these students were successful as defined in the previous study, meaning that 24/775 or 3% were placed too low by the initial test. (The reader might compare this to the 6-8% low placement error for the test in the first study.) As far as Truman is concerned the evidence from these results is clear:

After 5 years of mathematics placement testing at Pembroke, the mathematics department is convinced that this program provides an efficient, practical, and workable method of placing students in mathematics courses which give them the best chance for educational success (Truman, p. 64).

Is this conclusion reasonable? Certainly, the rate of failures is relatively low, as is the rate of dissatisfaction with placements. But, something does not seem quite right with some of the numbers. For example, if 1,375 students took the math placement test in the period described above why are there only 775 students in the table of grades? What happened to the remaining 600? And if just 2% of 1,375, or 23 students (Truman, p. 62) asked for a retest, how is it that 52 students took courses higher than placement level? Of these 52 students, 24 of them were successful. This calls to question the claim that only 3% were placed too low. The fact that 46.2% of the students who took the initiative to get placed in a higher than initially recommended course were successful suggests that the potential for inappropriate placement in this direction merits further attention. This false-negative error rate is unacceptably high. In addition, there is no follow-up data presented to indicate if successful underprepared students are enrolling in college-level math and what their success rates in those courses might be. Omission of this type of data in studies evaluating remedial math programs is unfortunately relatively common (Akst, 1986).

The papers by Sturtz and McCarroll (1993) and Truman (1992) clearly support the use of math placement testing and remediation in post-secondary institutions. They provide evidence to show that the process is beneficial to students. These papers also present, either implicitly or explicitly, indications that a score from a placement test alone does not tell the whole story. For example, though placement was nominally mandatory at both institutions, each one also provided a way for students to challenge and alter placements. Many students who had been tested never took any math courses at all. Did placement testing scare them away from math courses, confirming one more time that they can't do it? There must be other factors that affect a student's success in college-level mathematics. In the next section, criticisms of the math placement process and some views opposed to placement testing will be explored.

Opposing Views and Criticisms

The critique of the mathematics placement process may be described in terms of two broad camps - those who are fundamentally opposed to the use of tests for assigning people to particular courses or programs and those who accept the placement process but suggest it needs to be refined to include the effects of other factors beside math test scores alone. Perhaps we could call these groups Rejectors and Revisors respectively.

Rejectors' Views

In the field of assessment, placement testing is seen as a subset of selection testing. According to Glaser and Silver (1994), "Selection testing attempts to measure human abilities prior to a course of instruction so that individuals can be appropriately placed, diagnosed, certified, included or excluded." (p. 395) The last word in that quote signals the main point in some of the opposition to placement testing. Placement tests may function to exclude people from post-secondary education rather than aid access because they may be seen as just one more hurdle. Assigning people to ability groups is seen to be a kind of academic tracking, and may actually serve to reproduce or entrench inequities rather than help eliminate them (Kingan and Alfred, 1994). For example, Glaser and Silver, summarizing Oakes (1985), note: "In studies of the academic tracking of students for mathematics instruction, data regarding instructional practices suggest that students assigned to the lower tracks of many high schools tend

to receive less actual mathematics instruction, less homework, and more drill-and-practice of low-level factual knowledge and computational skill than students assigned to middle and higher tracks (p. 398)."

Another aspect of the exclusion or barrier view is the notion that remedial courses deter enrollment due to the extra time and money needed to complete a program (Morante, 1989), or that placement in remedial classes stigmatizes students with respect to their peers and may lead them to become demoralized and drop out (Kingan and Alfred, 1994). This kind of grouping may also have serious implications when visible minorities are "over-represented" in remedial classes.

Some opposition to placement testing and remediation derives from a financial argument combined with a touch of what might be called higher education snobbery. In this view, underprepared students and remedial courses just do not belong in college or university as their presence tends to lower standards. The time and money needed for testing and remediation is better spent on the students who are prepared and the resources they need (Almeida, 1986). Aligned with this view is the notion that underpreparedness is the result of poor content or instruction in high school math courses, so the problem should be fixed there (Platt, 1987).

Revisors' Criticisms

A significant amount of the criticism directed at mathematics placement testing is focused on the research which suggests that many other factors, particularly noncognitive or psychosocial factors, are important in determining a student's success in mathematics (Bridgeman and Wendler, 1991; House, 1995; Penny and White, 1998; Ting and Robinson, 1998). These factors may include: self-confidence, commitment, attendance, gender, ethnic background, age or maturity, financial circumstances, self-rating of math ability, parent's education level, motivation, teacher's attitudes, mode of instruction, and teacher's gender (Ting and Robinson, 1998). Critics propose that some of these factors should be assessed in specially designed questionnaires or interviews and used in conjunction with math test scores to make better placement decisions.

Another area of the criticism focuses on the math placement test itself. The tests may need improvements in terms of content and predictive validity, discrimination, reliability and the choice of cut scores (Morante, 1989; Truman, 1992). Within the same frame also lies the debate over using general achievement tests (such as SAT) versus content-specific basic skills placement tests. After an extensive review of assessment and placement, Jerry Weber (1986) concludes:

Content-specific placement tests in combination with other student data will yield effective assessment forming a basis for placement decisions. Performance on general achievement tests (ACT or SAT) or a subsection of one achievement test should not determine basic skills course placement (p. 28).

Similarly, Wattenbarger and McLeod (1989) note that studies conducted on Florida colleges show that "...standardized entrance examinations do not provide information of sufficient accuracy to justify placement into the mathematics curriculum based solely on the math portion of the tests (SAT and ACT were used in one study) (p. 18)." Most community colleges and a high proportion of universities do use

institutionally created content-specific tests, though about half the universities are likely to rely on SAT or ACT scores (Lederman, et al., 1985; McDonald, 1988).

Finally, the remedial courses offered to upgrade students' math skills are subject to criticism from a number of perspectives. Courses vary widely in content, duration, and mode of delivery. This may simply reflect different needs in different contexts and an effort to be flexible on behalf of students' needs. More significant is the observation that many do not use any special instructional strategies directed at the characteristics of underprepared students (Laughbaum, 1992). The faculty who teach the remedial program may be temporary, less qualified, and not well integrated into the post-secondary mathematics departments to the detriment of their students (Penny and White, 1998).

Summary and Conclusion

Clearly the problem of how best to deal with underprepared math students at the post-secondary level is as thorny and long standing as many problems in education. The combination of placement tests and remedial mathematics courses is a well-established process that many post-secondary institutions provide as a solution to this problem. But is it an effective one? The research evidence reviewed in this paper, and similar studies, indicate that it may provide a reasonable level of success for some students in some contexts. However, if placement is based solely on the results of math skills tests without considering significant noncognitive factors, research suggests that a high number of unsatisfactory placements may occur. Further there is concern that this process perpetuates social, gender and ethnic biases, and discourages enrollment. Then, how should we proceed?

It is my view that retaining all first-year students, regardless of background in the first-year math course, is not an option. The pace and level of these courses quickly frustrates and discourages underprepared students. Attempting to remediate these students in regular class time is not possible for most, and extra help in off-class hours usually suffices for only a few of those who need help. Under these circumstances, I think the only suitable option is to employ a mathematics placement test that identifies those who are underprepared, and to offer suitable remedial courses which provide the necessary mathematics upgrading. But this process should be careful, considerate and flexible. Careful - in the selection, evaluation and ongoing review of the placement test(s) itself, and in selection and training of faculty to teach remedial courses. Considerate - of the other factors in the students' situations. Flexible - in the timing and mode of delivery of both the placement test and the remedial courses. Students should have the option to take the test before the regular program begins and be able to do a retest if they wish. Remedial courses should be available in the summer and at night at a reasonable number of sites. They should be delivered in ways that reflect the nature of adult underprepared students. A process like this should have the qualities needed to make it a prescription for success.

