

# The University and Manpower Planning:

## A Re-Examination of the Issues in the Light of Changing Economic Conditions and New Developments in Labour Market Information

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### ABSTRACT

*The search for effective public policy approaches for relating higher education to the needs of the labour market was a subject of much attention in the 1960s and early 1970s, and the verdict was largely against centralized comprehensive manpower planning. This paper re-examines the role of manpower planning in the university sector, in light of new economic imperatives and new data production initiatives by Employment and Immigration Canada. It concludes by rejecting what is conventionally referred to as manpower planning, and offering, instead, a set of guidelines for improving the linkage between universities and the labour market within the framework of existing institutional and policy structures.*

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### RÉSUMÉ

*On s'est beaucoup préoccupé pendant les années 60 et au début des années 70 de trouver des politiques efficaces pour mieux adapter le monde de l'éducation supérieure aux besoins du marché du travail; à cette époque on s'est prononcé en grande partie contre une planification centralisée et globale de l'emploi. Cet article réexamine le rôle de la planification de l'emploi dans le secteur universitaire à la lumière des nouveaux impératifs économiques et des nouvelles initiatives de production de données de la part d'Emploi et Immigration Canada. L'auteur en arrive à la conclusion qu'il faut rejeter ce que l'on appelle communément la planification de l'emploi pour offrir à la place un ensemble de directives pour améliorer les liens entre les universités et le marché du travail dans le cadre des structures politiques et institutionnelles existantes.*

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'The Greatest of God's dispensations is that no one can prophesy the future in detail.'

— George Grant

The first few years of the 1980s have been marked by a renewed interest in manpower planning in Canada. The need for more effective manpower planning has been emphasized in three major reports emanating from the Government of Canada, as well as in a number of less publicized studies (Canada, 1981; Employment and Immigration Canada, 1981; Economic Council of Canada, 1982). While there is no generally accepted definition of manpower planning, the term is widely used to connote attempts through public policy to bring about a more efficient matching of the skill mix of labour supply with that of labour demand (Holland and Skolnik, 1975). Serious efforts at manpower planning are generally motivated by a concern over existing or projected shortages of particular types of educated or skilled labour, and policy initiatives are generally taken in a medium to long term perspective. On the other hand, policies which are directed toward increasing the level of employment demand are generally referred to as employment policies rather than manpower policies, and the corresponding planning is referred to as employment planning rather than manpower planning.

### **Current Interest in Manpower Planning**

It may seem surprising to witness so much attention being given to manpower planning at a time of unprecedented levels of unemployment. Four explanations can be given for this seeming paradox. First, in spite of the high levels of unemployment which exist at present, there continue to be reports of vacancies in certain occupations, particularly those requiring high level technical training. The filling of such vacancies may not reduce unemployment substantially, but political and moral tolerance of job vacancies is understandably low at a time of high unemployment. Indeed, the simultaneous occurrence of unemployment and job vacancies, in addition to challenging neo-classical labour market theory (Skolnik and Siddiqui, 1976), appears to provide strong justification for government intervention in labour markets. A related argument is that while the number of vacancies may be small, there are probably many people working at jobs for which they do not have the optimal training. Inefficiencies in the match between the workers and the skills required for their jobs impairs Canadian productivity and competitiveness. As competitiveness has become one of the major concerns of economic policy-makers, one can expect that any factors which could be identified as inhibiting competitiveness would become a target for various public policy initiatives.

A second factor accounting for the renewed interest in manpower planning has to do with anticipated economic recovery. The general consensus of economists and business forecasters is that the current recession will end in one and a half to three years, to be followed by an upturn in economic activity. Economic recovery following previous recessions sometimes has been thwarted by manpower bottlenecks, and there is concern that the next period of recovery not be so thwarted.

A third and probably the most important factor accounting for the current interest in manpower planning is anticipated technological change, and its implications for the occupational structure of the Canadian labour force. It is widely believed that developments in the microelectronics, computer, and other high technology fields will bring about an enormous transformation in the world of work and that planning for this transformation is vital (Science Council of Canada, 1980, 1982; Labour Canada, 1982). Debate rages on regarding the magnitude of this transformation and whether changes in technology will destroy more jobs than they will create. Anticipation of rapid technological change significantly reinforces the concerns about competitiveness noted above. Unless Canada anticipates correctly the skill needs required by new technology and plans for the education and training of workers accordingly, it is believed that the competitive position of this country will deteriorate appreciably (Roth, 1983; for similar arguments in the U.S. see Botkin et al., 1982). Also, failure to plan effectively for technological change could add to unemployment (although even with effective planning for technological change, substantial unemployment might still result from it).

