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Universities, Liberal Education, and the Labour Market: Trends and Prospects

by

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Universities, Liberal Education, and the Labour Market: Trends and Prospects [1]

Introduction

The humanities, the social sciences and the fine arts - the core of liberal education - are at risk in Canadian universities, and the danger arises largely from the forced reorientation of higher education to assumed market needs. Unless politicians, educators and business leaders quickly rethink current trends, they may turn universities into little more than ineffective appendages of economic policy, and Canadian cultural life will be irreparably damaged. This paper attempts to explain why and how such policy shifts are occurring; drawing from recent and previously unreported census data, it challenges the argument that liberal education is a poor economic investment; and it points especially to the cultural and intellectual value of the liberal arts. Because so many Canadians from increasingly diverse backgrounds now attend university, large numbers of citizens - not merely those from traditional elites - will be affected by the narrowing of educational parameters at all levels of the school system. In the wake of such a transformation, society may well be the poorer.

The Context of Change

Universities have struggled in the past, but as Axelrod has observed, “recent funding cuts appear to have been accompanied by an apparent sea change in public policy. The principle of ample public funding to relatively autonomous universities, which enabled a diverse academic curricula - including the liberal arts - to grow and thrive, is in question. The doctrines of globalization, privatization, institutional competition, market-driven programming, and user-pay fee schedules are now pushing at the gates of higher learning” (Axelrod, 1998). Increasingly, policy makers and business leaders favour what Sheila Slaughter and Larry Leslie (1997) call “academic capitalism.” As Kjell Rubenson notes (1999), the policy focus increasingly is on the “exchange value” of education. In this world students pay a far higher portion of university costs, corporations play a growing role in shaping university policy, university funding is tied more and more to graduate employment “outcomes”, research support from the public and private sector is driven increasingly by business and high technology needs, and faculty entrepreneurialism and private universities are fostered.

For Peter Godsoe, CEO of Scotiabank, these types of polices are both desirable and inevitable. “Our university system will see a period of rationalization over the next decade; overlapping programs must be eliminated or merged, and greater efficiencies in program delivery and in administration will have to be found and developed. We need to unbundle our funding and allow universities to compete for research grants; we need to tolerate variation in tuition fees to promote institutional excellence; and we need to permit private

institutions to play a role in our university system. Let the market, not the government, determine which universities succeed and where our centres of excellence are." (Godsoe, 1998). In late 1997, Premier Mike Harris of Ontario questioned the "surplus" number of university programs in fields such as geography and sociology, and his government's April 1998 Throne Speech signalled its intention to tie provincial funding for higher education to the employment experiences of university graduates, a practice already initiated in Alberta. As the National Post's John Ibbitson bleakly predicted: "The autonomous liberal-arts university is in its last days. Welcome the provincially controlled, market-sensitive, advanced polytechnic that will replace it" (Ibbitson, 1999).

The writing is perhaps already on the wall across the continent. As we note later, enrolments in the liberal arts remained relatively stable in Canada throughout the 1980s and mid- 1990s. But in the fall of 1998, the registrations in liberal arts programs in Ontario universities fell by more than 17 per cent (York University, 1999). The United States, where Canadian trends are often foreshadowed, witnessed a steady erosion of liberal education over the past three decades. Two authors who traced these developments conclude: "Past declines of the humanities were changes in degree. In 1998, with weakened faculties and less well prepared students, we face an imminent, dangerous change in kind. As a society, we seem to be saying that the more we expand the number of students enrolled in college, the less important it is for them to study the humanities" (Engell and Dangerfield, 1998). A recent American study sponsored by liberal arts colleges found that "the liberal arts are neither understood well nor held in high esteem by a critical segment of society" (Hersh, 1999).

Why should anyone be concerned about these trends? Isn't the attempt to reap higher investments from an efficient university system economically rational and politically defensible? If students are unlikely to obtain good jobs when they graduate, shouldn't they be discouraged from enrolling in those programs that appear to offer substandard employment prospects? Shouldn't funding be directed away from the humanities, the social sciences and the fine arts to more market-worthy programs such as business, computer science, engineering, and various high technology programs? We question these assumptions and conclusions, and argue that not only do the liberal arts pay off, but that their demise would do critical damage to Canadian social and intellectual life.

The Economic Value of Liberal Education

An important source of long term information regarding the economic value of a university education and, more specifically of liberal education, is the Canadian Census. This paper draws on micro-data files from the Canadian Census, 1971-1996, to explore these issues. The data analyses consist of two major parts. The first identifies relationships between educational attainment and labour market outcomes from 1971-1996 and

provides a long term perspective on changes that have occurred. The second part explores the labour market outcomes of university graduates in liberal education (e.g. Social Sciences, Humanities and Fine Arts) and other fields of study.[2]

Educational Attainment and Labour Market Outcomes, 1971-1996

An examination of the census years, 1971 to 1996, reveals that university graduates maintained an advantaged position with respect to unemployment rates, displaying generally lower rates than high school graduates and non-completers, as indicated in Table 1. Moreover, gaps in unemployment rates tended to be wider between high school and university graduates. Taking 25-29 year- olds as an example, the unemployment rates in 1971 were 6.6 percent for high school and 5.8 percent for university graduates, with a gap of 0 .8 percent.

Table 1. Unemployment and Educational Attainment, 1971-1996

Year	1971	1981	1986	1991	1996
18-24 Year Olds					
High school noncompleters	15.9%	20.1	25.3	21.8	21.7
High school graduates	12.5	13.6	16.1	13.2	13.2
Post-sec noncompleters	16.3	17.2	18.2	15.9	20.7
Post-sec certificate/diploma	15.4	13.7	15.3	13.4	13.3
University graduates	11.6	15.4	15.4	13.0	16.1
Average	14.4	16.5	18.9	15.8	17.4
25-29 Year Olds					
High school noncompleters	10	12.8	17.8	19.1	20.0
High school graduates	6.6	8.8	10.9	11.9	11.7
Post-sec noncompleters	8.5	9.6	13.0	12.9	12.6
Post-sec certificate/diploma	6.5	7.7	11.1	9.6	10.1
University graduates	5.8	6.4	8.8	8.0	7.5
Average	8.4	9.1	12.5	11.9	11.3
30 Year Olds and Up					
High school noncompleters	8.1	7.7	11.1	12.0	12.8
High school graduates	6.0	5.9	8.3	8.0	7.9
Post-sec noncompleters	5.2	5.8	8.9	8.8	8.5
Post-sec certificate/diploma	6.2	5.0	8.1	7.5	7.6
University graduates	3.2	3.5	5.2	4.8	4.9
Average	7.3	6.1	8.7	8.4	8.2

The same age cohort in 1996 had unemployment rates of 11.7 percent for high school and 7.5 percent for university graduates, with a gap of 4.2 percent. This suggests that compared to Canadians acquiring either lower levels of education or other types of post-secondary education (e.g. certificates/diplomas), university graduates improved their

employment security from 1971 to 1996. Furthermore, with their passage through the life course and the increased employment experiences this brings, university graduates showed a stronger capacity than high school graduates and Canadians with post-secondary certificates and diplomas to reduce employment insecurity.