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**THE NATURE OF STUDENT-TUTOR INTERACTIONS:
A LOOK INSIDE A MATH HELP CENTRE**

**John Grant McLoughlin
Faculty of Education
Memorial University of Newfoundland
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Why and how do students attend the math help centre and what sort of learning and teaching takes place there? This question guided the research that is to be discussed in this paper. The math help centre served as the focal point for the research. The setting is a room at a university campus in western New York. Its principal role is to serve the student population of three first year mathematics courses. These courses are designed for students who require some form of basic skills development in mathematics or, alternatively, precalculus preparation. Students in other courses are welcome to make use of the services offered. However, priority is given to students in any of the three courses.

The help centre is staffed from 10 a.m. to 4 p.m. (Monday - Friday) by tutors. The tutors include graduate students who serve as instructors for the three aforementioned courses as well as undergraduate students. The instructors are present in the math help centre two hours weekly. Most undergraduate tutors spend anywhere from three to five hours weekly in the math help centre.

Initially, the research was restricted to participant observation and informal conversations with some students and tutors. The observations allowed me to develop a sense of the help centre as an environment. Paraphrasing Taylor and Bogdan (1984), as an observer my intent was to establish open relationships with informants. "Working with informants is the hallmark of ethnographic fieldwork. It involves an ongoing relationship" (Spradley & McCurdy, 1972). The desire for such a relationship led me to visit the help centre regularly (about twice weekly for 1-2 hours on average per visit) over a six week period.

A total of 6 in-depth interviews were conducted. Five students and a tutor were interviewed. These students (Ann, Cliff, Ellen, Pam, and Shelley) all visited the math help centre 3 or 4 times weekly. The tutor, Carla, spends 10 hours weekly in the help centre. The transcripts of these interviews combine with my field notes from observations and informal conversations to provide the data for this research. It is this data that lays the foundation from which themes may develop. The spirit of the research experience is captured by the following quotation: "Our advice is to not hold too tightly to any theoretical interest, but to explore phenomena as they emerge during observations (Taylor & Bogdan, 1984)."

This spirit was exemplified by an early experience in the course of the study. While exploring the possibility of doing research at the help centre, I engaged in conversations with some tutors and the coordinator of the centre. It was suggested by them that a core group of students visited at regular hours because they had developed bonds with specific tutors. The tutors adhere to a weekly schedule that remains constant throughout the semester, thus making it feasible for such routines to establish themselves. In fact, I expected to be observing such relationships.

However, this expectation was contradicted by my early experiences in the context of the study. It appears that students have preferences but it is not so common for strictly one-to-one relationships to develop. Quoting Heidi, a tutor at the help centre:

There are some people I may see more of because they drop in when I'm here but it's not specifically to see me.

The matching seems to be more random than I had initially anticipated. The following excerpt from my field notes echoes this sentiment. The conversation was between a student named Bob (B) and me (J):

J: Do you use the Math Place much?

B: Quite a bit.

J: Do you work with a specific tutor?

B: No, whoever is here but some are better.

This message was reiterated throughout the course of the study. The idea of random matching is expanded upon further along in the paper.

Let us return to the umbrella question: "Why and how do students attend a math help centre and what sort of learning and teaching takes place there?" Themes have been extracted from the data in an effort to address this question.

Three themes are discussed in this paper. The first of these concerns the random matching of students and tutors. The second deals with the routine nature of attendance. It is to be argued that these two themes are overshadowed by a notion of convenience. By this, I mean that what is convenient to the student takes precedence over their desires to work with particular tutors or to be present at specific times.

The crux of the paper rests with the third theme: the help centre as a crutch. We shall examine this theme in greater detail than the others. Data will be presented that suggests that students become dependent upon the help centre as a means of coping with mathematics.

Let us begin to address the research question through the medium of the data. The idea of random matching provides a starting point for our discussion. The following conversation with Pam, a student, suggests that preferences are tempered by convenience. That is, the timing of the visit to the math help centre takes precedence over the desire to work with particular tutors:

J: Do you find yourself drawn to particular tutors or particular people that you try to work with when you are there?

P: Yes. I work better with some than others.

J: Does that in any way affect the timing - the times that you come to the help centre?

P: Oh that I come at certain times.

J: Knowing that certain people will be there.

P: Yeah I mean I come when it's good for me but you know yeah I like to look for certain people.

J: So you wouldn't say that it influences the time. It's more that when you're there.

P: Yeah (as I speak).

J: You sort of will look for certain people.

P: Yeah but I realize that certain people I work better with but it's just basically the one-on-one. It could be anyone.

A similar story is narrated by Ellen:

J: Do you find yourself bonding with any particular tutors?

E: Yeah - a couple of them that I know that they just help me more than the others do.

J: In what way?

E: Well two of them - their explanations, just the way they explain the problem to me - just it comes out a lot better. It almost seems like they know math a little bit more than the other ones, in my opinion. I don't really know if they do or not, but.

J: So, now with these tutors has the bond developed a bit randomly also?

E: Probably, yeah. I think so. It's just something that I notice just in that I mean I don't think it's a mutual one. You know what I mean. I'll notice that I'll be looking for a specific one and I'll wait for her if she is with someone else versus asking someone who I don't think really explains it as well.

J: Would you say that you attend the help centre at certain times because these people are there?

E: No, only when it's convenient for me. It just so happens that they're usually there - like I know one isn't there on Monday, Wednesday and Friday when I'm there but then two times I've been there on Tuesday she's been there.

The voices of students indicated that they indeed exhibited preferences. However, these preferences were secondary to their desire to be present in the help centre at times which were convenient to them. The following excerpts from interviews with two students, Shelley and Cliff, lend further support to this idea:

Excerpt 1

J: Have you been developing a bond with particular tutors?

S: Going to certain ones?

J: Uh-huh.

S: Yeah, I guess so. I think that some do explain things better. They just are better teachers. People get things across easier than other people do. Yeah there is a difference but I don't say get away if they come up or scram if I don't like the way they explain something.

J: You don't fix your schedule based upon who will be there.

S: No.

J: You work with whoever is there.

S: (laughing) I'm not that organized to fix my schedule like that.

Excerpt 2

J: Have you found that in going to the help centre that you have developed any sort of special bonds with particular tutors?

C: Yeah. Sometimes you know you find certain tutors can explain pretty good and certain tutors can relate to you better than other ones, you know, which is common.

J: How do you attend the help centre? Do you attend pretty randomly or do you tend to have a routine that you follow?

C: Mainly I'd say in between routine and random. Usually I come whenever like after class, like after my math class, or early in the morning. Like if I have an hour break I'll come in between. Or sometimes I'll just come if I get the chance to come.

J: So when you come to the help centre it's not really determined then by who the tutor is - or do you find yourself coming because so and so will be there?

C: No, I just come because I have a break or if I am available to come but I'm under no obligations. Or if I really just need to learn a problem, I'll come. So it depends on the person. [OC: Cliff meant that the timing of the visit would determine the person with whom he'd work.]

Recall that one element of the research question concerned itself with "how" students attend the math help centre. That is, do students attend in some random manner or do they integrate regular visits into their schedules in some form of routine? Again, the bells of convenience rang loud and clear through the data. The convenience that affected the nature of student-tutor relationships also exhibited itself through the students' descriptions of routine visiting patterns.

In the preceding conversation with Cliff, he described his somewhat routine attendance. In doing so, he clearly stated "I'm under no obligations." The emphasis was on convenience. Consider the following excerpts from conversations with two other students, Ellen and Shelley respectively:

Excerpt 1

J: How do you attend the help centre? By that I mean do you make it part of a routine for you or is it some place that you just go to randomly?

E: It's a routine according to my time schedule. I commute so I don't want to come up here unless I absolutely have to. So when I have free time usually 11-12 or whatever Mondays, Wednesdays, and Fridays. That's usually when I come. Only once in awhile if I'm really having trouble or if we're having a quiz or a test coming up, then I'll come in specially.

Excerpt 2

J: How do you attend the help centre? By that I mean do you attend it in a sort of routine as part of your schedule or is it pretty random?

S: I'd say it's more routine now. Well I don't have a set schedule. I'm trying to do that but I can't say I do. It's just try to get in a couple of days a week. Probably I've been in more now than I ever have because it gets harder and harder.