Finally, the substantial volume of public funds invested in education and training of workers and future workers has itself given rise to increased interest in manpower planning. Given the various pressures on the public budget and erosion of the real tax base, there is increased pressure for tangible economic justification for educational expenditures and for accountability in the operation of institutions and programs. To be able to demonstrate that education and training are meeting existing or projected manpower needs is today the most persuasive form of such justification.

Thus far, the principal manifestations of the current interest in, and orientation of, manpower planning have been in the realm of adult training under auspices of Employment and Immigration Canada, and increasingly in the spectrum of programs operated by Canadian community colleges. The significant piece of legislation in this connection is the National Training Act, which was enacted by the Parliament of Canada during the Summer, 1982. The most significant feature of the NTA, which is the successor legislation to the Adult Occupational Training Act of 1967, is that it empowers the government to concentrate financial assistance substantially on nationally designed occupations. These are occupations where the training of additional workers is deemed to be of critical importance to the economic development of the nation. It is anticipated that after the first five years of operation of the NTA, 50 per cent of operating support by the Government of Canada would be for such designated occupations, and unless there was a substantial increase in federal government expenditures on training, there would necessarily be a significant reduction in financial support for training in other fields (Skolnik, 1982). The National Training Act also contains explicit provision for federal government purchases of training from agents other than community colleges, making it clear that the primary purpose of federal government expenditures on training is to meet the nation's needs for skilled manpower, not to support public training institutions.

The emphasis on meeting manpower needs which is reflected most strikingly in the Dodge Report and in the National Training Act, is not entirely new. At least since the Simonet Report (Ontario, 1963), numerous policy statements and administrative guidelines at both the federal and provincial levels have stressed the view that employment training programs certainly, and educational programs to at least to some degree, were intended to meet employer's needs (Holland and Skolnik). However, three factors serve to distinguish the current policy stance from those of the last two or three decades. Two of these factors are contextual and have already been noted above. These are the anticipation of more rapid technological change and the realization, or at least the feeling, that affluence can no longer be taken for granted. The other factor has to do with labour market information, particularly medium to long term projections of the supply of and demand for labour by occupation. It is not an overstatement to observe that in the absence of reliable occupational projections, manpower planning can be manifested only in terms of an attitude or a predisposition, not in terms of relating education to specific employment targets. Also, educators who are not in sympathy with manpower planning can resist it without any confrontation over objectives. They can simply say, "Of course we can't relate our enrolment planning to the labour market, because we don't have the necessary data about the labour market".

### **The State of Manpower Forecasting in Canada**

There has not been an abundance of good labour market information or reliable manpower projections for most occupational groups in Canada to date. The quality of data and the accuracy of employment projections vary from one occupation to another, being greatest for those occupations for which training, certification, and employment are under public control, e.g., teachers, and poorest for the bulk of occupations which are not subject to such control. In an exhaustive review of manpower forecasting in Canada, the Economic Council of Canada noted, that, "very little has been accomplished in this [occupational projection] area of investigation over the last 15 years" (1982, p. 13).

The Council went on to recommend that "the federal and provincial governments assign high priority to the regular production of information concerning the labour force. . . .by *occupation* (its underline)".

There is a major effort underway now in Canada to remedy the inadequacies of occupational labour market information. Employment and Immigration Canada has within the past year spent over \$1.8 million in developing the Canadian Occupational Projection System (COPS). This expenditure on COPS represents a major initiative by the government to develop a comprehensive system of national and regional projections of supply and demand for all major occupational groups. These projections would serve as the basis for federal government policy interventions with respect to labour markets and manpower, and to the extent that the federal government influences developments in education, COPS projections would have significant implications for education as well. The most

immediate impacts are likely to be felt by Canadian community colleges under the National Training Act. It is likely, however, that the anticipated capability for making such projections will have some influence on the stance which the Government of Canada takes in re-negotiation of the arrangements under the Established Programs Financing Act with the provinces. The Dodge Report, which included a number of recommendations that have already been implemented by the federal government, suggests that federal financing of postsecondary education could be used to make universities more responsive to the labour market, and this idea is given further support in a budget paper prepared by the Canada Department of Finance (1981). All that appears to be lacking is the data base to make this possibility a reality.

