

# The Economics of choice: Assessing the Efficiency and Effectiveness of Alternative Approaches to Choice in Education

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## Overview

In education, as in all human activities, the question of economics is ever present since economics is concerned with the allocation of scarce resources in order to realize desired values. These resources can be measured in kind -- the classic land, labour<sub>1</sub> and capital -- or in dollars. If greater value can be realized by a different allocation of resources then, from the economist's perspective, a reallocation of resources should take place. It is all very scientific, at least on first appearances.

If economics has a bias, it is that it assumes that values - wants, needs, and preferences -- are known in advance and that individuals are the central agents in making choices. In education, this perspective would imply that that if we could sum the satisfaction that individuals acquire through their own or their children's educational experience -- call this sum  $S(E)$ -- then our objective should be to maximize  $S(E)$  within existing fiscal constraints. If individuals are not able to assess their satisfaction with education very well, or able to weigh satisfaction gained from education relative to the satisfaction acquired from other pursuits, then economists have a problem. Economists also are stymied if a good or service is consumed collectively with either everyone or no one receiving it.

To begin, let us assume that the world works the way economists would like it to; that is, let us assume that we can engage in a rational pursuit to maximize  $S(E)$  for a given level of financial resources. To know how well we succeed, we need to have specific criteria to assess how good a given allocation is. Several criteria will be presented and then it will be argued that the current allocation of resources does not maximize  $S(E)$  and that reallocating resources to support greater educational choice, in fact, can result in an increase in  $S(E)$ . Specific techniques for allocating resources will be described and assessed in terms of their appropriateness for the task of increasing  $S(E)$ , and the role of regulation in the entire process will be described with acknowledgement that some regulation is necessary<sub>1</sub> but that excessive regulation is harmful. The paper concludes with a set of suggestions for an evolutionary increase in choice in education.

## Key Issues

The preoccupation of economists with efficiency and effectiveness arises from a concern for maximizing the value to the individual. By value I mean the satisfaction that arises by fulfilling a need or preference. In a classic free-market situation, individuals are able to use their own resources to obtain the combination of goods and services that provides most satisfaction for a given expenditure; that is, no other combination of purchases would yield greater satisfaction. This focus on satisfaction reflects the utilitarian philosophy of John Stuart Mills, and is enshrined in the economist's reference to "individual utility functions" that describe how much satisfaction is received from different combinations of goods and services. The notion that there is some combination of a society's expenditures that would maximize overall satisfaction of society's members,  $S$ , is referred to as a "Pareto efficiency", after the Italian economist Vilfredo Pareto, who posited the existence of a social utility function equivalent to the individual's utility function. Public policy's task, in this perspective, is to facilitate the efficient allocation of resources, public and private, to make  $S$  as large as possible.

For our purposes, the first issue in allocating resources is to decide how much to allocate to education as opposed to other social and private needs, including health care, housing, investment, etc. If too much is allocated to education and too little to others, then overall efficiency may suffer. That is, overall well-being will be less than it could be and a reallocation should be made among sectors in order to remedy the situation. The second issue is how to allocate resources efficiently within a given sector, such as education, in order to maximize satisfaction within that domain. Both issues warrant attention.

The size of allocation to a particular sector, such as health or education, is usually measured by expressing expenditures as a percentage of Gross Domestic Product (GDP); i.e., as a percentage of all the goods and services provided in a nation or province during a given year. There is no hard and fast rule as to what education expenditures should constitute as a percentage of GDP; the usual practice is to compare one jurisdiction with other, comparable ones. In 1991-92, for example, Canada's expenditures on education as a percentage of GDP were the highest among the G-7 nations: Canada, 7.2%, the United States, 5.4%, United Kingdom, 5.2%, France, 5.5%, Germany, 4.1%, Italy, 5.1% and Japan, 3.6% (Statistics Canada, 1995). These figures include all levels of education. Expenditures on elementary and secondary education in Canada were 4.7% of GDP. Among the provinces in 1991, public expenditures on all levels of education ranged from 6.0% of GDP in Alberta to 10.9% for Newfoundland. Table 1 provides recent data on educational expenditures.