Since 1981, university graduates, aged 25-29, consistently entered professional and managerial positions at a rate that was relatively stable, ranging from 62.2 to 65.1 percent, in the census years 1981 to 1996. It is important to note, however, that in 1971 the proportion entering professional and managerial positions was 81.9 percent-- substantially higher than the figures for subsequent decades. This significant decrease paralleled the substantial increases in university enrolments and the recognition by Canadians in the 1960s that Canada should strive to be more egalitarian in terms of broadening the accessibility of higher education to a wider spectrum of society (Anisef and Okihiro, 1982). We will return to the issue of accessibility and liberal education later in this paper.

Table 2. The Proportion of Professional/Managerial Occupation By Educational Attainment, Aged 25-29, 1971-1996

Year	1971	1981	1986	1991	1996
Educational Attainment					
High School Graduates	29	9.9	10.0	11.5	14.8
Post-Sec Certificate/Diploma	57.2	30.7	26.7	28.4	26.2
University Graduates	81.9	65.1	63.5	62.3	62.2

These findings also reflected the emergence in recent decades of a so-called “knowledge-based” economy, whose ability to generate high level employment has not kept pace with the growing levels of highly educated people. Thus, many traditional occupations classified as non-professional have been filled by university graduates, resulting in a mismatch or underemployment phenomenon (Anisef et al., 1996; Livingstone, 1999, chapter 2). Nevertheless, compared to high school, college, and trade-vocational graduates, university graduates continued to hold the highest proportion of professional/ managerial occupations.

While it is conventional to use constant dollars to adjust for the inflation of earnings over time, this paper relies on earning ratios calculated using 25-29 year-old university graduates as a base in order to explore the earning power of different levels and types of education. Earnings ratios have the advantage of providing an easy method of comparing and contrasting earning power across time and across levels and types of education. Table 3 reveals a positive correlation between educational attainment and earnings ratios.

By way of illustration, if a university graduate in the 25-29 year old cohort earned $1 in 1996, then a high school non-completer and a high school graduate would have earned 54 cents and 76 cents, respectively. Moreover, and similar to our findings with respect to

unemployment, the income gaps between these educational groupings widened from 1971 to 1996. Thus, if a university graduate earned $1 in 1971, a high school graduate would have netted 84 cents. In 1996, the same high school graduate would have earned 76 cents or 8 cents less than her counterpart in 1971. Table 3 also reveals that for university graduates 18-24, the earnings ratio proved stable from 1971 to 1996, with a slight dip in 1996. However, for university graduates older than 30, the census information shows a substantial decline in earnings ratios to 1991 and, in 1996, a return to the 1981 level.

Table 3. Earning Ratio Based on 25-29 Year Olds University Grads, 1971-1991

Year	1971	1981	1986	1991	1996
18-24 Year Olds					
High school noncompleters	0.46	0.49	0.33	0.31	0.25
High school graduates	0.44	0.54	0.43	0.42	0.36
Post-sec noncompleters	0.34	0.42	0.32	0.34	0.30
Post-sec certificate/diploma	0.35	0.60	0.52	0.55	0.50
University graduates	0.47	0.48	0.44	0.44	0.41
25-29 Year Olds					
High school noncompleters	0.72	0.75	0.60	0.57	0.54
High school graduates	0.84	0.87	0.78	0.76	0.76
Post-sec noncompleters	0.86	0.86	0.78	0.76	0.75
Post-sec certificate/diploma	0.82	0.94	0.91	0.91	0.92
University graduates	1.00	1.00	1.00	1.00	1.00
30 Year Olds and Up					
High school noncompleters	0.79	0.87	0.45	0.44	0.45
High school graduates	1.00	1.07	0.76	0.81	0.82
Post-sec noncompleters	1.14	1.10	0.87	0.84	0.90
Post-sec certificate/diploma	1.16	1.13	0.96	0.99	1.07
University graduates	1.81	1.55	1.41	1.38	1.53

If we consider all three age cohorts, the earnings ratios tended to increase as age increased. For instance, if a university graduate in the 25-29 age cohort earned $1 in 1971, then her counterpart in the 18-24 age cohort would have earned 47 cents and a university graduate 30 and up, $1.81. This analysis of earning ratios by educational attainment underscored the labour market value of a university education.

Liberal Education and Labour Market Outcomes, 1971 to 1996

The economic value of a university education was well documented in the previous section but leaves unanswered the question framed at the outset of this paper: what is the economic value in Canada of a liberal arts education itself? This section explores the link between graduates' fields of study and their labour market outcomes. The focus of comparison is between university graduates who studied fine arts, humanities, and social

sciences and those graduates who concentrated their studies in fields such as education, commerce, engineering, nursing and other health professions and math/physical sciences.

Table 4 illustrates that enrolments in almost all fields of study[3] between 1986 and 1996 remained relatively stable, though there were some shifts in study patterns, and as we noted earlier, the proportion of students enrolling in the liberal arts in the late 1990s declined significantly in Ontario.