### **The Canadian Occupational Projection System**

The development of reliable medium to long term occupational projections is an enormously difficult undertaking, and it remains to be seen whether the COPS initiative will result in projections of sufficient reliability to serve as a basis for manpower planning in higher education. Four potential strengths are apparent in the work on COPS to date.<sup>1</sup> The first is the likelihood of some improvements in methodology over earlier projection models used in Canada, particularly on the supply side, bringing the actual system in use much closer to the state of the art than has been done before. Still, the COPS model appears to rely essentially on linear projections, and makes no allowance for feedback effects of market behaviour on the projections. The linearity flies in the face of anticipated discontinuities resulting from technological change. The model (thus far at least) does not take account of adjustment mechanisms in the labour market, such as the effect of wage rates upon labour supply and demand, or substitution between capital and labour or between various occupations which results from changes in wage rates or availabilities of particular categories of workers. These limitations may be overcome to some extent by the considerable emphasis in the COPS model on the utilization of information from sector case studies and qualitative judgment of employers and other persons who have first hand knowledge of the forces which generate the observed data points. The case study and qualitative forecasting components of COPS (its second strength) would seem to be an improvement upon earlier projection systems which relied almost totally on mechanistic manipulations of data from the census and other secondary sources. However, there are some serious problems involved in integrating qualitative information with quantitative data, and as yet there is no indication of how this integration will be achieved.

A third feature of the COPS system pertains to its economy, but perhaps at the cost of reliability. This is the stated emphasis upon bringing together all *existing* data which could contribute in any way to the making of projections, especially tapping more effectively the potential from administrative data, e.g., unemployment insurance records, placement services, etc. There is some question, however, as to whether the existing data sources — even if maximum potential

use is made of them — are sufficient, and there are also serious problems of integrating data from different sources, involving problems of differing assumptions, definitions, time periods, sampling error, etc. Two particularly serious gaps in the present information mosaic noted by the Economic Council of Canada are on job vacancies and on the relationship between type of education and type of work performed. Another major weakness is the lack of information on the occupation-industry matrix of employment.

An additional feature of the COPS system worth noting is the very imaginative and flexible software which enhances accessibility for users and allows users, including particularly policy-makers, to simulate the effects of varying key assumptions and parameters, and also permits various types of sensitivity analyses. Having widespread easy direct access to the entire COPS data bank and projection model through a low cost computer terminal (with excellent graphics capabilities) will do much to make the use of the COPS a reality. However, pretty graphics and easy access obviously will not compensate for inadequate data.

### **Some Apparent Shortcomings of the COPS**

While EIC officials have made much of COPS' capabilities for sensitivity analysis and generation of alternative sets of manpower projections, these capabilities reveal a most serious weakness of the COPS or any other manpower projection system. This weakness relates to the fact that whatever range of scenarios are considered, decision-makers must ultimately select some workable target as a basis for manpower plans. However, the system is not (and probably can't be) constructed in such a way as to permit any probability statements to be made about the range of occupational supply and demand outcomes. While projections may be presented under such headings as "conservative", "optimistic", or even "most likely", these items will not likely carry any statistical significance. The heart of this problem lies in our inability to make reliable output projections for the economy as a whole or for major sectors. The little error analysis that has been done of manpower projections to date shows that errors in forecasts of GNP and sectoral growth rates are by far the major source of error in projecting occupational or educational requirements of the workforce (Hollister, 1967, is still the best work on this subject). Given the notorious difficulties in making accurate medium to long term economic projections, one might legitimately question the prudence of investing large sums of money in fine-tuning the more subtle parameters of occupational projection models. Indeed, a number of community college Presidents have suggested that the money spent on COPS might be better used to fund more education and training in the colleges, particularly raising the general education and skill levels of disadvantaged groups (Skolnik, 1982, pp. 5-6). The attempt to derive highly specific (and certain) projections of manpower requirements from very uncertain forecasts of the future path of the economy raises an even more fundamental question about the conceptual underpinnings of manpower planning in a predominantly market driven economy. It is paradoxical, but is it also unreasonable, to demand rigorous human resource

planning in order to meet the manpower needs of a largely unplanned economy? If not totally unreasonable, one must at least acknowledge the inevitable pitfalls in planning for a derived demand when the activity which generates that derived demand is in itself almost totally unplanned.

In spite of the various problems involved in making reliable manpower projections, the COPS has burst upon the scene with a great deal of enthusiasm, publicity, and avowed promise. It will be quite unfortunate if labour market reality refuses to be tamed and the COPS is unable to deliver, even with allowance for the qualifications in which it is clothed, what it appears to promise.<sup>2</sup> However, given the current state of the art of manpower forecasting, and the fact that the COPS will not generate much new data, it is difficult to be very optimistic about having the quality of manpower projections which is needed for relating investment in education and training to the future needs of the economy.

### **Manpower Planning and the Universities**

Only time will tell what COPS can actually deliver. In the meantime, its existence and attendant publicity will call forth demands for a reconsideration of the role of manpower planning in those sectors and programs which have heretofore eschewed it. This point applies especially to universities. By and large, universities in Canada have shown a considerable lack of enthusiasm for the manpower planning model, if not outright hostility to it. An exception to this generalization may be the Health Sciences. In making decisions about the number and location of medical schools in Canadian universities and enrolment in certain programs, manpower projections have been an important consideration, likely reflecting the high cost of training in the Health Sciences, and the substantial involvement of the Government and professional associations in such decisions. The degree of external influence on the universities' planning in this field is much greater than in other parts of the university, e.g., Arts and Science or Humanities. Even in the Health Sciences, however, manpower projections are not sufficiently determinate, and planners are "thrown back on judgments which are to a considerable extent subjective" (Axelrod, 1982, pp. 120-21). The field which probably lends itself to the most accurate manpower projections is Teaching. Yet, universities have been quite reluctant to base enrolment intake in Teacher Training Programs upon projections of the demand for teachers.