Another student, Ann, explained that she attended the help centre in a routine manner:

J: How often do you tend to use the help centre?

A: Every day or sometimes I'll skip a day if I really understand the assignment well.

J: Do you use it at a particular time each day?

A: Usually at the end of the day when my classes are over. I'll spend maybe a half hour to an hour there.

As a tutor, Carla observed the preferences of students. She describes her observations:

J: Is there generally consistent use of the help centre Monday to Friday?

C: It seems like Mondays, Wednesdays, and Fridays are more busy.

J: Is that do you think because they have math on those days?

C: Yeah. It's all to do with their schedules.

My own observations did not pick up on the strong bias towards routine that has been expressed through the comments. Although the observation times varied somewhat, I did not tend to see the same people each week on a Monday morning between 10:30 and 11:30 or on a Wednesday afternoon between 2 and 3 o'clock, for example. I was usually present at those times during the course of the study. In fact, four students failed to show up for interviews at agreed upon times. (One of these interviews was conducted when we met another day at the help centre). These students selected times at which they would meet me in the help centre. Quoting one student:

Let's meet at the help centre because then if I forget about the interview, I'll be there anyhow. I'm usually there at that time.

Why were these people unreliable? I can only conjecture that they planned to be there but something else came up that was more important to them.

A self-centredness expressed itself through convenient selection. It is like having a routine but...or wanting to work with a particular tutor but... The help centre certainly played an important role in the day to day academic life of many students. Some spent as many hours in the centre as they did in class (three and a half hours weekly). The question "What brings you to the help centre?" produced responses such as:

Shelley: Well I need extra help. It's hard to do it on my own and I think it's just easier when you know you have somebody there to work with. It sort of disciplines. For myself it's hard for me to just do it at home and it's better if I come into a separate place - I don't know how to explain it but a place where it's quiet and everyone is doing the same thing more or less and obviously if I have a question, I can have it answered. I can't answer my own question at home.

Ellen: Basically to help me with my homework because there is no point in me sitting at home you know wasting time for like 2 or 3 hours or whatever when there's people there who are qualified to help me work through the problems.

Jeanette: I don't get stuck as much.

The comments of Shelley and Ellen reflect a dependency of sorts. In reviewing my field notes, I came across an informal conversation between Carla and myself. This took place at the outset of the study. The following few lines are quite telling:

C: People who come by regularly tend to do less work.

J: Do they become dependent on you?

C: Yes. I'm interested to see what you find.

Could it be that students utilize the math help centre as a crutch? Consider the following scenario. Two students, Patsy and Lloyd, are both visiting the help centre for the first time. There is a copy of a take home test on the bulletin board. An attached note informs tutors that they may assist students with the test. A conversation transpired among the three of us:

J: Why did you come to the help centre today?

P: We had a take home test. I have some questions. I want to get the correct answers but I also want to understand how to do them. They will be tested again in the final.

J: Is that why you're here, Lloyd?

L: Yes. The take home test.

P: I usually go to my teacher for help. But I didn't think it was fair to ask her lots of questions about the take home test.

Philip regularly visited the help centre. As he was preparing to leave one morning, he shared these comments:

J: You use the help centre a lot.

P: Me and math don't get along. I work better here.

J: Do you come here as a form of discipline - so that you'll work more effectively?

P: No. I can't do the math on my own. I can do it here but when tests come, I can't do it.

My final interview was with Carla. At the time of the interview, I had no recollection of her earlier comment about regular students not working as hard. However, the issue of dependency surfaced. She identified students' need for confirmation as a reason for coming to the help centre. The issue of self esteem was raised:

J: What's your perspective on the students that use the help centre in terms of their backgrounds or what's bringing them here?

C: Well it seems like lots of different people come in here but a lot of the people who come in regularly have lots of trouble with math - like it really scares the heck out of them. They are the ones who show up all of the time and they are the ones that don't have so much problems with the math. Just their self esteem I think. They just need to be told, yeah you're doing it right. That's what I think.

J: How would you describe the learning that takes place in the help centre?

C: Learning to trust themselves. I mean there's personal things like trusting you're going to get the right answer. Or that when the answer in the back of the book is wrong often, to be able to trust yourself that you did it right...

Further along in the interview...

J: How many students would you say, in the afternoons, that you see, come in here 3 or 4 days a week?

C: I'd say about 12 that come in a lot. I'd say half of them don't really need to be in here. I'm glad they are but it's not for math. It's just for getting their confidence up.

J: Yeah. If you were able to change something about the set up here, in terms of the way students interact with tutors, is there something that you'd like to change/see changed?

C: I'd like to see more, as I was talking about, more interaction of the students instead of just talking to them. I would like them to get more involved in the process of what they're doing. That's hard because it would be so easy for us to sit down and just do one of these problems and say here's the answer but then it does absolutely nothing for them. So I'd like to see more of that, I think. But some of it is going on so I don't know what I would change exactly.

Carla's depiction of students as passive learners seems to be reasonable. Ann used the phrase "they'll show you how to do it" in an interview. When asked to explain what she meant, Ann replied:

They'll actually sit down with a piece of paper and look at the problem you're doing and tell you exactly what you're doing wrong for each individual problem which the teacher obviously doesn't have time to do in a classroom situation.

One day I found myself observing a student, Barbara, and a tutor, Marsha, who happened to also be Barbara's instructor. Barbara seemed confused. The following dialogue ensued:

M: If you believe me that this is standard form, you would erase everything you wrote.

B: (no response)

M: Erase everything on the page. [OC: Barbara erases the work and Marsha proceeds to instruct her on how to do the question.]

B: I see now.

M: Is that completely factored?

B: Yes.

M: Set it equal to 0. Is it fully factored?

B: Yes.

M: No, it isn't. [OC: Barbara smirks and completes the factoring.]

M: Are you trying to do things too fast. People that take more time and write neatly tend to make less errors.

It seemed like the help centre offered a reliable source of support to these students. However, its real function may be to act as a coping mechanism - a crutch on which one could rest. With respect to tutors, Ellen had this to say:

...you know they're not the replacement of a teacher over there but I mean it's a lot better than struggling by myself.

When Ellen was invited to add any final comments at the conclusion of her interview, this is what she said about the help centre:

They've been doing their own surveys I guess about having it continue and I think it definitely should. It definitely has helped me because there have been some homeworks (sic) that I mean I've had no clue as to what to do. Then I'll go in and they'll help me through it and then I'll see how it's done and then I can do it myself and then you know it's done.

Carla spoke about the learning objectives of students who used the help centre:

C: Other people they seem like they want it as a crutch. There are a lot of people who do their homework in here. They want to be able to have it checked in case they come up with problems. I'd say most of them are that kind. They have a difficult subject to get through and they just want someone here.

J: Do many of the students come in here with the intent of saying "Look at I don't understand a topic (e.g., inequalities). Can you help me with inequalities?" or is the help they want generally geared to specific question?

C: Most want help with a question in the book but sometimes it will turn out that they actually do want help with a subject but they'll never come out and say it - hardly ever.

J: So that you're saying as the tutor you would pick up that they're looking for help beyond that question.

C: Right.

Here we have evidence that places the responsibility on the tutor to root out the question that the student may really want to ask. The student is playing a passive role in his/her own learning process. The metaphor of the passive student leaning on a crutch seems to categorize much of the learning that is taking place in the help centre.

Conclusions

Initially I set out to shed insight on the following question: "Why and how do students attend the math help centre and what sort of learning takes place there?" In

developing the question, it was the learning and teaching aspects which interested me most. However, this paper may not reflect that. Why?

Insight into the nature of learning and teaching has been gained through the discussion of each of the themes; however, the paper has taken a different flavour the one I might have anticipated before delving into the data. The dependent nature of the student population raises concerns about mathematics education. My experiences as a mathematics educator have led me to believe that the teaching of mathematics as a product oriented subject leads to increased levels of dependency. In contrast, teaching which places greater emphasis on process provides students with greater potential to adapt their knowledge. This conceptual basis reduces the dependency upon others for ideas and insight.