Given these comparative data with other developed nations, it would be difficult to argue that Canadians are not spending enough of education; indeed, it would be possible to conclude we may be a bit too generous. Since 1991, I would surmise that the percentage of GDP Canadians spend on education has declined since the rapid increase in public expenditures devoted to the servicing of our enormous public debts has crowded out other public expenditures- Both the federal and provincial governments have frozen or reduced expenditures on education during this period. Even then, education has experienced less in the way of reduction than many other public services, so government has maintained its relative position to other services, and private funds have, to a degree, replaced public funds that have been lost, particularly in the case of postsecondary education where fees have increased. Using the "Goldilocks' test" — whether we are spending too much, not enough, or just right on education — I would conclude that we spend more than we should as reflected in the dependence of Ottawa, Quebec and Ontario on deficit financing. We are moving close to "just right", but are not yet there.

The second key issue concerns the use made of the funds allocated to education. Are these funds being allocated in such a way as to maximize public satisfaction with educational services? Here also I believe that there is strong evidence of misallocation in many provinces<sup>1</sup> and in Ontario's elementary and secondary education system in particular.

The allocation of funds for schooling in Ontario occurs in a number of ways and at many different levels of the educational system. The key allocations are 1) among school boards and 2) among programs and resources for programs within school boards. Funding for school boards is shared between the province, which currently provides about \$6 billion dollars of the \$14 billion spent annually, and school boards, which raise the \$8 billion balance from residential (\$5 billion) and commercial and industrial (\$3 billion) property taxpayers.

There are currently five types of school boards in Ontario.' English public, English Roman Catholic separate, French public, French Roman Catholic separate<sup>1</sup> and Protestant separate, of which there is only one, which has a single elementary school. In addition, federal funds support schools operated by Native peoples on reserves and some support flows through the University of Toronto to University of Toronto Schools (UTS), which received provincial assistance until a few years ago when the New Democratic Government phased these out.

Programs within school boards are numerous, particularly at the secondary level. Most relevant for the topic of choice in education are those which involve the operation of distinctive schools; among these are French immersion, alternative, traditional "academies", and special schools for music and the arts, for technology, and for business. Distinctive "special education" schools for those

with learning disabilities also exist, although many of these have been closed as students with special needs have been "mainstreamed" into regular schools, with provision for supplementary services where needed. Some school boards also operate low profile ethno cultural/religious schools -- dominantly Ukrainian schools in the Metro Separate system, Mennonite schools in Wellington County, and the like. Local parents know of these schools and make use of them, although their existence reflects local accommodation rather than a policy stance in favour of the principle of choice in education. In addition, within most school boards, students have the right to attend any school within the jurisdiction in which space is available; i.e., Ontario school boards operate on an "open enrolment" basis, although this option not widely used by parents. As well, students may not "cross" school board lines without payment of tuition, with the exception of Roman Catholic and public secondary schools in coterminous school boards. Normally, sending a child to a neighbouring or coterminous board (elementary level) requires payment of a tuition fee.

This sketch of school board structures and programs reveals that Ontario already provides a surprising array of options to parents and students. The variety is not as great as in a province like Alberta, which has charter schools, religious alternative schools, and significant public funding for private schools, but it is much greater than in has been traditional in the states of the United States, from which we obtain much of the literature on school choice. However, many of the choices that exist within Ontario are privileges rather than rights; school boards may cancel French immersion, alternative, and special schools for the arts and music, etc at will. They are under no obligation to provide or maintain these choices. The choices exist at the political will of the board.

At least three difficulties present themselves in the provision of choice programs within school boards, two economic and one political. The first economic problem has to do with the non-divisibility of some types of educational services; unlike hot dogs or cars, education typically has a collective nature. Students take part in a social institution -- the school -- to learn academic and social knowledge, skills, and values. While some subjects can be taught one-on-one, others cannot. (The cannot have a group discussion or play a soccer game alone In the case of divisible subjects, like math and English or French, we encounter the second economic problem of economies of scale. We cannot afford extremely small class sizes; we need to bring sufficient numbers of students together to bring costs down to an acceptable level. While much of the post-war literature advocated quite large institutions to ensure a variety of programs could be available, recent literature that emphasizes student engagement and participation as a, key variable in explaining school success concludes that smaller institutions are best. Nevertheless, at the extreme, when we consider each individual's unique tastes, it is clearly not practicable to satisfy these desires entirely.