Arguments about the applicability of manpower planning to universities have, however, been somewhat academic, since in the absence of comprehensive and reliable forecasts manpower planning could not be implemented anyway. The lack of reliable occupational projections has been one of the major factors cited by those who have opposed bringing manpower planning to the campus. Now that COPS has appeared on the scene, along with the other factors cited in the introduction, one might expect a re-visitation to the debate about the applicability of manpower planning in universities which took place in the late 1960s and early 1970s. While that debate is old, as noted earlier, its 1980s context is new.

The substantial momentum that exists at present for a re-appraisal of the role of manpower considerations in higher education is not just a Canadian phenomenon. The (United Kingdom) Director of what is likely the largest research initiative in the world today on the interface between higher education and the labour market remarked recently that "the most likely shift in the orientation of higher education policy during the next decade will be towards encouraging the system to respond more directly to changing employment needs" (Williams, 1981). With this type of momentum as a background, it may be useful to explore briefly, in the present context, the major issues involved in determining the extent to which, if any, manpower projections should be considered in making enrolment and program decisions in universities.

Manpower planning in the university sector involves *deliberate efforts* to relate enrolment numbers in various programs to anticipated labour market demands for workers with the corresponding educational backgrounds. It may, as well, involve efforts to shape the curriculum within programs to fit the specific requirements for knowledge and skill which it is believed will characterize the workplace. The more strictly economic efficiency arguments for and against manpower planning have been summarized by Blaug (1967) and Holland *et al.* (1972) and need not be re-stated here. The essential economic argument in favour of *some degree* of manpower planning arises from the key role which universities play in preparing people for a variety of different types of employment. It is, therefore, difficult for society to achieve an efficient relationship between employment preparation and the skill, knowledge, and other qualities needed in employment settings without somehow ensuring that issues pertaining to this relationship are addressed in university planning. A number of factors make it difficult to ensure that future employment considerations are addressed adequately in university planning. Most important among these factors are that each university is autonomous, that universities have a multiplicity of objectives, and that they operate within a framework of traditions and values which sometimes appears to be (or indeed is) in conflict with catering *directly* to perceived vocational needs.

### **Objections to Manpower Planning in Universities**

The problems that arise when one asks how universities might utilize manpower projections are more philosophical than practical. As the English human resource economist, Maurice Peston, (1981, p. 123), has noted, "it may seem strange that such apparently simple problems as the education of engineers or the supply of sociologists lead to profound questions of political philosophy, but there is no denying that they do". These philosophical questions can be expressed in the form of philosophical objections – shared to varying degrees of conviction among members of the academic community – to steering the programmatic content and direction of university education too closely in accordance with perceived employment needs. First among these objections is that too much vocational orientation would conflict with, and possibly debase, the pursuit of the other objectives of universities such as: the search for truth and new understanding

beyond the present frontiers of knowledge; the development of intellect, curiosity, and character; and the transmission of culture. One may counter that many organizations face a similar situation of multiple objectives and somehow manage to reconcile them, or even benefit from creative tension among them. Yet, multiple objectives are not always reconcilable, and given the universities' unique role in society, one should not dismiss too lightly the pre-occupation with non-economic objectives as reflecting an ivory tower (in its perjorative sense) mentality, or worse, an attitude of social irresponsibility. All the same, one of the major challenges for universities in the 1980s will be to reconcile their employment preparation objectives with their other objectives, however difficult this task may be. Still it must be recognized that, in the long run, pursuit of their more intangible objectives by universities may contribute more to society than actions which would more readily prevent, or alleviate, short term labour market imbalances.

A second objection is that the conventional model of manpower planning involves only a one-way adaptation between education and the labour market; it is the educational system which is expected to take the needs of the labour market as given, and react appropriately. Such an approach could leave largely untapped the potential for creativity and innovation which the university possesses. If the university is, as many believe, on the cutting edge of change in many fields, then a model in which the university is asked *only* to react to developments in other sectors seems inappropriate. We might have more beneficial dynamics in the relationship between the educational system and the labour market (as between any two parties in a relationship) if each is attempting to adapt to the other. Given lagging productivity in Canada, industry might benefit from an infusion of new ideas and expectations about work organization, roles, and problem-solving approaches that would likely result from having new employees whose career preparation did not exactly fit the standard mold, instead of obtaining people who had been precisely shaped to fit existing, or projected, slots. The dynamic growth and innovation in microelectronics, computers, and software, often through the work of people who were not trained specifically for pre-determined employment slots, would seem to illustrate this point.