Table 4. Fields of Study Among University Graduates, 1986-1996

Year	1986			1991			1996		
Sex	Total	Male	Female	Total	Male	Female	Total	Male	Female
All University Graduates									
Education	**18.7**	11.1	27.9	**20.2**	12.5	28.7	**19.1**	11.9	26.5
Fine arts	**2.6**	1.7	3.7	**2.7**	1.9	3.6	**2.7**	1.9	3.5
Humanities	**13.7**	11.4	16.5	**12.1**	10.3	14.1	**11.5**	9.9	13.1
Social sciences	**17.3**	17.2	17.4	**16.9**	16.4	17.5	**18.1**	17.0	19.3
Commerce	**15.0**	19.8	9.2	**16.0**	20.4	11.2	**16.5**	20.0	13.0
Agriculture/biology	**5.7**	5.6	5.8	**4.7**	4.7	4.7	**4.8**	4.8	4.9
Engineering	**9.7**	16.6	1.3	**9.9**	17.3	1.8	**10.3**	17.8	2.6
Nursing	**3.9**	.3	8.2	**4**	.3	8.1	**3.5**	.3	6.8
Other health profession	**6.2**	6.6	5.7	**6.4**	6.7	6.2	**6.2**	6.4	5.9
Math/physical sciences	**7.3**	9.7	4.3	**7**	9.6	4.1	**7.3**	10.1	4.4
25-29 Year Olds									
Education	**14.1**	7.4	21.0	**13.3**	7	19.2	**14.3**	8	19.6
Fine arts	**3.5**	2.4	4.6	**2.8**	2	3.6	**2.9**	2.5	3.2
Humanities	**11.1**	8.9	13.3	**10.5**	9.2	11.6	**11.7**	10.6	12.6
Social sciences	**19.8**	18.2	21.5	**20.5**	18.7	22.2	**22.4**	20.3	24.2
Commerce	**17.4**	22.0	12.7	**20.0**	23.2	17.1	**18.7**	21.4	16.6
Agriculture/biology	**7**	7	7	**5.2**	4.7	5.7	**5.1**	5.1	5.2
Engineering	**10.1**	17.9	2.1	**10.0**	17.5	3	**9.3**	15.9	3.8
Nursing	**3.1**	0.3	6.1	**2.7**	0.3	4.9	**2.3**	0.3	3.9
Other health profession	**5.9**	5	6.8	**6.1**	4.8	7.2	**5.6**	4.8	6.4
Math/physical sciences	**8.1**	11.1	4.9	**8.9**	13	5.6	**7.6**	11.1	4.6

Sources: Census of Canada, 1986-1996, Microdata Files

In 1986 (nation-wide), 13.7 percent of all university graduates claimed humanities as their field of study; this decreased to 11.5 percent in 1996. In 1986, 17.3 percent of

university graduates indicated the social sciences as their primary field of study and, by 1996, the proportion in the social sciences had increased to 18.1 percent. The proportions studying in agriculture and biology decreased slightly over a decade while those concentrating their studies in commerce and engineering steadily increased. Other fields (e.g. math/physical sciences) showed fluctuations from 1986-1996.

Table 4 also reveals gender segregation by field of study. Women still dominated in nursing and education, and comprised the majority of university graduates in fine arts, humanities, and the social sciences. In contrast, men were dominant in engineering, math and physical sciences and constituted the majority of graduates in commerce.

Table 5 provides unemployment rate information across fields of study for the most current census (1996) and illustrates that university graduates in both age cohorts experienced the lowest unemployment in comparison to high school non-completers, graduates and post-secondary certificate/diploma holders.

Table 5. Unemployment by Field of Study, 1996

Sex	Total	Women	Men	Total	Women	Men
	25-29 Year Olds			**30 Year Olds and Up**		
High school non-completers	**19.7**	20.8	19.1	**12.7**	12.5	12.9
High school graduates	**11.5**	12.2	10.9	**7.8**	7.8	7.8
Post-secondary certificate/diploma	**10**	9.7	10.4	**7.4**	7.4	7.3
University Graduates						
Education	**4.7**	4.3	5.6	**3.1**	3.4	2.5
Fine arts	**6.5**	4.3	9.6	**6.4**	6.6	6.0
Humanities	**9.4**	9.7	8.9	**6.0**	6.8	5.2
Social sciences	**7.9**	6.8	9.5	**4.5**	5.5	3.5
Commerce	**5.9**	4.8	7.0	**3.9**	5.0	3.3
Agriculture/biology	**6.9**	7.0	6.7	**4.8**	6.0	3.7
Engineering	**7.4**	8.5	7.1	**5.2**	10	4.6
Nursing	**4.4**	4.3	7.1	**3.6**	3.7	1.8
Other health profession	**5.7**	5.0	6.9	**3.1**	3.8	2.6
Math/physical sciences	**7.9**	8.5	7.5	**5.0**	5.1	4.9

Sources: Census of Canada, 1996, Microdata File.

Among university graduates in 25-29 age cohort, those in humanities had the highest unemployment rate (9.4%), while those in nursing had the lowest rate (4.4%). Social sciences (7.9%), engineering (7.4%), and math/physical sciences (7.9%) graduates displayed similar unemployment rates. In contrast, fine arts graduates had a slightly lower rate (6.5%) than the aforementioned non-liberal education graduates. Though there may have been a host of economic and other factors that influenced the unemployment rates of

graduates across different fields of study, the message conveyed by these findings is that there does not appear to be empirical justification for the belief that liberal fields of study lead graduates to higher levels of job insecurity than other fields. In examining the 30 and up age cohort, we found that the percentage gaps in unemployment across different fields of study actually narrowed, ranging from 3.1 percent for graduates in education and 'other health professions', to 6.4 percent in fine arts. Graduates in the social sciences had lower unemployment rates (4.5%) than engineering (5.2%) and math/physical sciences (5.0%) graduates. While we cannot conclude that graduates in liberal education fields had uniformly lower unemployment rates than other fields of study, the findings reported in Table 5 do not support the assumption that liberal education graduates experienced more negative labour market outcomes than non-liberal education graduates.

Table 6 (next page) shows that university graduates in 1996 were far more successful in entering either professional or managerial occupations whether they concentrated their studies in liberal arts or other fields of study. Thus, in examining those who were in the 25-29 year old cohort in 1996, we found that the highest proportion of non-university graduates obtaining professional/ managerial positions were post-secondary and diploma graduates (26.2%), with gender variations being negligible for this group. In contrast, the range across all fields of study among university graduates in the same age cohort was 46.9 percent (Humanities) and 88.4 percent (other health professions).

The magnitude of these differences was maintained when we inspected the 30 year and up category. Among liberal education graduates in the 25-29 age cohort, there was some variation in the proportion of professional/managerial ranging from 46.9 percent for humanities graduates to 56.3 percent for fine arts graduates. Gender variations within these fields of study were small except in the instance of fine arts where there was a 6.4 percent difference in favor of men. Generally speaking, however, occupational outcomes favoured graduates from non-liberal education fields for those in the 25-29 year old cohort, though there was a very strong variation – ranging from 50.4 percent for commerce graduates to 88.4 percent for other health professions. With respect to university graduates in the 30 and up cohort, graduates in all fields appear to have improved their employment prospects and increased their representation in professional/ managerial occupations. This improvement appeared especially strong for those in liberal education fields. Thus, fine arts graduates increased their profile by 14.8 percent to 71.1 percent; humanities graduates enhanced their representation by 20.8 percent, to 67.7 percent and social science graduates showed similar gains in representation, increasing from 49.0 percent to 68.7 percent.