The political problem affecting choice concerns the values of a majority of those holding decision rights in school boards. *Often*, officials and trustees support the notion of the school as a "mini-society" for teaching youth. In a diverse nation such as Canada, this value position leads to the notion of a common school in which diverse students mix. Such a program is not divisible; if an alternative to it is available, then those choosing that more homogeneous option necessarily reduces the heterogeneity within the "common" school. Put another way, the utility function of the trustees and officials holding this value is logically contradictory to the utility function of those preferring distinctive schools and programs. The political problem is to balance these two positions in order to provide equivalent satisfaction to both groups - what Herbert Simon referred to as "satisficing", part satisfaction and part sacrifice.

## **Labour Costs**

The acquisition of resources, especially teaching staff, for programs is another area where efficiency is critical. The most efficient solution is to purchase the right balance of resources - facilities, teachers, administrators, support and maintenance staff, books and media, etc.-- at the best prices. The key administrative problem in education is making these purchases and matching the goods and services acquired with specific programs. Table 2 reports the overall financial results of these decisions in Canada for 1992. Clearly, both as a percentage of operating expenditures (66.5%) and as a percentage of total expenditures (61.1%), funds for teachers' salaries dominate. Education is very labour intensive. Instructional supplies, including textbooks, library books, laboratory supplies, and the like, consume barely 20% of all expenditures and capital expenditures for elementary and secondary education account for about 8% of the total.

Teaching services in Canada are purchased from labour monopolies, the teacher's federations and unions, that have been sanctioned, if not created, by provincial laws. We tend to take this practice for granted, but it is an activity that many economists would decry as creating extreme interference in the labour market for teachers that has led to higher prices and higher levels of staffing (Eberts & Stone, 1995). The recent report on the expenditures of education in Ontario in comparison to other provinces (Lawton, Ryall and Menzies, 1996), which has been attacked by union officials, identified the salaries of teachers as a primary source of expenditure differences among the provinces. At a time when as few as one in four new graduates of faculties of education can find jobs, school board negotiations with teachers in Ontario are leading to the dismissal of junior teachers in order to raise the salaries of remaining teachers by "restoring the grid", the union's euphemistic language for giving wage increases on the

basis of seniority. In many cases these increases were suspended during the three-year "social contract" which limited public sector expenditures in Ontario.

Other purchasing practices of school boards are also of doubtful efficiency. Public, separate, and French-language school boards often operate parallel bus services, tracing similar routes in bringing students to schools. Redundant business offices, central offices, business, Systems, and even schools have been identified as byproducts of a system of competition funded from the taxpayer's wallet, which is hardly the same as free market competition where providers compete to offer the best products and services at the lowest price to the consumer. In some Cases policies have been adopted to require the payment of "union" wages *for* all services purchased by the board, even if these services are available at lower cost.

While the right to organize and to sell labour collectively is a basic right of any group of individuals, the notion that the state should require a person to be part of such a group in order to obtain employment is odious. The right of contract is a fundamental human right, and to effectively remove this right in a misguided notion that doing so serves the public interest has only recently come under public challenge in a report on teacher collective bargaining in Ontario (Paroian, 1996). There are benefits to collective agreements between employers and employees. The transaction costs involved in selecting and supervising employees is considerable, and collective agreements reduce these in comparison to large numbers of individual employment contracts. Also, a stable, reliable workforce is preferable to one with high rates of turnover and with unpredictable competence. However, collective contracts are less flexible than individual contracts in terms of staff management, particularly in terms of redeployment, reductions in numbers, and dismissal for poor performance. At present, it appears the costs to the current system of collective bargaining outweighs its benefits.

One phenomenon associated with the economic power of teachers' unions is their political influence, both formal[ -- as in municipal and provincial elections -- and informally in terms of how the educational system is structured and of what is taught. For example, teachers' unions in British Columbia and Ontario are on record as opposing increased choice in education in the form of charter schools. One can ask why an employees' group should feel that it has the right to use members' dues to engage in a campaigns against a changes in the structure of the educational Systems that governments, with broad electoral bases, may feel appropriate. In the U.S., unions must report all funds spent on political activity and teachers have the right to opt out of this portion of their dues.