There are two other reasons why the one-way adaptation of the university to the employment sector may be inappropriate. These reasons flow from the fundamental assumption underlying manpower planning. That assumption is that a particular level and composition of gross national product requires a particular configuration of skills in the workforce. If the actual configuration of skills in the workplace at any time is different than the required configuration, production will be diminished and workers in some occupations will be (structurally) unemployed. This assumption conflicts with what we know about the substantial adjustment capabilities which exist in the workplace. Production techniques and workflow can be altered to accommodate the skills of workers, and persons trained in one area can often be employed productively in other areas. Research has shown that there is a high degree of substitution among workers with various types of education and that the labour market is extremely flexible. Naturally,

the education and training of the labour force impose some constraints on production, but research has shown that the nature and extent of these constraints is much less than assumed in manpower planning models (Skolnik, 1970; Psacharopoulos and Hinchliffe, 1972; Freeman, 1981; Blaug, 1982).

The need for manpower planning is greatest where the rigidities in the use of manpower and the barriers to supply-side responses are greatest. In that context, one is drawn to, or repelled by, the idea of manpower planning as one views the market for educated manpower as being very rigid or quite flexible. To the extent that certain rigidities exist, policies aimed at eliminating barriers and increasing flexibility are an alternative to the adoption of manpower planning. One of the drawbacks of strong public commitment to manpower planning is that such commitment all too easily promotes acquiescence to market rigidities and weakens public commitment to eliminate unnecessary employment barriers.

The assumption of fixed skill requirements which underlies manpower planning can give rise to a "peg-in-a-hole" mentality in which individuals are viewed as imperfect blocks needed to be shaped precisely by education and training systems in order to fit specific occupational holes. Such a view of human resources ignores the unique developmental and creative potential of the individual. A human resource development policy which operates from this perspective cannot hope to realize the productive potential of the workforce, let alone give dignity to work or enhance quality of work life.

This leads to a third objection, and one for which there is some evidence that it is shared by a number of people in industry. This objection springs from the view that the skills most needed by industry involve the ability to think, analyze, problem-solve, learn, communicate, and generally adapt to whatever challenges come along. It is simply impossible in education to anticipate all the specific demands which will be placed upon graduates in the workplace or to simulate the workplace setting.

To be fully productive in industry, employees require much on-the-job learning and those with the best general education likely are the best on-the-job learners. It is also impossible to anticipate the nature and extent of job and career changes which graduates of any program will experience, or to provide training for all such changes within the confines of any pre-employment program. Thus, it is argued frequently that what individuals need most as preparation for their working lives is a strong general education which will provide a solid base of theory, concepts, technique, and perhaps most important, "learning-how-to-learn". Axelrod contends that this view of the role of the university was widely held by the major employers of university graduates throughout the period of great expansion of Canadian universities. While business regarded the meeting of the economy's manpower needs as the principal function of universities and the main justification for their private and public financial support, business did not feel it necessary to intrude upon the planning decisions of universities. Among the numerous interesting quotations on this theme reported by Axelrod, the following remark by the President of Imperial Oil stands out: "industry has

found that it can train an educated man, but it cannot necessarily educate the trained man” (p. 107; see also Dawson, 1983). Axelrod does not establish precisely, however, whether the thrust of such quotations relates to the balance between liberal and professional studies *within* particular fields of occupational preparation, or to the balance of enrolment *among* various fields. Moreover, it remains to be seen whether the views which prevailed in business in the affluent 1960s retain as much currency in today’s economic and technological climate.

A fourth philosophical objection pertains to a potential conflict between national manpower needs and personal preferences, aptitudes, interests, and desires regarding careers. Involved here are questions about the university’s role, or responsibility, in deflecting people from their preferred career paths toward areas of greater societal need through such means as quotas, differential fee structures, scholarships, and suasion. It is not so clear that students should be free to pursue whatever field of study they wish when their education is so heavily subsidized by the public. The substantial public subsidization of higher education is justified primarily by appeal to externalities, and the elimination of skill bottlenecks may be one of the most important externalities of investment in higher education. Whatever the efficiency and equity implications of public subsidization, however, our traditions of free choice in society, and in the university, make it difficult to over-ride individual career aspirations in the name of manpower planning.

Of course students do respond to changing employment opportunities in making their enrolment decisions. An example is the rapid increase in enrolment in Commerce and Administration, Engineering, and Computer Science programs in Ontario universities since 1977 (Council of Ontario Universities, 1982, p. 50). The question is whether leaving the matter to decisions of students (the “Social Demand Approach to Educational Planning”) will result in an effective matching of occupational labour demand and supply, or whether more directive measures (“Manpower Planning”) are necessary. Also, sufficient numbers of students cannot enrol in various programs if the universities do not provide the corresponding numbers of places.