Table 6. Proportion in Professional/Managerial Occupations by Field of Study, 1996

Sex	Total	Women	Men
25-29 Years Olds			
High school non-completers	7.3	7	7.4
High school graduates	14.8	13.7	15.7
Post-sec certificate/diploma	26.2	26.6	25.8
University Graduates			
Education	74	76.1	68.0
Fine arts	56.3	53.7	60.1
Humanities	46.9	47.3	46.3
Social science	49	48.5	49.6
Commerce	50.4	47.6	53.1
Agriculture/biology	58.2	61.0	54.9
Engineering	76.1	71.5	77.4
Nursing	78.8	79.4	68.8
Other health profession	88.4	89.0	87.2
Math/physical sciences	71.1	66.7	73.2
30 Year Olds and Up			
Sex	Total	Women	Men
High school non-completers	10.7	8.8	12.0
High school graduates	19.2	14.8	24.0
Post-sec certificate/diploma	32.7	34.0	31.6
University Graduates			
Education	80.9	79.1	84.4
Fine arts	71.1	68.3	75.9
Humanities	67.7	63.0	72.9
Social sciences	68.7	65.4	71.8
Commerce	63.0	52.3	68.7
Agriculture/biology	63.0	63.1	63.0
Engineering	77.8	67.7	78.9
Nursing	83.8	84.0	79.5
Other health profession	90.0	85.9	93.1
Math/physical sciences	77.8	70.2	80.5

Sources: Census of Canada, 1996, Microdata File

When we turned to an analysis of income by field of study in 1996, we found a strong correspondence between income and occupational attainment findings. Thus, the employment incomes of high school non-completers ($11,302), high school graduates ($15,827) and post-secondary certificate/diploma holders, aged 25-29, were generally and consistently lower than for all university graduates whatever their field of study, with some notable exceptions. High school graduates earned more than fine arts graduates ($13,017)

and post-secondary certificate/diploma graduates earned more than fine arts, humanities ($16,451) and agriculture/biology graduates ($17,159).

Table 7. Income by Field of Study, 1996

Sex	Total	Women	Men
25-29 Year Olds			
High school non-completers	11302	6619	15124
High school graduates	15827	11862	19689
Post-sec certificate/diploma	18652	15220	22595
University Graduates			
Education	20692	20446	21408
Fine arts	13017	11966	14618
Humanities	16451	16207	16799
Social sciences	19248	17745	21385
Commerce	25165	24614	25676
Agriculture/biology	17159	17000	17355
Engineering	25098	19422	26715
Nursing	23621	23895	19128
Other health profession	22925	23483	22027
Math/physical sciences	24021	22399	24822
30 Year Olds and Up			
Sex	Total	Women	Men
High school non-completers	9345	5277	14013
High school graduates	17998	12609	25324
Post-sec certificate/diploma	22204	16040	28178
University Graduates			
Education	29954	26155	37779
Fine arts	17761	15488	21898
Humanities	25940	22025	30667
Social sciences	32981	25797	39996
Commerce	39166	29126	44747
Agriculture/biology	27505	21020	33343
Engineering	39674	23085	41505
Nursing	26763	26511	32264
Other health profession	31910	27118	35685
Math/physical sciences	38314	28457	42138

Sources: Census of Canada, 1996, Microdata file (1995 constant dollar)

It is also important to note the gender differences in earnings with these differences being particularly pronounced among those obtaining lower levels of education. For example, among high school non-completers, men earned more than double ($15,124) the wages of women ($6,619); these gender differences were also quite significant among high school graduates and post-secondary certificate/diploma graduates. Among university graduates,

the only field in which women's earnings exceeded that of men was nursing. The previous table also shows that the proportion of women in nursing classified as professional/managerial was higher than that of men. Though earnings differences in favor of men were insignificant in some fields of study (e.g. humanities, agriculture/biology) most other fields, be they liberal or professional, showed employment income differences that favoured men over women. These advantages were significantly stronger among graduates who were in the 30 year and up age cohort. Indeed, the salary advantage of women in nursing reverses for this age group, with men earning substantially higher incomes than women. These gender differences are manifested across all fields of study.

False Economies

Notwithstanding the employment challenges faced by some university graduates - and as Livingstone (1999) contends, these should not be understated - the long-term rewards of a liberal arts education are evident from the previous analysis. Perhaps the least advantaged liberal-arts graduates were those from fine arts whose incomes, even for those over 30 years of age, were lower than those of high school graduates in the same age cohort (Table 7). Yet the overall contribution of arts and cultural activities to the Canadian economy was considerable. In 1992-93, these sectors employed 660,000 people "directly and indirectly", and contributed $23.8 billion to Canada's gross domestic product (Turbide, 1995). While many university graduates in these fields earned exceedingly modest incomes (owing in all likelihood to the short-term contract basis of such work), they encompassed the vibrant community of writers, performers and producers that enriched the country's cultural and artistic life, as well as its tourist industry.

The overall success of liberal arts graduates from the 1970s to the 1990s was especially significant given the uncertainty of economic life through that era. The 1980s began with a recession and ended with an economic boom. This was followed by a new recession in the early 1990s, which by the middle part of the decade, had begun to abate. While business spokespersons and politicians spoke with increasing assuredness about the needs of the new globalized, "knowledge" economy, and called for educators to respond more efficiently to these demands, their rhetoric was overly general, and they offered little in the way of proven education-labour market planning models (Livingstone, 1999, chap. 2).

Indeed, history has shown that "manpower planning", as it was known in the 1960s and 70s, was, to say the least, an inexact science. As economist Michael Skolnik noted, "the history of attempts by government to forecast needs for people for various types of skills does not fill one with confidence" (Lewington, 1998), a conclusion borne out by a series of faulty planning projections in the 1970s, including in such applied fields as engineering. An Ontario consultant's report in 1974 on the future of employment needs in engineering refuted the conclusions of a study on the same theme done only three years earlier.

"Examples of inaccurate and misleading forecasts are numerous, and it is difficult to assess the damage to national needs and economies created by such erroneous forecasts. Probably the most damaging results from erroneous surveys are on the careers of young people who believe implicitly in the accuracy of forecasts and proceed to make career decisions which may not be their preferred choice" (Advisory Committee, 1974).