In sum, the allocation system for resources in education is currently inefficient: funds are allocated on a restricted range of options that are politically determined, and excessive prices are paid to purchase many of the resources,

particularly instructional staff, that are used to operate the system. Within the current level of expenditure -- or even a somewhat reduced level -- there is room for an improved allocation pattern that would increase efficiency and effectiveness.

### **Alternative Allocation Mechanisms**

There are a number of ways of matching money to programs for children. Our current practice in Ontario of having school boards collect taxes and receive provincial grants, which they then allocate according to provincial and local priorities, is by no means the only way education can be funded.

Economists' high regard for free markets have given rise to a number of proposals that emulate markets for distributing public funds. These proposals have the purpose of achieving social equity by drawing on the collective wealth of society while maximizing individual choice by leaving the selection of programs or schools in the hands of the parents or students. The most common of these proposals is that of "vouchers", in which government would provide the parents of each child a coupon that can be cashed in at the school or program of choice.

A related concept is that of an "educational endowment", which is a promise by government that all persons may benefit from the expenditure on education of a given amount of money during their lives. The funds could be spent at any level of program or type of instruction. One can imagine this proposal operationalized by the issuance of a "telephone card" for education. After each unit of instruction, an amount would be deducted from the endowment by an electronic transaction. Parents and, after the age of majority, students could use the card to purchase academic, athletic, art, vocational, and professional education. They could supplement the public allocation, within limits, with payments such as those currently allowed for Registered Education Savings Plans. This endowment approach would be similar to the system used for health care at present, but with fixed limits or drawing rights over a lifetime.

Educational vouchers and endowments would involve complex record keeping and might be expensive to manage, although probably no more so than the keeping of records for airline points and health care billings. Also, if left unregulated, these approaches might lead the providers of popular educational options to raise prices beyond the ability of some to pay. As a result of this threat to equity, most proposals for such schemes suggest forms of regulation to ensure overall social policy objectives, including equity, are promoted.

One alternative to vouchers that is presently in use are grants that "follow the student"; that is, the government provides grants to schools or school systems based upon the enrolment of students. Today, most public funds for education in Canada are allocated on such a basis, although typically only government operated services qualify to receive funds. Provinces that do provide per pupil

grants to private institutions usually have some form of institutional approval process for schools to qualify and provide grants that are smaller than those allocated to public institutions. Grants to institutions have a major advantage over vouchers to parents in that institutions are far fewer in number than individuals, thereby easing the administrative burden of allocating and auditing funds.

Yet another option already employed to a degree in Canada is the use of tax credits or deductions for education. At present, postsecondary students, or their parents, may deduct the tuition fees from their income thereby receiving, in effect, federal and provincial grants equal to the taxes that would have been paid on an amount of income equal to the tuition. Also, expenditures for pre-school and other types of child care may be deductible for parents working outside the home. In theory, one might fund an entire educational Systems by providing parents with rebatable tax credits for educational expenditures. This approach has one advantage over vouchers and educational endowments in that individuals do all of the record keeping and, presumably, do not receive the rebate until well after the expenses have been incurred. One could place annual and lifetime limits on such credits in order to limit public liability and to ensure a degree of equity.

### **Role of Regulation**

Regulation plays a critical role in the operation of our current publicly-funded educational system, and would continue to do so under any of the choice-enhancing options outlined above. *Who* can provide programs, *what* programs may be provided, *who* may teach in the funded programs, and the *extent of funding* provided are and would be controlled by provincial regulations. However, current regulations are excessive; a much lighter hand is needed.

In the past two decades, neo-conservative economists have led a fight for the deregulation of the providers of many goods and services. Airlines, telecommunications, railroads, and now even zoning in urban areas are being deregulated in order to accommodate changing technologies and ensure that domestic industries are globally competitive. Educational regulations<sub>1</sub> in contrast, remain virtually untouched across Canada. Ninety-five percent of the provision of educational services remains in government hands, and government has raised costs by elevating formal educational requirements for teachers, by strengthening union powers, and by requiring "pay equity"<sub>1</sub> which in elementary and secondary education meant rewarding teachers who had never completed university with the same salaries earned by university graduates. Meanwhile, competent and trained teachers immigrating from other nations, or administrators from other provinces, remain ineligible for employment in Ontario.