### **Some Practical Problems with Manpower Planning**

Besides these major philosophical objections, there are a variety of practical problems with manpower planning in the universities: (1) the reliability of the projections has been discussed earlier. Without easy access to timely and appropriately refined projections, universities clearly cannot, and cannot be expected to, give significant weight to manpower planning considerations. (2) jurisdictional mobility of graduates is a source of technical complexity in making and using projections. Fundamental questions are involved here pertaining to the appropriate jurisdictional scope of the labour market for various university programs. For example, is the relevant market for a provincially chartered university’s graduates in nursing, engineering, or business national, regional, or provincial? What weight should be given to visa students – some of whom stay in Canada

after graduation – in making supply projections? (3) a third problem has to do with the task of effective co-ordination of the plans and actions of autonomous institutions: in a field where a shortage is projected, the sum of individual responses of various institutions could easily result in collectively overshooting the mark. Is it effective, or even sensible, for one institution to relate its enrolment to national or provincial occupational projections without trying to take into account the responses of other institutions? Is manpower planning for universities possible only on a system-wide basis, and, if so, what are the implications for institutional autonomy? (4) the fourth practical problem I wish to raise pertains to the difficulties for universities in achieving substantial re-deployment of resources from areas of decline in employment demand to areas of increase. These difficulties have been the subject of much discussion in the past few years, particularly in the context of calls for system rationalization. In the course of these discussions the practice of tenure has come under scrutiny and has on occasion often been the subject of much derision. What has perhaps not been fully appreciated in such discussion is the university's pre-eminent role as a social repository of accumulated intellectual and cultural capital. The prerequisites for maintaining and enhancing this unique capital stock would seem to impose genuine constraints on the university's ability to adapt its enrolment distribution quickly and smoothly to immediate changes in labour market flows. On the other hand, if viewed strictly in terms of individual equity, there is no apparent reason why, as individuals, History or Economics professors should be shielded from market pressures any more than are secretaries, tradesmen, or middle level managers.

### **Manpower Planning and the Idea of the University**

The above comments about the redirection of university resources illustrate that there is a fine line between what I have referred to as philosophical problems and what I have labelled as practical problems. Redirection of resources within the university in response to changing labour market demands raises fundamental questions about the nature of the university as a societal institution. When carried beyond certain limits (which are difficult to specify), the manpower planning model implies that a university is a mere collection of independent programs, each of which can be expanded or contracted at will. This perception ignores the interdependence among different fields of study and the essential core of scholarly inquiry which inheres in the concept of the university. While spokesmen for the university have not been very effective at specifying precisely what that core is, they appear to know when it is in danger of being lost. Such fears have been expressed quite vigorously in response to pressures arising from either differential manpower demands or budget reductions – toward major alterations in the discipline or program balance within an institution. As universities grapple with declining resources, one hears increasing demands for the concentration of resources in fewer programs in an effort to maintain quality in selected programs rather than succumbing to mediocrity spread equitably across

all programs. While this argument has a certain logical appeal in the abstract, it generally runs into difficulty in application — difficulty that seems rooted in something deeper than the job security fears of those in the programs which would be eliminated. For example, the University of Prince Edward Island, facing severe budgetary problems, is presently considering a set of recommendations which would allow students to major only in English, history, French, psychology, biology, business, home economics, computer science, and education; not any longer political science, sociology, economics, mathematics, chemistry, or physics. While more information would be needed to assess the specific proposals, particularly what capabilities they would leave in the second set of disciplines, one can sympathize with concerns which have been expressed about “gutting the whole core of traditional science and arts faculties”, while sympathizing equally with the President for having to face such a choice. It is not surprising that the University senate overwhelmingly rejected these recommendations out of fear that the result would be to transform the university into “another business and vocational school” (*The Globe and Mail*, 1982, p. 8).