Because employers "are typically concerned with short term results [rather] than longer term projections," forecasting on the basis of employer surveys is notoriously unreliable (Bouchard, 1998). A federal government survey of employment trends in the 1980s offered its conclusions tentatively, subject to the assumption that there would be "no change in the set of [economic] policies currently in place"(Labour Market Development in the 1980s). Policy shifts are usually unpredictable. Tax and expenditure reforms in the United States, changes in the regulatory environment, or in trade policy all bear on Canadian economic life, and in the long-term are unknowable. For example, the 1981 federal survey did not anticipate the adoption in 1989 of free trade policy with the United States, which the then governing Progressive Conservative Party had opposed earlier in the decade. The radical shift in employment prospects for teachers and nurses in Ontario in 1998-9 resulted from unanticipated government policy decisions in the health care and education sectors. Following years of surpluses in the teaching labour force, the Ontario College of Teachers predicted in November, 1998 that nearly one-quarter of the provinces teachers would retire over the next five years, creating dramatic shortages that were already beginning (Campbell, 1999). The productive, technology-rich, "knowledge-based" Asian nations were perceived by many in the early 1990s as educational and economic models worthy of emulation in North America and the west. Then, in the mid 1990s, these economies, unexpectedly, collapsed.

The reorientation of higher education to assumed market needs is based on the fallacious premise that universities are well equipped to anticipate the long-term, employment-generating sectors of the economy. That government and business economic projections have been notoriously faulty raises additional questions about the rationality of this premise. Nevertheless, supposedly flush with such information, universities are then expected to create new programs, and amend or abandon existing ones that are not sufficiently "productive." This model, employed by many community colleges and private training institutes, which change their courses on a frequent basis, is not suited to the university's purpose. The primary objective of university curricula is academic - to address problems intellectually in a probing, substantive manner. It takes years, if not decades, to build up a valuable scholarly literature in a new academic field. Programs can neither be established, nor should they be closed down, in response to ephemeral market pressures. As the next section argues, this is not to suggest that the liberal arts are static. Academic disciplines do change in response to emerging social and intellectual currents. But to attempt to employ university as mere instruments of capricious economic policy is to ensure disappointment for job seekers, and to impair the university's intellectual raison d'être.

The Cultural Value of Higher Education

The liberal arts have their roots in the intellectual culture of ancient Greece, and continue, at least ideally, to embrace its core values. These include the development of the whole person, the cultivation of character and citizenship, and the achievement in learning and living of balance and harmony. Over the centuries, educators have differed on how these lofty ends might be achieved; consequently, while retaining its fundamental goals, liberal education has been modified considerably (Rothblatt, 1993). To those who denigrate the humanities and social sciences for being trapped in a time-warp, and irrelevant to the concerns of the contemporary world, one can demonstrate in many ways the pertinence of liberal education to society's day-to-day concerns.

In literature, history and sociology courses, universities typically augment the study of ancient or "Eurocentric" texts with multicultural studies that analyse the lives and communities of visible and other minorities. Most disciplines in the arts now explore women's experiences - an indication of their growing participation in the university and their changing role in social and economic life. The very inclusion of such curricula has sparked heated debates among liberal arts educators about the nature of "essential" knowledge - a debate that reflects contemporary concerns about ethnic, racial and gender relations in the broader community (Bloom, 1987; Levine, 1996; Emberley, 1996). Unlike other institutions which have sometimes suppressed or avoided such discussions (many private corporations, for example) universities - admittedly often under duress - have engaged these issues.

Signifying other social and cultural changes, liberal education has become increasingly multi-disciplinary and inter-disciplinary. In the past generation, programs in such fields as mass communications studies, health and society, urban studies, and environmental studies, industrial relations and labour studies can be found in academic calendars. These subjects bring academic conceptions to bear on current social problems, frequently providing forums for critical reflection and policy development.

Furthermore, universities and colleges increasingly have recognized the virtue of permitting students to move more easily between these two educational sectors. A number of new collaborative programs in Ontario combine liberal education courses with applied studies, including a Bachelor of Liberal Science program in Environmental Science. Other programs, a number of which have applied, cooperative components, link college and university programs in communications, social work, and law (College-University Consortium Council, 1998).

More important, perhaps, than any particular course are the sets of skills that students are expected to derive from their studies. Those of us who teach in the liberal arts hope that the pursuit of knowledge for its own sake is inspiration enough for our students, and for

many, it is. As James O. Freedman, the president of Dartmouth College asserts, "A liberal education...stirs students to probe the mysteries of the natural world, to reflect on the rise and fall of cultures, to find meaning in the enduring achievements of Western and Eastern civilizations, and to consider ambiguities and arguable lessons of human history....Further, a liberal education encourages students to seek the affirmation of their most authentic selves. It sets in motion a process of critical examination and imaginative introspection that leads students towards personal definition. It helps students to develop an independent perspective for reflecting on the nature and the texture of their lives...More than any historical datum, any experimental result, or any textual explication, a liberal education conveys to students a sense of joy in learning - joy in participating in the life of the mind..." (Freedman, 1996: 2).

The practical skills that arts students learn have broad application - arguably more so than specialized technical knowledge which is the focus of much business, professional and scientific instruction. Typically, liberal educators require that students demonstrate the ability to think analytically, to question received wisdom, to express themselves clearly, orally and in writing, to apply different perspectives and theories to a text or to real-life situations, and to cultivate one's own philosophy and sense of values (Schneider and Shoenberg, 1998). We would not argue that all efforts to teach these skills are uniformly successful - there are "D" students and other malingerers in all disciplines - but if the university loses sight of this goal - the engagement of intellectual life in way that encourages the creation of an informed citizenry - then the core value of higher education is lost.

As George Sorger (1997), a biology professor from McMaster University argues, it is important to bring aspects of the arts more fully into professional and technical courses. "A university graduate needs to be aware of the ethical, social and cultural context of her work to avoid, at the very least, causing potential harm. An engineer who can design a cost-effective dam that can hold a mighty river, yet is unaware of the potential social and environmental consequences of building it, is dangerous." Similarly, teachers who are technically skilled but who lack an understanding of cultural difference, or of the potential impact of social stratification on students' performance - knowledge gained in various liberal arts subjects - will be pedagogically under-prepared. Doctors whose curricular studies have included ethics, community health, health and the environment, or the politics of health care may bring intellectual breadth, as well as specialized scientific knowledge, to the conduct of their practices.