Even without changing the current structure of grants for elementary and secondary education, choice and efficiency in education can be enhanced, and

overall satisfaction with education be increased, by simple regulatory changes that would include those agencies and persons currently excluded. New and lower cost teachers could be made available by recognizing overseas credentials and by ending the closed-shop monopoly of provincial teachers' unions. The number and types of programs available to students could be enhanced by allowing funds to follow secondary school students to colleges and universities if students wish to take postsecondary courses for secondary school credit, a policy pioneered a decade ago by the state of Minnesota. Recognizing overseas and out-of province certification could enhance the pool of skilled administrators available to lead educational institutions. These and scores of other regulatory changes could enhance choice, quality<sub>1</sub> and efficiency with very little additional expenditure.

### **Maximizing Satisfaction**

Ultimately, the goal of increased choice is to increase public satisfaction with educational services without increasing costs. The implications of the economist's perspective is that the provision of a greater array of choices enhances parent and student satisfaction by facilitating a better match between their preferences and the programs in which students are enrolled. Collectively, if every family experiences a better match with their own preferences<sub>1</sub>, then social satisfaction is increased. In all likelihood, many who have already taken the decision to opt out of the publicly funded system in order to participate in private schools or home schooling would more satisfied. No longer would they be outcasts among us: individuals whose preferences happen not to coincide with those who current make decisions for the publicly funded system. Such an inclusive system would recognize that provincial educational Systems have many potential providers of an education that would offer both a common core curriculum and unique services that are preferred by some.

### **Conclusion**

Enhancing choice in education will lead, as it does in competitive free markets, to greater satisfaction by ensuring the preferences of diverse individuals are met. A common, light regulatory system that focused on key outcome areas, with regular meaningful assessments, would be adequate to provide feedback to parents and students and to ensure that the public interest is served. Reduction in the number and type of regulations that prevent competition among suppliers of educational services, be they teachers or institutions, would enhance internal efficiency, so that choice could be extended at no additional cost.

There would be losers in such a choice-oriented reform. Some teachers might be paid less; some teachers and administrators might lose their jobs; some institutions might close. But more important are the winners: the students and parents. Our youth would be receiving a more satisfying education, and many

new teachers and administrators, who are now trapped outside the system, would be able to practice. In the language of economist J. A. Schumpeter, this is the "creative destruction" that necessarily takes place in any dynamic economic system.

In Ontario, my own estimate is that the change experienced in implementing more choice-oriented regulation and funding will be considerably less than some might imagine. A number of groups — Roman Catholics, Francophones, many public school supporters — are already receiving the education that they desire at public expense. Extension of choice would probably include the 10% to 20% that are marginal to or outside of the current system. Also, change could be introduced in stages, beginning with the inclusion of more institutions within the elementary and secondary education funding system — community colleges, established private schools, and the like. Implementation of the recommendations on teacher collective bargaining in the Paroian report (1996) could be the second stage. The third stage could be creation of new institutions such as charter schools or the creation of schools outside of an institution's geographic boundaries. If little Penetanguishene Protestant Separate School Board could open schools across the province, then many who find their own religious views not currently available within the Roman Catholic or public Systems could recapture an option foreclosed by court decisions in recent years.

It is probably neither desirable nor practicable to take all of these steps at once. What is important is to recognize is that loss of one ideal, that of a common school system that was home to all, is being replaced by a more powerful one, that of public system with a core curriculum that is offered by many different providers in order to ensure efficiency, effectiveness, and higher overall satisfaction with schooling.