What are the implications for the help centre? If dependency upon the centre is perceived to be undesirable, then tutors and instructors may consider shifting the emphasis of teaching and testing from product towards process. I have seen various examples of tests. In my opinion, these tests have been extremely product oriented. The name of the game appears to be getting the answer through the use of algorithmic procedures. If this is the gist of the game, then students have seemingly learned a strategy that allows them to work effectively within the rules.

While chatting with Cliff about the nature of questions and learning in the help centre, he provided further insight into the role of the help centre in his own academic pursuits. His assessment of the situation indicates that his personal strategy is in place:

...O.K. when I'm going for a test or a test is coming around, and I realize a certain section I was weak in, 'cause a lot of times you try 'cause we get a lot of homework and it's like you got to keep up with the homework trying the homework you get, you know. I tend to worry more about the homework and the grade. It's like I have to finish my homework. But when it comes test time and she, the teacher, kind of slows down on the homework you know you have to think about what subject, you know what chapter you were weak on and then you go back and tell them "Could you teach, you know help me with this chapter all over because I think a lot of things I didn't understand but I had to go by it to keep up you know?"...

It is not my desire, nor is it my place, to judge the math help centre. Though I must confess that it disappoints me to see more students who perceive mathematics as a discipline defined by right and wrong answers. The need to be right brings out a body of students who rely heavily upon the help centre.

I wonder if the instructors would be open to placing greater emphasis on process in their teaching? Or are they people who excelled in the same game? Are mathematics teachers open to exposing their weaknesses? Excellent teaching of mathematics requires a strong conceptual basis. Outstanding performance on product oriented tests commonly does not demand such understanding. The dependency level of the students suggests to me that they have not been encouraged to develop a conceptual knowledge in their mathematical experiences at university or other levels of education.

I would like to close with a challenge to take risks and experiment with a process oriented emphasis. When that "I can't do this" becomes "Wow! I got it!", students feel proud of their accomplishment. That is how self confidence can grow!

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MISCELLANEOUS

**"OVERSTANDING":
UNDERSTANDING "UNDERSTANDING" IN THE CLASSROOM**

**Gary H. Jeffery
Faculty of Education
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Evidence is good that students often get through many years of formal education without acquiring a sufficiently deep understanding of some of the fundamental concepts they have studied; they are not able to apply those concepts in new contexts. Our ability to design educational policies and procedures that will ensure understanding is constrained by our limited knowledge of what it means to understand . . . The concept of understanding is a fundamental one for education . . . it deserves more attention than it has received. (Nickerson, 1985, p. 235)

Educators virtually always have "understanding" as a basic goal of their teaching. In spite of the clarity of the goal, ways to help our students realize this end are elusive (Nickerson, 1985). While understanding can be a product, as suggested above, it is also a "process of becoming aware of the relationship between things and their meaning" (Evans, 1978, p. 390). As a learning process it is considered to involve "comprehending" or "grasping", processes by which persons come to "know" about their world and themselves. Nickerson (1985), discussing the fuzziness of our notion of understanding, points out that it involves both our ability to represent the world and our representations. These representations can take many forms including models and analogies. He also points out that our understanding, which is dynamic and ever changing, is never complete and further that it is based upon and grows with our ever increasing knowledge. "Knowing," from a philosopher's perspective is to being able to make "claims that . . . are ultimately defensible" (Ackermann, 1965, p. 2). This paper proposes that notions of understanding should also deal with how facts and pieces of information fit or can be fit together, in some instances, in novel or new ways.

Learning has been conceptualized by Marton, Dall'Alba and Beaty (Entwistle & Entwistle, 1992) as involving deep and surface elements. The surface elements involve processes aimed at the "reproduction" of facts and information. Deep elements involve "transformation" processes, one of which is understanding. These authors feel that deep learning "involves an intention to develop personal understanding of the subject matter presented" (p. 1).

Except for the ideas like those of Marton et al., the above notions of understanding, and the learning processes that lead to understanding, are limiting. They suggest that a learner, when gaining an understanding, somehow learns that which has already been understood or fit together by others. The notion of "transformation" potentially allows for the learner to be an active builder and for the learner's and society's amassed knowledge, theories, explanations, etc. to grow. As educators, we should be regarding understanding as a form of learning which is different from, and better than, simply "knowing" or "comprehending". We should view "understanding" as more than just "grasping" what someone else has already figured out or created.

In education, understanding can be viewed as a process by which the student creates a personal meaning or representation of what is being experienced. When it comes to content taught in school (and information gained elsewhere) the understanding the students create may be the same as the teacher's. Here, learners may grasp and comprehend existing structured information as it was presented. Alternatively, learners may personally create mental structures (understanding) possibly different from or even "deeper" than the teacher's.

The gaining of understanding can be viewed as a process very much akin to that of theory building, an act that involves seeking labels and ways of organizing experiences as well as ways of explaining and predicting (Thomas, 1992). Theory building according to Dance and Larson (1976) "is a very basic form of human activity" (p. 4).

In education, where our task is to "empower" and "enable" children to do things and not simply to have them amass information (LeFrancois, 1991), a distinction between "comprehending" and "understanding" is important. If one accepts John Dewey's (1910) notion that a well defined problem is halfway to being solved, students should be taken at least halfway to understanding and hopefully should be in a context in which they can go even further. Teachers should emphasize those bits of information which are key to students developing an understanding. More importantly, these key pieces should be presented in ways that allow students to discover known and perhaps new relationships between these bits. Rather than just giving students information they can comprehend, teachers should expose students to information they can understand.

While information comes in many more forms than can be dealt with here, we can look at two of the common kinds of content that teachers ask their students to learn and ultimately understand. One type of content takes form of discrete facts or what has been called "declarative knowledge" (Farnham-Diggory, 1992; Lesgold, 1988). Students learning this material, in a sense, "apprehend" or "grab" hold of what is offered. The other type involves organized information or knowledge. This second type, like declarative knowledge, can be both grasped and also "comprehended". This material is somewhat different as it is more integrated or structured and perhaps, though not necessarily, more complex. It includes content such as: concepts, definitions, tables, formula, plot summaries and even theories. What is being learned includes both facts and a structure which offers an organization to those facts. In a sense this content might be considered as being "pre-understood". Others, including the teacher, usually understand the content before passing it along. Ausubel's idea of content that could be learned through "meaningful receptive learning" (Ausubel, Novak and Hanesian, 1978) or content that Farnham-Diggory (1992) would label "conceptual knowledge" would fit this category. When "already organized" knowledge is learned, the learning resembles "understanding" as this content deals with both the discrete facts and the relationships between these bits and pieces. In these instances we may be discussing "understanding" but, more often, are discussing what might better be labelled as "comprehension", something very similar to "understanding" but not exactly the same.

As teachers we must describe (in test results and on report cards) the progress being made by our students. Often based on Bloom's taxonomy (Bloom, Englehart, Furst, Hill & Krathwohl, 1956), we ask for simple factual answers and definitions of terms (knowledge). We may ask slightly higher level questions which require students to describe (comprehension) and use (application) parts of these offered "pre-organized" chunks of information. Such testing will not necessarily reflect "understanding", especially if the personal understanding students have created does not match well the

organization or structure offered by the teacher. When we try to see if students "know" facts or comprehend "pre-understood" knowledge, we may simply be testing detailed rote learned or memorized content. This content can be given back to us in such a way that it can appear to be understood (Entwistle and Entwistle, 1992; Nickerson, 1985). Situations can exist where learners, maybe by frequent repetition or rehearsal, have overlearned organized content and hence are able to give it back, perhaps in varied forms (which suggest understanding). While we can test comprehension, we are less able to test personal understanding.