Indeed, it would be difficult to identify a single profession or vocation that would not benefit from creative studies in the humanities and social sciences. As one graduate wrote, "The real value of a liberal arts education isn't apparent the day you graduate...The real value of your BA may not be apparent in one year, or even in five. It's over the course of a career - or, more likely, several different careers - that you come to appreciate its true value...At university, I learned to communicate clearly and concisely both orally and on

paper...I learned to read and listen critically, making me not only a better employee but also a more responsible citizen...I learned how to learn, how to acquire a body of knowledge or skill set, and to synthesize it with other ideas and knowledge. As a result, I've been able to work in a variety of fields, none for which I was specifically trained" (Morden, 1993). Ulrich Teichler (1996) explains that "higher education differs from the late stages of pre-career education in its critical and innovative functions. Graduates must be prepared not just to take on tasks and to apply existing rules, but they must also be capable and motivated to question established practices and to cope with unpredicted work tasks; that is they must also anticipate and press for innovations."

Though they are not always heeded by company recruitment officers, corporation CEO's have periodically called for the hiring of those trained in the liberal arts over the narrowly qualified business school graduate. As far back as 1959, the president of Imperial Oil praised liberal education for broadening students intellectual horizons, thereby making them especially valuable in the workforce. "Industry has found that it can train an educated man [sic], but it cannot necessarily educate the trained man [sic]" (Axelrod, 1982: 107). Leap to the 1990s, and Matthew Barrett, president of the Bank of Montreal, contends that "[It] is far more important that students graduate from university having read Dante, or the great historians of today and yesterday, than understanding the practice of double-entry accounting...Education should impart not fact, not training, not even skills above essential literary and numeracy, but rather the "cross-curriculum" abilities to reason, to imagine, to think laterally, and perhaps most important, to welcome learning as an essential part of life" (Frank, 1997).

Michael Useem points also to the applied value of liberal education in the global labour market. Corporations attempting to invest abroad require employees who can understand foreign languages, cultures, and environmental concerns. Domestic companies too need managers to "cultivate relations" with politicians and community leaders. Sensitivity to politics, religion and ethnic relations could well secure a company's presence and profitability (Useem, 1995; Scheetz and Stein-Roggenbuck, 1994). One might add that ordinary employees and union organizers would benefit from the same skills in their continuing attempts to represent workers' and community interests in the very places that companies invest.

We ought to be concerned, then, about the tendency of governments and cash-strapped universities to narrow higher education's functions to those activities deemed immediately profitable or merely market-worthy. As we have shown, the long-term employment benefits of liberal education provably "pay off", and in those cases where graduates do face a difficult time securing rewarding employment, universities are ill-equipped to anticipate short-term labour market needs, and ill-advised to reorder their curricula on the assumption that they can reliably predict the future of the economy. Most importantly, if the university does not provide a space for the unimpeded exploration of the world of

ideas, then what institution will? And, as we argue in the final section of the paper, the opportunity to participate in this endeavour should be available to the community at large.

Accessibility

Some still see the university as an elitist institution, and given its long history of catering to a select group of largely middle and upper class youth, this perception is understandable. But in recent years, particularly in Canada, this situation appears to have changed. It is still the case that students from affluent families, or families where parents have a post-secondary education university, are more likely than others to attend university. However, between 1982 and 1993, the participation rate in university of those in the population aged 18-24 rose from 12 per cent to 20 per cent. Canada and the United States have, by far, the highest participation rates in higher education in the world, and over the past 30 years, Canada's participation rate has increased more rapidly than that of the United States (Canadian Education Statistics Council, 1996); Statistics Canada, 1991)

This expansion is accounted for largely by the growing participation of women in higher education. Between 1975 and 1995, the number of men in universities increased by 25 per cent and that of women by 107 per cent. Women are now the majority of undergraduate students in Canada, and, more than men, they choose to study in the liberal arts disciplines (Canadian Association of University Teachers, 1997). Table 4 shows that in 1996 among university graduates of all ages, 64.8 percent of fine arts, 57.0 percent of humanities and 53.2 percent of social sciences graduates were women. Only the fields of education (69%) and nursing (95.8%) attract proportionately more women than these liberal education fields of study. De-emphasizing these subjects will thus target those areas in which women have the greatest involvement, perhaps causing many to lose interest in higher education, thus reversing the participation rate gains made in recent years.

With respect to socio-economic status, universities also appear to have become more accessible to a broader range of students. A 1994 survey of first year students at seven Canadian universities - Calgary, Toronto, Ryerson, King's College (at Western), Nipissing, Guelph and Brock - revealed that 23 per cent came from families where the annual income was less than $30,000, a further 25 per cent from families with incomes of $30,000 to $49,000, 25 per cent with family incomes of $50,000 to $74,000 and 25 per cent with incomes over $75,000. A 1994 survey at York University found that 47 per cent of the families of first-year students in the faculties of arts and science (some 80 per cent of all first year enrolments) had incomes under $50,000 (Gilbert et al., 1994: 44; O'Heron, 1997: 3-4). The median family income in Canada in 1994 was $48,091 (Canadian Social Trends, 1997: 31).

There is evidence, too, of a more culturally diverse student body, a diversity reflected in the growing presence of visible minorities in the population at large. From 1986 (when an item to measure visible minority status was first included in the Census) to 1996, the proportion of visible minorities increased from 6.4 per cent 11.5 per cent. However, these proportions vary considerably across Canada. For example, the 1996 Census revealed that 31.7 per cent of Toronto residents were visible minority members. With respect to higher education, only 65 per cent of the students entering the seven universities listed above defined themselves as "White." Some 19 per cent were East Asian, 6 per cent South Asian, 3 per cent South-east Asian, 2 per cent Black, 1 per cent North American Indian, and 4 per cent "Other". But the ethnic and racial makeup of students differed considerably by region. At the University of Victoria, only 10 per cent of entering students defined themselves as members of visible minorities (in 1992), whereas at York, some 25 per cent did (in 1993) (Gilbert et al, 1997: 44).