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Table 1

Expenditures, Students, Teachers for Elementary and Secondary Education by Province, 1982-83 and 1994-95~

	Expenditure (\$million)		Students (thousands)		Teachers (thousands)	
	82-83	94-95	82-83	94-95	82-83	94-95
Nfld.	392	618	143	107	7.8	7.7
PET	75	129	26	24	1.4	1.3
N.S.	563	959	183	155	10.7	9.8
N.B.	487	788	150	129	7.8	7.8
Que.	5,120	7,950	1,170	1,052	71.7	64.7
Ont.	6,323	14,367	1,879	1,901	95.0	130.5
Man.	785	1,442	220	201	12.3	12.6
Sask.	773	1,178	211	195	11.2	10.5
Alta.	1,813	3,189	462	512	24.6	28.4
B.C.	2,062	4,119	532	592	28.2	33.7
Yukon		82	5	5	.3	.4
N.W.T.	137	289	13	16	.7	1.4
Overseas			3	.2	.2	.02
Total	18,529	35,138	4,996	4,889	271.8	308.9

Table 2

## Expenditures, Students, Teachers for Elementary and Secondary Education by

	Province, 1982-83 and 1994.95a (cont).					
	Exp. Per Pupil		Pupil-Teach.		1982 Avg. Sal.	
	(dollars) C		Ratio		(\$thousands)	
	82-83	84-95	82-83	94-95	Elem.	Sec.
Nfld.	2,746	5,794	18.3	13.9	29.4	32.7
P.E.I.	2,884	5,269	19.0	17.9	29.0	30.4
N.S.	3,080	6,202	17.0	15.8	33.2	35.6
N.B.	3,255	6,129	19.3	16.5	30.2	33.0
Que.	4,375	7,557	16.3	16.3	N.A.	N.A.
Ont.	3,365	7,556	19.8	14.6	34.4	39.3
Man.	3,562	7,181	17.8	16.0	33.2	36.4
Sask.	3,665	6,043	18.8	18.5	31.7	34.6
Alt&	3,923	6,222	18.8	18.0	N.A.	N.A.
B.C.	3,876	6,955	18.9	17.6	34.6	37.7
Yukon		15,754	18.8	12.0	40.2	43.7
N.W.T.	6,593	18,543	19.4	11.2	40.0	44.1
Total	3,709	7,187	18.4	18.3	33.6	37.8

- a) Sources: *Advance Statistics of Education~ 1984-85*, Statistics Canada, catalogue No.81-220. Tables 2, 3, 6, 11. *Education in Canada 1984*, Statistics Canada, Catalogue No.81-229, Table 37. Statistics Canada, "Advance Statistics", *Education Quarterly Review*, Fall 1995, 2(3): 8g-96. Statistics Canada, "Education at a Glance", *Education Quarterly Review*, Fall 1995, 2(3): 97-107.
- b) Estimate.
- c) Expenditures per pupil arc calculated by dividing total expenditure for public and private elementary and secondary education by the total number of students. Estimated expenditure per pupil for each province for publicly financed and operated schools is given for 1982 in the preliminary figures given in *Financial Statistics of Education, 1982-83*, Statistics Canada, Catalogue No.81-208. For the provinces, they are as follows:  
 Newfoundland, \$2,435; P.E.I., \$2,440; Nova Scotia, \$2,671; New Brunswick, \$2,487; Quebec, \$4,357; Ontario \$3,233; Manitoba \$3,084; Saskatchewan, \$3,075; Alberta, \$3,300; and British Columbia, \$3,502.

Table 3

School Board Expenditures by Function, 1992					
Function	Expenditure (\$1000s) 1992	Percentage Op.or Cap		Percentage Overall	
		1981	1992	1.981	1992
Teachers salaries	18,458,125	65.8	66.5	60.5	61.1
Instructional supplies	698,708	2.7	2.5	2.4	2.3
Administration	2,182,551	7.2	7.9	6.6	7.2
Conveyance	1,513,361	5.5	5.5	5.0	5.0
Plant operation	3,076,977	12.7	11.1	11.7	10.2
Other	1,823,586	6.1	6.6	5.6	6.0
Total operating exp.	27,753,578	100.0	100.0	91.9	91.9
Capital outlay	1,199,974	28.0	49.1	2.3	4.0
Debt charges	1,244,236	72.0	50.9	5.8	4.1
Total capital exp.	2,444,210	100.0	100.0	8.1	8.1
Total expenditures	30,197,788			100.0	100.0

Source: *Financial Statistics of Education 1981-82*, Statistics Canada, Catalogue No.81-208, Table 8. Statistics Canada, "Data Availability Announcements: School Board Revenues and Expenditures, 1992", *Education Quarterly Review*~ Spring 1995, 2 (1):69-73.