Similar concerns have been heard in leading universities in the United States where institutions have become vulnerable as a result of apparent success. Stanford University, for example, faced with a virtually unlimited demand for places in its engineering department and an equally buoyant demand for its engineering graduates put a cap of 1800 on that department’s enrolment because the President felt that otherwise there would be too great an imbalance between humanities and technology in the university. The President of Grinnell College has warned of the danger of obliteration of liberal education as technical and vocational studies expand to meet the demands of the marketplace (Botkin, et al., pp. 143-50). Canadian universities could be faced with similar dilemmas if, especially in the context of declining resources, they are pushed substantially in the direction of responding to projections of manpower requirements. Available projections, perhaps heavily influenced by as yet unsubstantiated claims about the growth of the high-technology sector, indicate substantial growth in the demand for engineers and rather poor prospects for humanities and arts graduates (Canada, p. 5; Employment and Immigration Canada, pp. 53-55; Economic Council of Canada, p.20). While it is difficult to say just how much imbalance among disciplines and programs is too much, we might conclude the discussion of this issue by noting that the more extreme versions of manpower planning in higher education could be self-defeating (in addition to destroying the conception of the university as we know it today) because of the interdependencies among disciplines and subject fields. It is difficult for a university without a mathematics department to provide adequate training for engineers, and increasingly there is concern about the advisability of turning loose upon society scientists who have not been exposed to philosophy, humanities, or social sciences. More generally, the Association of Universities and Colleges of Canada notes, in its response to the Dodge Report (1981, pp. 3-4):

Because education and training are inseparable components of a

student's learning experience at a university, one cannot practically support *only* the training component of an educational program. Similarly, because of the symbiotic relation between the university's core element and its associated professional faculties or schools, there are severe limitations on the effectiveness of increased support for associated professional programs if the core element is not also supported.

### It Doesn't Have to be One Way or the Other

In reflecting upon the objections and problems described above, it is easy to embrace them as enlightened gospel, or dismiss them as self-serving rubbish. Blistering attacks on the use of manpower projections might make for good copy in university publications, as do allegations of university indifference to them in the public press. Yet it seems neither realistic nor responsible to formulate the choice as being between (a) making manpower projections the *primary* determinant of university planning, or (b) prohibiting the circulation of such projections in university planning councils. As Peston notes, it is not "*prima facie* nonsense to suggest that the country needs more of some types of graduates and fewer of others" (p. 136). That being the case it is not unreasonable to expect that institutions which derive the vast bulk of their funds from the public treasury should attempt to respond to the country's needs by providing more of some types of graduates and fewer of others. At the same time, it is important that universities do not, or are not forced to, give undue weight to manpower considerations which would override their other traditional, and still essential, responsibilities. What seems most useful is to find some middle ground wherein manpower information is considered along with a variety of other types of input in guiding the development of universities.

It is necessarily difficult to specify exactly where in practice this middle ground would lie. However, several guidelines can be suggested and this paper concludes with the following list of guidelines with respect to the role of manpower planning in higher education.

It should be noted that for the most part these suggested guidelines are not original. Calls for some of these approaches have been made, at least in a fragmented way, in many of the discussions about the manpower role of universities in Canada over the past twenty years (e.g. Commission on Postsecondary Education in Ontario, 1972). To a considerable extent, these calls have fallen on deaf ears, for example, the plea for better job training in industry or for better career counselling in universities. With a history of inadequate action in these areas, one would be ill-advised to assume that this new call will fare any better than previous ones. On the other hand, if any advances are to be made in the effectiveness with which university programs relate to the labour market in Canada, the choice would appear to lie between the set of strategies outlined below, on the one hand, and a centralized technocratic version of manpower planning on the other. It is the author's belief that the latter is neither socially desirable nor technically feasible. The former is obviously not without its

considerable difficulties. However, the following set of strategies is, with sufficient commitment by appropriate agents, both capable of realization and consistent with the values of a mixed capitalist economy. Whether the requisite commitment will be forthcoming should depend primarily upon the extent of dissatisfaction with the existing relationship between universities and the labour market and the palatability of investing authority and resources in 1984-style alternatives.<sup>3</sup>

1. Universities should acknowledge their unique role in training the highly qualified manpower which the nation needs. At the same time, they should take every opportunity to explain to government and the public the benefits of general education and liberal studies and the impossibility of effectively separating the training component from such education.

2. Universities should give more consideration to occupational projections along with other data and factors in making enrolment and program decisions. They should avoid over-reacting to projections, but should be prepared to modify enrolment and redeploy resources on the margin in response to relatively solid information on major changes in employment needs.

3. Industry should accept a substantial responsibility for providing the specific training and on-the-job learning experiences for graduates which is necessary for workers to attain optimum performance in particular employment settings. To reinforce this trend, government should discourage employers from foreign recruiting of educated manpower who possess highly specific training and experience; and universities should co-operate with industry in developing flexible arrangements for supplementary training or retraining of graduates (Botkin, *et al.*, pp. 136-137), supported by a national policy for paid educational leave.

4. Government should allow each institution to determine the most appropriate and effective way for it to reflect and weigh manpower consideration in relation to other objectives in the context of the institution's own mission. It is likely that much of the university community's opposition to manpower planning is opposition to *centralized* manpower planning in which the university would become an arm of government. A decentralized approach might facilitate a desirable degree of differentiation and innovation and avoid a large collective error in anticipating trends in technology and employment.