Table 8. Fields of Study and Ethnic Background among University Grads, 1986-96

Year	1986			1991			1996		
Ethnic Status	Total	Visible minority	Non-visible minority	Total	Visible minority	Non-visible minority	Total	Visible minority	Non-visible minority
All University Graduates									
Education	**18.7**	4.6	95.4	**20.2**	6.1	93.9	**19.1**	6.6	93.4
Fine arts	**2.6**	6.8	93.2	**2.7**	9.8	90.2	**2.7**	11.7	88.3
Humanities	**13.7**	7.5	92.5	**12.1**	10.9	89.1	**11.5**	12.8	87.2
Social sciences	**17.3**	8.3	91.7	**16.9**	11.6	88.4	**18.1**	13.1	86.9
Commerce	**15.0**	12.5	87.5	**16.0**	17.5	82.5	**16.5**	19.2	80.8
Agriculture/biology	**5.7**	12.4	87.6	**4.7**	14.9	85.1	**4.8**	18.0	82.0
Engineering	**9.7**	16.5	83.5	**9.9**	22.1	77.9	**10.3**	25.0	75.0
Nursing	**3.9**	10.3	89.7	**4.0**	12.6	87.4	**3.5**	15.4	84.6
Other health profession	**6.2**	14.6	85.4	**6.4**	18.3	81.7	**6.2**	20.1	79.9
Math/physical sciences	**7.3**	15.7	84.3	**7.0**	22.1	77.9	**7.3**	26.0	74.0
25-29 Year Olds									
Education	**14.1**	4.2	95.8	**13.3**	5.5	94.5	**14.3**	6.8	93.2
Fine arts	**3.5**	4.0	96.0	**2.8**	11.1	88.9	**2.9**	16.6	83.4
Humanities	**11.1**	6.8	93.2	**10.5**	11.1	88.9	**11.7**	14.2	85.8
Social sciences	**19.8**	8.1	91.9	**20.5**	12.2	87.8	**22.4**	15.0	85.0
Commerce	**17.4**	10.4	89.6	**20.0**	17.5	82.5	**18.7**	19.1	80.9
Agriculture/biology	**7.0**	9.3	90.7	**5.2**	16.1	83.9	**5.1**	22.2	77.8
Engineering	**10.1**	14.4	85.6	**10.0**	22.6	77.4	**9.3**	26.3	73.7
Nursing	**3.1**	10.0	90.0	**2.7**	9.7	90.3	**2.3**	20.1	79.9
Other health profession	**5.9**	13.7	86.3	**6.1**	20.7	79.3	**5.6**	25.3	74.7
Math/physical sciences	**8.1**	17.9	82.1	**8.9**	24.5	75.5	**7.6**	30.8	69.2

Sources: Census of Canada, 1986-1996, Microdata Files

Note: % of visible minority across censuses: 1986: **6.4%,** 1991: **9.3%,** 1996: **11.5%**

Table 8 illustrates the way in which the increased presence of visible minorities in the population from 1986 to 1996 was reflected among the different fields of study selected by university students. Visible minority students showed particular interest in the maths

and physical sciences, increasing their percentages in these fields from 15.7 to 26 between 1986 and 1996 - the latter figure being more than double the percentage (11.5) of visible minority Canadians in the population at large. This remains true for 25-29 year old university graduates who showed strong interest in math/physical sciences, health, nursing and engineering. But in that cohort, the proportion of visible minorities in **all** fields, including the liberal arts (education excepted) exceeded their percentage in the population at large. Thus, in 1996, 16.6 per cent of fine arts, 14.2 per cent of humanities, and 15 per cent of social science graduates claimed visible minority status. Clearly, among visible minority groups, the interest in all fields of university education, including the liberal arts, had grown during the 1990s.

Unfortunately, rising tuition fees and exploding student debts - additional features of the policy of privatizing university funding - threaten to counteract the democratization of participation rates in higher education. Between 1990 and 1995, tuition fees rose by an average of 62 per cent in Canadian universities. In 1997-98, they increased by another 9 per cent. And a 1996 federal task force on youth estimated that by 1998, students would leave university with average debts of $25,000, up from $8,700 in 1991. The Council of Ontario Universities recently reported that the default rate on loans for post-secondary education students was 22 per cent in 1998. Notably, the default rate for college students was more than 25 per cent, double the rate for university students. Those from private vocational schools had a default rate of 34.5 per cent, indicating, in all likelihood, that a university education, even in difficult times, leads more assuredly than other forms of higher education to employment opportunities. (Council of Ontario Universities, 1999). That so many university students rely on student loans (some 40 per cent in Ontario) is a further indication of the relatively modest incomes of even middle class Ontario families.

Do soaring fees and debts affect public views about access to higher education? The evidence is mixed, but ponder these 1997 survey results issued by the Maritime Provinces Commission on Higher Education, in which “57 per cent of [students’] parents earning less than $30,000 said that they strongly or somewhat agreed when asked whether they would have second thoughts about their children continuing their studies, given the amount of loans requires and the time taken to pay them off - compared to 29 per cent of parents earning more than $50,000" (Lewington, 1997). At some point, especially in a society with such a long tradition of publicly funded schooling, the uncharacteristically rapid rise of fees and loans is likely to deter the enrolment of many of the least affluent youth, yet another cost of the growing privatization of the funding of higher education.

Conclusion

In recent years, globalization, privatization, deficit-cutting, and the supposed needs of a “knowledge-based” market economy have driven governments to reshape their approaches to higher education. Funding now privileges the market-oriented, high-

technology fields of study, in which students, too, are showing growing interest. But such policies and choices are based on the belief that liberal education has little investment value for the individual and society.

We have challenged this assumption and the misguidedness of the policies on which it is based. Overall, liberal arts graduates have done well in the world of employment. To the degree that they and other university graduates have encountered under-employment - and this reality for many cannot be denied - the problem will not be fixed by marginalizing liberal education within the university curricula in favour of more “applied” subjects. We argue that the universities’ ability to anticipate market needs is no better than that of government or business. We contend, too, that liberal education is the core of higher learning - in good economic times and bad - and in its effort to prepare people for employment, the university must not be permitted to raze its own intellectual and cultural foundation. In any event, the liberal arts are not static; they continue to be reformed, but less in response to ephemeral market trends than on the basis of intellectual merit. As employers themselves have periodically asserted, by broadening the knowledge base of employees, liberal education can enhance the abilities of graduates in applied and professional fields.

Historically, both the university and the liberal arts were available to a privileged minority, and the antipathy they sometimes elicit undoubtedly arises from this tradition of elitism. But higher education is now more broadly accessible than ever to women, minority groups, and those of modest means. They are entitled to reap the intellectual and material rewards that university education offers. It remains to be seen whether the “privatizing” of university funding, and the large personal debts that this requires, will undermine the accessibility gains of the last two decades.