When we look more closely at the various types of learning that we are fostering through our teaching we can readily identify classroom situations where the content we are offering is very new and very unfamiliar to our students. Here we have a potentially quite difficult teaching task. We may seek (i.e. in situations where all the content is unfamiliar or, as with a phone number, only appropriately memorized) to have our students rote learn what is deemed important through repetition or drill and practice. Rote learning, while appropriate in a few specific instances, is very time consuming and, of course, can result in the learner not having useful or what was previously referred to as "enabling" knowledge (Lefrancois, 1991). Often, students can only recite answers. In another situation, confronted with teaching the same content, we may seek to have our students form associations between the "new facts". Here, the content learned is not linked to any existing or known information. What might be considered as relatively discrete chunks of associated facts are learned. Mnemonic devices may come into play here. An "imaging" strategy (like learning the items on a grocery list by creating a single mental picture including all the items on that list), for example, accomplishes this. Such chunks, while containing linked facts, are not anchored into larger association nets or concepts. Associated (chunked) content is more economical (in terms of how much is learned per unit of time) than rote learning (Solso, 1988; Good and Brophy, 1990).

A third type of learning exists when students, usually with the help of a teacher, learn new content by experiencing it along with other, already familiar, perhaps previously rote or associatively learned, information. To accomplish this, teachers might ask their classes to recall previous lessons or experiences outside of the classroom and then present the new content contiguous with the known and recalled content. New facts, besides their being potentially linked with each other, are associated with "old" or already learned facts. Learners are elaborating on what is already known (Benjafield, 1992). These "teacher offered" and "student made" links very much help later recall or remembering of the information. When there is a web or network of information (i.e. associated facts), there are many paths to finding a given fact in our memories and therefore many points to begin searching when we want or need to recall (Novak & Gowin, 1984).

One might characterize the three types of learning discussed, so far, as existing in two dimensional space. New facts can be learned in isolation (often by rote), by becoming connected with each other (simple association) or by being connected with other previously known facts (elaboration). What is added by the learner is only the links or associations. In the second and third cases the links formed are considered to be two dimensional in that no new information is created, only the links are added. In all cases, the information simply rests "on a plane". Very limited comprehension and probably no understanding are considered to be occurring in these situations. No three-dimensional ("higher" or "deeper" level) structures are built.

To this point, the kinds of teaching (and the assumed types of learning) often seen in classrooms have been portrayed. What is described as taking place is indeed

learning but not necessarily understanding as the term is being discussed. While we can do many things to help students learn facts and knowledge (i.e. repeat information until it is overlearned, present it in sets or present it with recalled facts), we may not be adequately fostering "understanding".

Many thinkers, including Piaget and Bruner, have told us that when students understand it is because of what they, themselves, do (Good and Brophy, 1990). Learners create, often with our considerable help and support, their own understanding. Experts on studying similarly state, for different reasons, that active learning is better than passive learning (Good & Brophy, 1990; Farnham-Diggory, 1992). Interestingly, the products of active learning (namely insights or understandings) have been described as very positive, "aha" experiences (Wallas, 1921). Active, high level, learners create a set of superordinate links which hold the discrete or associated facts together. These links are not just from point to point (as with associations). Instead, the links represent something, in a sense, added or created as an addition to the facts. As suggested above, understanding thus can be viewed as a three-dimensional, association as a two-dimensional.

An analogy can be offered to help us better appreciate (comprehend) information that is understood. Consider "understood" facts as first being selected from among other bits and pieces of experience based on their having what learners (perhaps with the teacher's help) notice as being shared attributes, similarities or patterns of some type (Dance and Larson, 1976). These facts, or more accurately, some simpler versions or models of the initial facts, perhaps, as a group, are "elevated" and placed together on what might be considered as a specially created "table" or "platform". (Appreciate that some of these separate facts are already associated or "linked together" and that any existing links are not broken by these acts of selection and elevation.) The selected information "on the platform", in a sense, has had some structure stood under it. This already associated (learned) content is now transformed (by having something added to it) and placed at a higher level by the active learner. Obviously what is being described is akin to the creation of concrete concepts.

A more complex and interrelated situation can be envisioned in which there are "tables" of transformed information standing on other "tables". Here we have an instance of more complex "under standing". A different analogy comes to mind when considering this more complex understanding, this one of a single circus acrobat, perhaps riding on a bicycle. He/she is holding two or three others, each of whom may be carrying one or more other acrobats. This image is something like an inverted pyramid. While this image pushes still "higher" the notion of understanding, it does pose a conceptual problem. The image of a tottering pile of tables or a heavily laden bicycle is too "unsteady". The slightly more conventional notion of a normal pyramid with the facts at its base and the structures, created by the person who understands, built upon this base is preferred. The greater the understanding (and hence the integration of the knowledge), the higher the structure. Educators and researchers refer to, "higher levels learning" to describe situations being referred to by these analogies (Good and Brophy, 1990).

Our every day language, reflecting the creativity and wisdom of our predecessors, utilizes the word "understand" to describe what it is that the learner, seeking some form of higher or deeper learning, does. Learning in the broadest sense refers to facts being stored in our memories. Not understood facts are learned at a low level. Such "barely" learned facts are memorized, usually by rote (repetition). If they are "slightly better" learned, they are linked or interconnected (associated) with each other.

When new information is "moderately better" learned it is associated with previously known facts (elaboration). If the new information is "well" learned, it is learned at a higher level. Moderately high level learning might involve information that is comprehended or linked to an informational structure previously or concurrently internalized by the learner. With understanding, much higher level learning occurs. Here the learner creates a structure which supports the information by "standing under" it. "Slightly" and "moderately" learned facts are "associated" or held together at a low level - in other words what takes place is described as low level learning (Craik & Lockhart, 1972).

Students, when they create their own higher level structures for linking information, are building the linking and conceptual structures that "stand under" that information. Because of the conceptual limits of the label "understanding" and the concrete analogy it conjures up, it might be better to suggest that students be seen as building an "overstanding" for the facts they have learned. Information that is integrated and structured by the learner is "over stood".

Many of the ideas being discussed have their origins in explanations and the concrete examples tested by the author on his pre-service and graduate education students. To help them understand differences between the various levels of learning they are encouraged to differentiate between contiguous associations occurring when one experiences information (from a book, lesson, or recollection) and the links that come about when one creates a concept or an understanding. Two dimensional, contiguously made links are well depicted by the label "associations". We lack a suitable label to describe the links between the specific facts and the superordinate ideas, the higher order links, we create to represent these facts. The label suggested for these links is "props". This label reflects the idea of structure being added to support or "prop" up something. The label "prop" also has links to the idea of a "proposal" or a "proposition". These terms identify a future (proposed) relationship or offer a suggestion about what might occur. In the cognitive literature, Solso (1988) suggests a proposition is a small meaningful structure which represents knowledge. Like an object on a theatrical stage, these props are not necessarily "real", they are a part of an idea. All these aspects of the term "prop" are compatible with the concept of the creative acts carried out by a student seeking to understand. The notion is also compatible with the position offered by Nickerson (1985) who pointed out that understanding is never complete. Understanding, like any theory, is continuously being tested, revised, restructured and sometimes even replaced with a better creation or version.

Students, who state they understand ("overstand") course materials, express confidence and have a feeling of "coherence and connectedness". They say that having an understanding has "provided them with flexibility in adapting and applying ideas and information effectively" (Entwistle & Entwistle, 1992, p. 8). Perhaps they are confident that their ideas are defensible!

Hopefully, we as teachers are closer to our goal of fostering understanding by having actively considered the notion of "overstanding". If we regard this small essay as an exercise, we will note that, along with adding additional meaning (associations and elaborations) to the term "understand", we may comprehend this complex notion better and even be more able to explain the concept and to foster the process in our students. We may even have added onto (i.e. better understood) our own structured idea of how we understand in general and how we understand "understanding" in particular. We, hopefully, are building a personal structure (an understanding or "overstanding") to organize the many current and past bits of information we have

learned about how people learn. We may better comprehend other people's understanding of the nature of learning and of the nature of understanding and use this learning to rebuild, for our selves, the "pre-understood" structures offered us. In this latter case (when we rebuild) we may create an understanding matching that of our teachers. It is even possible that we may come to develop our own, perhaps unique, ideas about the structure of learning and understanding. Because of this exercise, we, hopefully, will be better convinced about the need to offer information that can be integrated (i.e. associated, comprehended and understood) and perhaps we will also be in a better position to allow our students the time to build these structures and the opportunity to test them personally by writing about them and by discussing and trying them out on relevant problems. Hopefully we will all appreciate better (by seeing ourselves as examples of "structure builders") that our students can do the same thing we are doing if encouraged and allowed.