5. Each university should give more serious attention to information on the employment experience of its graduates. Studying the employment experience of graduates is one of, perhaps the, most effective way(s) of assessing the adequacy of university programs with respect to preparing graduates for work as well as for broader roles in society. Inquiries on this subject could do much to verify hypotheses about the vital contribution of general education to career development. Yet, universities have, by and large, carried out little follow-up of their graduates. As universities move substantially to enhance contacts with their alumnae for purposes of obtaining financial contributions and other support, it may be quite cost-effective to, at the same time, elicit information on graduates'

employment experience, along with other information which would be useful in reflecting upon, or evaluating, programs. This could include quantitative information on the numbers obtaining jobs in various fields by length of time since graduation and on changes in occupational field. It could also include qualitative information on how well graduates felt their education prepared them for specific positions, for on-the-job learning, and for the career changes they had to or wanted to make; and also possibly on the impact which they had in their employment settings. Given the vagaries of long term projections that rely heavily on census and other aggregated data, an ongoing monitoring of actual employment experience would be an invaluable source of employment information. Also, insofar as graduates in the same fields at different universities may receive different types of education, and thus effectively be evaluated differently in the labour market, follow-up studies by individual institutions, as compared to national studies by central agencies (e.g. Zsigmond and Clark, 1981), would reinforce the individualized approach to institutional planning suggested in item 4 above.

6. Universities should make more systematic attempts to advise students on the employment prospects and conditions which they likely will face after graduation. Whether universities like it or not, one of the major motives of their students is to obtain a good job afterwards (*University Affairs*, 1982). Universities do evince some commitment to responding to such motives insofar as they operate career, or placement, offices. Provision of better information on projected employment opportunities in various fields, as such information becomes available, would fulfill an apparent responsibility. To the extent that student enrolment preferences are influenced by such data, initiatives in this area would also make the whole system more responsive to projected manpower needs. That is another way of saying that, through their unique access to students and prospective students, universities, armed with better manpower information, could facilitate a more effective execution of the "social demand" approach to higher education planning. Social demand is an approach to educational planning which relies upon enrolment decisions of students to bring about an effective matching of occupational supply and demand. It is an approach which most people in the academic community would find more palatable than manpower planning largely because it allows greater scope for personal freedom and for individuals to weigh for themselves employment considerations relative to other objectives in pursuing postsecondary education.

7. Universities, government, employers, professional associations, and other stakeholders should all strive to increase the flexibility and adaptive capability in the labour market for educated manpower. This involves the elimination or reduction of barriers to the training, re-training, and utilization of educated workers, as well as structural changes within education and the workplace which would make the whole system more responsive to changing demands. The need for specific long term occupational projections is greatest in a society whose educational and employment systems are characterized by a great deal of rigidity.

One policy approach is to accept such rigidities and invest substantial sums in preparing occupational forecasts and implementing manpower planning. An alternative approach involves emphasizing changes which would make these systems more flexible, and taking a more sanguine view of the prospects of ever having totally reliable occupational projections.

Insofar as the availability of very good manpower projections could make us more tolerant of personally and institutionally stultifying rigidities on who is to be eligible for what type of training or who is allowed to learn or perform particular work functions, as well as less able to defend the traditional ideals of the university in a period of economically difficult times, the current limitations in the state of manpower forecasting may not be such a bad thing.

#### NOTES

1. The comments which follow reflect the author's assessment of information on COPS presented in working papers distributed by Employment and Immigration Canada and in remarks of EIC officials at the First National Occupational Outlook Conference, Ottawa/Hull, January 18-19, 1983 (proceedings, forthcoming).
2. It is always difficult for technical experts to strike an appropriate balance between claim and caution in describing a new product to laymen. I was particularly sympathetic to EIC staff as they dealt with this problem at the First National Occupational Outlook Conference. In spite of the sensitive way that they handled the problem, my impression was that most business, labour, and education representatives went away from the Conference with expectations about COPS that will prove difficult to satisfy. Perhaps the large amount of money which the government is investing in the system carried more weight than the qualifications noted by EIC officials and academics.
3. One of the referees, whom I thank for excellent and incisive comments on this paper, suggested that I try to bury manpower planning once and for all or provide detailed proposals on how it might work in an essentially unplanned economy. I have indeed tried to bury the concept of a centrally planned manpower system that is based upon an information system of bewildering complexity and awesome magnitude. I regret that my proposals may not be sufficiently detailed for this referee (or others), but I have tried to outline explicitly a coherent set of alternative directions which would, I believe, lead to a considerably more effective relationship between universities and the labour market than that which obtains presently. I make no apologies for the fact that the full development of each of these strategies (e.g. co-operative programs between universities and industry for the retraining of employed graduates) is beyond the scope of this particular paper, or for the inherent complexities in the interface between education and work.

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