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2. Other researchers have recently employed census micro data files to analyse the employability of university graduates in various fields of study and have also examined trends with respect to employment outcomes. See Allen (1998); Guppy and Davies (1998), Paju (1997); Institute for Social Research, 1998). All of these studies demonstrate the economic value of a university education (individually and socially), including of the liberal arts. Our paper extends the previous analyses by including the most recent (1996) census. It also consistently employs specific age cohorts across the 1971-1996 censuses to provide a picture of life course changes by educational level and type, with respect to different labour market outcomes. Finally, the status of visible minorities from the 1986, 1991 and 1996 censuses is introduced to provide relevant information regarding their participation in different fields of study.

3. Field of study was not measured prior to the 1986 census.

References

Advisory Committee on Academic Planning. (1974). Chemical engineering, report no. 11, A-7., cited in Paul Axelrod. (1982). *Scholars and dollars: politics, economics and the universities of Ontario, 1945-1980*. Toronto. University of Toronto Press, 45-7.

Allen, Robert C. (1998). "The employability of university graduates in the humanities, social sciences and education: recent statistical evidence." Unpublished

Anisef, Paul and Norman Okihiro. (1982). *Losers and winners*. Toronto: Butterworths.

Anisef, Paul, Fred Ashbury, Katherine Bischoping, Zeng Lin. (1996). "Post-secondary education and underemployment in a longitudinal study of Ontario baby-boomers." *Higher Education Policy* 9, no. 2: 159-174.

Axelrod. Paul. (1998). "Challenges to liberal education in an age of uncertainty." *Historical Studies in Education*, 10. nos. 1-2: 1-19.

Bloom, Allen. (1987). *The closing of the American mind*. New York: Simon and Schuster.

Bouchard, Paul. (1998). "Training and work: some myths about human capital." In Sue Scott, Bruce Spencer and Alan M. Thomas, eds. *Learning for life: Canadian readings in Adult Education. Toronto*. Thompson Educational Publishers.

Campbell, Murray. (1999). "Hot new jobs: Teachers, nurses and bureaucrats." *Globe and Mail*, January 23, A1, A11.

Canadian Education Statistics Council. (1991). *A statistical portrait of education at the university level.* Ottawa: Statistics Canada. September.

Canadian Association of University Teachers. (1997). *Bulletin Online*. Nov., 44, # 9.

Canadian Social Trends. (1997). no. 44, (Spring): 31.

Census of Canada, Microdata, 1971-1996.

College-University Consortium Council (1998). *Report of the college-university consortium council, 1996-1998.* Submitted to the Minister of Education and Training. Toronto: Council of Ontario Universities

Emberley, Peter. (1996). *Zero tolerance: Hot button politics in Canadian universities*. Toronto: Penguin Books.

Engell, James and Anthony Dangerfield (1998). “Humanities in the age of money.” *Harvard Magazine*.

Frank, Tema. (1997). “What do employers want?” *University Affairs*, May.

Freedman, James O. (1996). *Idealism and liberal education*. Ann Arbor: University of Michigan Press.

Gilbert Sid, Judy Chapman, Peter Dietsche, Paul Grayson and John N. Gardner. (1997). *From best intentions to best practices: The first-year experience in Canadian postsecondary education*. Columbia, S.C. (University of South Carolina).

Godsoe, P.C. (1996). “Universities must excel despite less funding.” *Canadian Speeches*, no. 1: 1-6 (Internet).

Guppy, Neil and Scott Davies. (1998). *Education in Canada: Recent trends and future challenges.* Ottawa: Minister of Industry.

Hersh, Richard H. (1997). “Intentions and perceptions: a national survey of public attitudes towards liberal arts education.” *Change* 29, no. 2 (March-April).

Ibbitson, John. (1999). “Colleges, universities could be turned into job factories.” *National Post*, April 26.

Institute for Social Research, York University. (1998). “Arts graduates get jobs.” *Student experience study, bulletin 30*. March 15.

Labour Market Development in the 1980s. (1981). *A report of the task force on labour market development*, prepared for the Minister of Employment and Immigration. Ottawa: Employment and Immigration Canada, 45-7.

Levine, Lawrence W. (1996). *The opening of the American mind: Canons, culture and history*. Boston: Beacon Press.

Lewington, Jennifer. (1998). “Ontario universities weary of Tory high-tech plan.” *Globe and Mail*, June 6.

Lewington, Jennifer. (1997). “Students find cost barrier to university.” *Globe and Mail*, Nov. 17, A-7

Livingstone, D.W. (1999). *The education-jobs gap: Underemployment or economic democracy*. Toronto. Garamond Press.

Morden, Pat. (1993). “Degrees of usefulness.” *Globe and Mail*, January 28.

O’Heron, Herb. (1997). “Different students, different needs.” Ottawa: Association of Universities and Colleges of Canada, Research Files, 2 no. 2 (November).

Paju, Michael. (1997). “The class of 1990 revisited: Report of the 1995 follow-up survey of 1990 graduates.” *Education Quarterly Review* 4, no. 4: 9-29.

Rothblatt, Sheldon. (1993). “The limbs of Osiris: Liberal education in the English-speaking world.” In Sheldon Rothblatt and Bjorn Wittrock, eds. *The European and American university since 1800: Historical and sociological essays*. Cambridge: Cambridge University Press, 19-73.

Rubenson, Kjell. (1997). “What is driving the policy formation on education and training?” WRNET 3rd Annual Conference: What Skills Matter in the Economy? February 26-27.

Scheetz. L. Patrick and Susan Stein-Roggenbuck. (1994). “Learn to market your liberal arts degree for a lifetime career.” In *Black Collegian*. 25, no. 1 (October).

Schneider, Carol and Robert Shoenberg. (1998). “Contemporary understandings of liberal education.” In *Liberal Education*, Spring: 32-37.

Slaughter Sheila and Larry L. Leslie. (1997). *Academic capitalism: policies and the entrepreneurial university.* Baltimore: The Johns Hopkins University Press.

Sorger, George. (1997). Quoted in *Toronto Star*, Dec. 15.

Statistics Canada. (1991). *Profile of higher education in Canada*. Ottawa: Ministry of Supply and Services.

Teichler, Ulrich. (1996). “Higher education and new socio-economic challenges in Europe.” In Arnold Burgen, ed., *Goals and purposes of higher education in the 21st century*. Jessica Kingsley Publishers, Higher Education Policy Series, 32.

Turbide, Diane. (1995). “Assessing the damage.” *Maclean’s*. March 20: 78

Useem, Michael. (1995). “Corporate restructuring and liberal learning.” In *Liberal Education*, Winter: 18-23.

York University. (1999). Dean of Arts Interim report on academic planning, Appendix E. February 24.