Any personal and truly relevant structure is more easily built by our students if we, as teachers, support the building process. If we simply expect students to get to learn previously built structures, too often the students will find these structures do not fit well with their knowledge. Unfortunately, information that is not really integrated (understood) is not easily retrieved and used later, in an "enabling" way. When we do not understand information, it is not ours, we have built no part of it. We do not truly "own" the information.

As teachers, by presenting ourselves as models always trying to build structures "over" the facts we encounter, we are encouraging students to do similarly (Bandura, 1977). We thereby support their efforts to learn in more effective ways. While we must continue to support some "fact learning", we must also offer the opportunity and time needed to encourage the building of understanding. Now, and more so in the future, skills and a desire to build solid "overstandings" will be more important than the mere possession of "bricks".

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TRAVELLING WITH TERRY

**Terry Piper, Dean
Faculty of Education
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Since September, I have been travelling to school districts throughout Newfoundland and Labrador, visiting superintendents, assistant superintendents, program coordinators, principals, teachers - in short, anyone who was willing to talk to me about education in the Province. I undertook these visits, not to build up air miles - Air Labrador doesn't have a frequent-flyer plan that I'm aware of - but to put into situational and human context the issues about which I had read in the Royal Commission report and which are implied in *Adjusting the Course*. I had another reason, and that was to try to learn first hand how the Faculty of Education is viewed by our colleagues in the profession and to find out how our programs are meeting the real needs of the Province.

I probably should have written a travelogue as I wandered from Stephenville to Port-aux-Basques to Deer Lake and Plum Point and Flowers Cove, from Fortune and Grand Banks to Clarenville, Gander, Milltown and English Harbour, and even further away from St. John's to Goose Bay, Wabush and Labrador City, and to many other places which remain fixed in my memory - Cormack, for instance, where sixty-some children in an all-grade school work in a computer laboratory which would be the envy of any school anywhere and which was made possible by the efforts of parents. But even though I was often reminded of the *Kingdom by the Sea*, I am not Paul Theroux and Newfoundland is not England. And so I went, I saw, I talked and I listened, and when I got into my rented four-wheel drive as the weeks turned wintry, to drive to my next destination, I dictated my thank-you letters and my impressions for Susan to transcribe later, notes which would give my memory a boost when I couldn't recall whether I met the Norwegian-speaking children at Balbo Elementary or at the Lake Academy.

This rather long preamble is partly a way of stalling, of putting off the moment when I have to stop scanning the memory bank and start extracting generalizations which impose order on the abundant experiences, impressions, and perceptions which are stored there. There are many possible ways of organizing the "input data," but I have chosen four generalizations that I believe best capture my observations to date.

1. Newfoundlanders care about education. Evidence is easy to find. I have never seen smaller operating budgets than I found in the school districts in this Province, and yet most of the schools are reasonably well equipped. Of course, they could always use more books in their libraries, computer hardware and software, classroom assistance for children who need a little extra help, but visiting schools in this Province, one would not immediately guess that this is a "have-not" Province. That is because communities have taken on the responsibility of looking after their schools, or trying to ensure that their children do not go without those technological and other resources which are necessary if they hope to compete for university places or for a diminishing number of jobs, jobs which require very different skills than they did a decade or two ago.

In Cormack, for example, I saw a computer laboratory completely equipped with customized tables and shelves lovingly built by parents for the K-6 school. These same parents also raised the money to buy computers to supplement those bought by

the District. At this same school there is a beautiful playground nestled in the trees, constructed and maintained by parents. Cormack is not unique, either. Everywhere I travelled I saw evidence of strong support for the schools. I saw parents working in libraries and in classrooms and lunchrooms, assisting children with special needs, or helping teachers who needed an extra pair of hands. I also found that school personnel greatly appreciate the participation of the community.

2. Curricular change is needed. This is a point on which I have heard little disagreement, but there is also little disagreement that many of the assumptions underlying the recommendations for change are simplistic if not faulty. The recurring theme is that the Department of Education fails to take account of the geographic and demographic realities that impact our schools. Dr. Crocker says that we need to focus on the "traditional" areas of language, math, science and technology. I agree (and so do most of the teachers I've talked to), but how can a high school with 78 children offer advanced placement physics, English, or advanced-placement anything?

Another concern expressed across the Province is that greater emphasis on the traditional ("core") curriculum should not come at the expense of art and music. The threat to these areas is a result of our assumption that we need to spend MORE time on these subjects when what may be needed is better time. This assumption, as has been pointed out to me repeatedly, is simply false. No additional amount of time will result in greater learning outcomes if the quality of the time spent is poor or inappropriate for the task or the student. This issue sometimes surfaced in discussions of teachers' perception that the Department is trying to do away with field trips and other diversions from "time on task." They point out that it is the "non-core" subjects such as music, theatre, physical education, and French which will suffer most under this policy. They also express discomfort over extending the time we spend at anything without a clearer idea about how successful it is. They also express the worry that the retention rate, greatly improved in nearly all districts in recent years, will begin to drop again if schools return to an "all work and no play" mode of operation.

3. Teachers know that change is needed and are prepared to participate in the process. As a recent arrival in Newfoundland, I was a little surprised to find so much accord on this subject, having got the impression that many in the profession were at odds with the government's stated intentions for revising the curriculum. What I learned is that there is widespread agreement on the need for change, but, and this is a very important qualification, what is being questioned is the mechanism or process. Teachers believe, rightly, I think, that as the people most intimately acquainted with the problems in the schools and those who will ultimately be responsible for implementing change, they should be active participants at the decision stage. They are also worried that the government's motivation may be more financial than educational -- that the desire to save money will inspire changes that may be more fiscally than academically sound.

4. The denominational system may be cumbersome, but it is NOT the biggest educational issue which the Province confronts. Of course, we could argue and debate about what the most important or biggest issue is. One way of determining that is to determine which problem, if solved, would have the greatest impact on solving the others. Having identified a score of problems (retention rates, low literacy rates, low test scores, overcrowded classes, small schools which cannot afford specialty programs, too few program coordinators, too few counsellors, etc.), can we then pick one which, if solved, would "fix" all the others? Would crushing the denominational system, for example, solve the "problem" of low test scores? Probably not, unless there

were hundreds and hundreds of thousands of dollars saved that could be reallocated to intervention programs. On the other hand, it seems that if we could solve the literacy problem, then a lot of the others would solve themselves. The denominationalism issue might not go away, but I've seen abundant evidence that it is in the process of solving itself anyway, or rather, that schools and school districts are well on the way to making significant changes themselves.

The past four months have provided me with a short course in education and in geography (and in linguistics, but that's another story). We all know that geography has a profound impact on education in Newfoundland, but there are certain impacts of geography which I believe have special professional development requirements. Attracting good teachers is not as difficult now, when there is a national and provincial oversupply of teachers, but if projections are correct and we face a shortage in a few years, there will have to be some sort of incentives to attract teachers to small, relatively isolated communities. Providing financial inducements for teachers to work in small or remote schools is not our job, of course, but we can provide another kind of incentive. By encouraging student interns to locate outside the metropolitan area, we take an important first step toward supplying the teachers who will be required within a few years.

Our principal job, of course, is to prepare new teachers to meet the social and educational demands of those communities when they get there, but perhaps more importantly, it is to help them to maintain professional currency. Professional development for all teachers in the Province, but concentrating our attention on those locations distant from St. John's, should be our service priority if we are to create and sustain a productive partnership with our colleagues in the profession. I believe passionately in that partnership and its potential for making Newfoundland a Canadian leader in education. Partnerships are, of course, very easy to talk about; they are much harder to create and to sustain. They depend upon mutual respect and trust and they require hard work. Travelling the Province, I have been extremely impressed with the willingness of the profession to enter into a working partnership. The dedication that members of the profession demonstrate by their hard work in an increasingly uncertain and sometimes hostile environment bodes well for a productive partnership. To risk being trite, though, the ball is in our court. The Faculty now must demonstrate that we are willing and able to establish and maintain the kinds of alliances that will further our goal of excellence in education, a goal which already bonds us. I undertook to visit all the school districts in the Province to begin to negotiate the alliance. I now look forward to working with the Faculty and with the profession to realize our goals through research, teaching and professional development that meet the needs of and are accessible to the teachers of Newfoundland and Labrador and that set us well on our course into the twenty-first century.

BOOK REVIEW

**Schooling in a Fishing Society: Education and Economic Conditions
in Newfoundland and Labrador 1836-1986 Volume 1**

and

**Schooling in a Fishing Society: Education and Economic Conditions
in Newfoundland and Labrador 1836-1986
Companion Volume: Tables, Volume 2**

by

Phillip McCann

**St. John's, Newfoundland: Institute of Social and Economic
Research (ISER), Memorial University of Newfoundland, 1994,**

277 pp. and 329 pp.

Reviewed by

J. W. Bulcock

Memorial University of Newfoundland

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In this two volume work, Phillip McCann, Professor Emeritus of Education at Memorial University, Fellow of the Royal Historical Society, and University of Manchester Ph.D., has written the definitive social history of Newfoundland education covering the 150 year period from colonial times to the beginning of the 1990s. Volume one begins inauspiciously, however, with the unassuming claim on the first page that the purpose of the book is to comment on the many statistical tables (most of which, incidentally, are presented in the second volume). Thus, the book "does not pretend to be either a history of education or a treatise on economic development", a claim which is belied both by the book's title and by the paradoxical statement on the second page, that the book "cannot pretend to be *absolutely* definitive." (Emphasis added.) Notwithstanding these caveats the fact remains that following its publication no future historian of Newfoundland education will be able to ignore this work. If in McCann's opinion it is not absolutely definitive it is still a significant step in that direction. Its 600 plus pages represents an immense intellectual effort over many years. While the title specifies the period covered as 1836-1986, McCann brings the work more up to date with a "postscript" chapter dealing critically with the social and economic policies of the Wells' Government and their potential consequences for education. In particular, the postscript chapter addresses the educational implications of two Government reports published in 1992: *Change and Challenge: A Strategic Economic Plan for Newfoundland and Labrador*, and *Our Children Our Future*, the Report of a Royal Commission on Education.

McCann's tenure at Memorial University covers 28 years, during which time he has written extensively, but not exclusively, on Newfoundland education. These volumes are not, however, a mere synthesis of his previous scholarly endeavours, but, rather, a reassessment of the relationships between the economy and education, or the role of education in its social and economic context, on the basis of an exhaustive survey of over 30 archival sources in Newfoundland, England, and Ireland. The Institute

of Social and Economic Research, the research sponsor, and publisher of the two volumes, is to be congratulated for recognizing the importance of publishing the 330 pages of statistical data in volume two as constituting a stimulus to yet additional research by others on aspects of the economy and education not covered by McCann. For example, with due respect to most Newfoundland historians, there would seem to be some evidence that the Commission Government years did not constitute a kind of stagnant backwater in so far as education was concerned. Indeed, as McCann himself suggests in his 1987 paper in *Newfoundland Studies*, educational policies in the first Smallwood Government may have been simply logical extensions of policies already in place -- a position implied but not addressed in *Schooling in a Fishing Society*.

Phillip McCann's doctorate is from the University of Manchester where the first chair of economic history in Europe was established in 1910. The "Manchester school" as it was called, pioneered new methods of historical inquiry including econometric history or cliometrics, and social history. The school encouraged closer liaisons between historians and social scientists, while at the same time it was shifting away from the prevailing narrative style of political history, and toward a mode of historical scholarship emphasizing an understanding of the socioeconomic and cultural, or structural, trends underlying historical events. Like the members of the Annals school in France which emerged later, the members of the Manchester school believed that historians had to be acquainted with the social sciences, even to the point of using social science methodology such as the case study, comparative research, and interviewing techniques -- all which McCann has used in some of his earlier studies (for example, McCann, 1982; McCann and Young, 1987; and Stewart and McCann, 1967).

Such trends had reached "take-off" in English and French historiography in the 1950s when McCann was a doctoral candidate in Manchester. The history of social groups and changing social structure was carried out by both historians and sociologists using the new methods of quantitative history. Their analyses tended to be unemotional, thoroughly documented from primary sources, and relatively impartial, a style which permeates *Schooling in a Fishing Society*. Yet, McCann incorporates more recent historiographic research emphases into his analysis. There is a pervasive sociological thrust to Part IV of volume one, as well as in both the postscript and the conclusion, in which he draws on the work of Neil Smelser, a student of the structural-functionalist, Talcott Parsons. While this would seem to place McCann in the evolutionary/consensus as opposed to the revolutionary/conflict, or Marxist camp of change theorists, Smelser (1990: 12) describes McCann as a Marxist historian who like

*Early Fabians such as Sidney and Beatrice Webb, J.L. and Barbara Hammond, and R.H. Tawney belonged to this tradition as do various more recent "radical" interpretations by Brian Simon, Ivan Moorish, **Phillip McCann**, and to some degree, Harold Silver. (Emphasis added.)*

But few historians would object to being identified in the same breath as the equal of some of the greatest British historians of the twentieth century, regardless of their philosophical orientation. One may characterize *Schooling in a Fishing Society* as a study incorporating all these elements of the new social history. It intertwines social history, economic history, statistics, and both sociological and economic theory in interesting ways to be illustrated next, in what some have called "historical social science".

The most pervasive theme in *Schooling in a Fishing Society* is that it is the economy which is of basic importance to a country's social and cultural life; and that while the two may operate reciprocally, the economic effects on education are substantially greater than educational effects on the economy. Effectively, this is the rejection of the liberal thesis of the late David Alexander (1980). This thesis holds that because educational attainment governs income, and because income is maldistributed in society, then education is potentially an important lever for redistributing incomes on a more equitable basis. McCann's three-fold counter argument applies predominantly to pre-Confederation Newfoundland. First, the purchasing power of the Newfoundland population depended on the bounty of the fishery and on the price of fish in international markets. Second, the magnitude of customs duties depended, in turn, on purchasing power. Third, since educational financing depended virtually entirely on custom's duties, then both the quantity (enrolment) and quality (standards) of Newfoundland schooling depended on the economy.

The logical obverse of this argument is labeled the human capital thesis. It is people, the argument goes, that make up society; and the wealth of society, its intellectual and moral strengths, depend on the industriousness, initiative, knowledge, and motivation of its people. The primary institution with the mandate for promoting and enhancing people's resources is the educational system; and the human capital equations demonstrate unambiguously that investments in health care and education yield substantial private and social returns in terms of personal incomes and national income growth accounting. In fact, the research to date appears conclusive. No factor of production accounts for greater reductions in the residuals of the income growth accounting equations than the human capital element. And further, the human capital element is the primary factor accounting for the intergenerational transmission of both abilities and wealth. But these claims by the human capital economists are far from being self evident to Professor McCann, whose concluding words in volume one are:

The history of Newfoundland education suggests that the economic conditions of society exercise a stronger influence on education than the latter has ever done on the economy. (p. 253)

The arguments (pp. 113-114) for dismissing the human capital hypothesis rest on the belief that the school is not an agent of political or economic change. Thus, scepticism is expressed about whether the school makes a significant difference to society as a whole over and above private returns to the individual.

The contribution of school to society -- at best problematic -- is here taken as the teaching of a wide range of subjects in the best possible manner in order to achieve a satisfactory development of human potential. (p. 114)

Human capital arguments, claims McCann, "displace attention from the structure of national and international economic relations to the individual worker." These cryptic comments seem insufficient to justify his position, but rather than dwell on the matter he cites several critics of the human capital hypothesis.

There is much more to the study of *Schooling in a Fishing Society* than the rejection of Alexander's (1980) liberal thesis. The book addresses the issue of urban-rural differences in school achievement; and the fact that despite living in recessionary times now that ground fish stocks have declined, recent governments have not significantly reduced the availability of educational resources; for example, teacher's

salaries have continued to increase, attendance rates are at an all-time high, and pupil-teacher ratios continue to decline. Yet, despite all the attention, educational standards remain virtually unchanged. It is in this context that attention is drawn to current government educational policy. He criticizes the role specified for education in *Change and Challenge*, the strategic plan for the future social and economic development of the province, on the grounds that it is simply a pale reflection of the conservative educational reforms, "ideological imports", of the 1980s in the U.S.A. At the same time he recognizes that *Change and Challenge* lays out a bleak economic future for Newfoundland unless the economy can become much more productive than it has been in the past. Short shrift is also accorded the 1992 Royal Commission report on education, *Our Children Our Future*. He claims that in terms of educational governance the report is "scarcely an advance on the non-denominational system of 1836-1843."

McCann provides the reader with much food for thought about the development of Newfoundland education. For the economic historian there are tables of the dollar values, per capita of the fishery labour force, of major fish products (Table II-60, p. 210), and the per capita productivity of the fishery labour force, in quintals (Table II-61, p. 211) from 1861-1916, for both the entire province and by region. There were substantial variations by year, and within years by region. It is doubtful that these data, painstakingly gathered from Newfoundland censuses over the 55 year period, have ever been compiled into tables of the kind McCann presents in volume 2. They will prove a boon to future economic historians. They show that children in the 19th century "acted as a reserve pool of labour for the fishery, subsidizing the value and output of the industry at the expense of their schooling." Thus, when "productivity in the fishery was high, greater numbers of children would be employed within the fishery, with a consequent lowering of their attendance records." Since boys were affected more than girls it is correct to say that Newfoundland women to this day have tended to have higher standards of educational attainment than men.

For the social historian the data substantially extends that provided by Alexander (1980). This permits superior estimates of what it would have cost the Newfoundland government in the period 1861-1916 to provide universal education. The estimates generate the conclusion that it would have cost "... a mere 2.4% of export values" to provide "... a school place for all the (5-15 year-olds) age group". (Vol. 1. p. 103.) But given that Newfoundland education was seriously underfunded even by the prevailing standards of the day, the question which arises is, why? Five reasons are suggested: the somewhat primitive cashless capitalism, the relative absence of technological change in the fishery, the rapidly growing population, the exporting of considerable capital gained from profits in the fishery, and the substantial private investments in the Newfoundland railway and dockyards.

For the educational historian there are major sections of the first volume dealing with the quality of education; for example pages 117 through 149. To this day Statistics Canada presents educational data which is almost exclusively quantitative -- enrolments, per capita expenditures by province, the number of schools by type and such like. Very little qualitative data exists related to national or provincial educational standards. McCann somehow has been able to overcome this dearth of qualitative data for the 55 years beginning 1861 by identifying the proportion of student enrolment in the advanced levels; and, above all, by describing in Volume 2, Appendix III, (pp. 315-329) what the standards from standard I to standard VI meant. For example, the Newfoundland standard V in writing was described as follows:

To write from memory the substance of a story read out twice; spelling, grammar, and bad writing to be considered.

He also compares standards in Newfoundland with parallel standards in England, Ireland, and other Canadian provinces. This is an astonishing achievement. For the student of history, here is the data ready made for a publication, since McCann only touches the surface of the data's interpretive potential.

It is sad to learn that literacy and numeracy in Newfoundland fell substantially short of the standards prevailing elsewhere in the modern world in the same time frame, from the second half of the nineteenth century to the early part of the twentieth century. Both McCann and Alexander (1980) reach the same conclusion that a critical mass of well educated people is a requirement for the transformation and liberation of the individual from the stultifying traditions of the past, and that this critical mass was not present in Newfoundland. Its absence represented a barrier to both individual accomplishment and to economic progress. Indeed, it perpetuated a form of internal colonialism of a kind constituting double deprivation for the outport regions.

It should be clear by now that the two volume work is much more than "a commentary on the tables". In addition to the above mentioned issues he presents the basic history of denominational schooling, again leaving most of the details to cited journal articles by leading Newfoundland historians. He deals with developments toward a professional corps of teachers; to gender differences in recruitment to teaching and the related issue of gender differences in salaries; to regional differences in school attendance and school achievement; and to differences in educational emphases between the denominations. Following the standards of the Manchester school the arguments are meticulously documented in statistical tables from several dozen sources. Thus, at long last there is a worthy social history of Newfoundland education; thereby justifying its incorporation in the university curriculum. One would assume that it would deserve a place on the teacher education curriculum in the Faculty of Education. In the short term, given the politics of the curriculum, this is unlikely. For a quarter of a century the history of education has had a minor role, that of an elective, on the teacher education program of studies. Yet, in this reviewer's judgment, *Schooling in a Fishing Society* sheds more light on Newfoundland education than any other single work of his acquaintance.

In conclusion a comment is in order about the nature of statistics, and its role in the humanities, including education. One entire volume of *Schooling in a Fishing Society* is devoted to statistical tables. These are structured into four historical periods: (i) 1836-1856, the granting of Representative Government to the achievement of Responsible Government; (ii) 1861-1916, the era of Responsible Government to the First World War; (iii) 1921-1949, the period covering the creation of a Department of Education to the imposition of Commission Government; and (iv) education under Confederation. Within each period the data are organized on a quinquennial basis, every five years; and within each quinquennium (where available) statistics on four stratifying variables are presented -- gender differences, regional differences, religious differences, and economic conditions. Comparisons are made, for example, between seven regions on the number of schools, teachers, enrolment, attendance, and standards of achievement. Where the data permit, comparisons on these variables are made as between Newfoundland, England and Ireland. Economic conditions generally refer to National Product, or Gross Domestic Product, but concepts such as standard of living and average wages are also used. At best, however, the statistics used are means and proportions. No attempt is made to correlate variables in the time series

data base; and, similarly, differences between means using the t-test, analysis of variance or simple regression are not used, though in some instances could have been. The economic data is not adjusted for inflation or (in the 1921-49 period) for deflation. Gender differences in teachers' salaries are not adjusted for years of service, qualifications, or whether the teacher was an administrator or not, hence entitled to extra responsibility allowances. The net result is that in the absence of various statistical transformations and controls the inferences from data to common language meanings have to be exercised with caution.

Statistics call for reasoning from imprecise empirical data, for the use of inference based on a knowledge of probability theory. Thus, statistics enables the initiated to deal with the all pervasive role of chance in everyday life. This is the logic of hypothesis testing, the logic underlying the formulation of models, and the verification of hypotheses. As such it is the very foundation of human reasoning. Such reasoning is ubiquitous in everyday life. Statistics are words. They are written in the logically same prose in which the historical narrative is written. And given its ubiquity statistics has surely as great a claim to being a humanities discipline as history, or philosophy, or religion.

Despite its lack of a list of tables, bibliography and index in volume 1, and despite this reviewer's reservations about the causal ordering of the education and economic growth relationship, this view of Newfoundland education is history at its most challenging and thought provoking. *Schooling in a Fishing Society* is a fine example of revisionist social history, in which schooling is examined as a mirror reflecting the economic circumstances, government policies and denominational rivalries of the day. These three institutions, often in partnership, have dictated the conditions of schooling from colonial times to the present day. The massive documentation accompanying this work provides substantial support for Professor McCann's critical stance which in the opening sentence to this review was stated to be definitive. Given this perspective it will come as no surprise to the reader to find that McCann is just as critical of present day schooling policies and practices as he was of those of the past. Thus, he is sceptical about whether current educational policies proposed as a panacea for economic decline will succeed given the "long standing" deficiencies of a constitutionally mandated denominational system.

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