INSTRUMENTAL VS. DISCIPLINARY CURRICULA: A COMPARATIVE PERSPECTIVE

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Changing employment patterns and austerity affect cultural and curricular content in an educational system. Considering Thorstein Veblen's dictum that "...higher learning takes its character from the manner of life enforced on the group by the circumstances in which it is placed" this paper looks briefly at Europe and U.S.A. and narrates both the conceptual and the statistical aspects of the shifts.

The general position was perhaps best enunciated for U.S.A. in the Newman report on Higher Education (H.E.W. Office of Education report by the Chairman of Task Force Frank Newman, 1971). It puts forth "skills and training" as the ends of college education, i.e. the direct products of cognitive investment, whereas the process products of a college education emerge from the American University (Talcott Parsons and Gerald Platt) as the most important outcomes. Parsons and Platt held that graduate training and research are the core of the university, where the commitment to cognitive-rationality is translated into the canons of the various disciplines. The Newman report, however, advocated that students be socialized to the world of work and be related to the university as a source of useable knowledge in place of the Parsonian socialization to rational modes of behavior.

For Parsons and Platt, courses should conform to the strict professional standards of academia; for Newman professionalism would be de-emphasized by the introduction of practitioner knowledge from the workplace.

Elite institutions on the American scene are still likely to be governed by the demands of disciplinary inquiry. The middle ranks of universities, a central part of the David Riesman/Christopher Jencks academic revolution* and previously large gainers of academic, scholarly, research prestige are now dominated by instrumental, as opposed to disciplinary, knowledge and vocationalism. The Newman report described, predicted and perhaps would have applauded what has happened to the middle-
rank American universities, but it did not cause the change. The changing labor market, the austere economy and the cessation of growth in American higher education (demographic change) were the major factors.

There has been, then, a general trend away from disciplinary majors in favor of instrumental subjects. This trend is especially noteworthy in view of the steady decline in education majors. In the class of 1977 the business majors for the first time surpassed education as the largest category of graduates, comprising one of every six bachelor's degrees.

The following data showing change from 1964 to 1977 in percentage of total number of higher education students in the U.S.A. document this conclusion:

### For academic disciplines

<table>
<thead>
<tr>
<th></th>
<th>1964</th>
<th>1977</th>
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<tbody>
<tr>
<td>Per cent of Total</td>
<td>48.4%</td>
<td>42.1%</td>
</tr>
<tr>
<td>Letters</td>
<td>8.7%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>17.0%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>18.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Foreign Languages</td>
<td>2.7%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Physical Science</td>
<td>3.8%</td>
<td>2.4%</td>
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### For instrumental knowledge

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<thead>
<tr>
<th></th>
<th>1964</th>
<th>1977</th>
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</thead>
<tbody>
<tr>
<td>Per cent of Total</td>
<td>51.6%</td>
<td>57.9%</td>
</tr>
<tr>
<td>Business</td>
<td>12.2%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Education</td>
<td>24.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>Health Professions</td>
<td>2.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>-</td>
<td>0.7%</td>
</tr>
<tr>
<td>Journalism/Communications</td>
<td>0.5%</td>
<td>2.5%</td>
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Jencks and Riesman note that "the desire for professional training pre-dated the existence of a body of knowledge needed by
practitioners" (Academic Revolution p. 203). Business schools by incorporating organizational analysis, quantitative techniques, game theory and the case method have attempted to bring some semblance of discipline to their previously highly instrumental curriculum ("academic drift"). But for most non-technical professional programs the relationship between course work and real work is obscure.

The lack of relevance of classroom material for the intended para-professional, professional or technologist, however, does not deter students so long as employers give priority to the specialized, instrumental degree holder graduate in winnowing their applicant pool. Along with this tendency comes the dwindling prestige of disciplinary graduates as well as changes toward the instrumental in the middling higher education institutions.

A recent example of the impact on curricular content by the nature of contemporary jobs and changing work functions in society is the dispute between accrediting agencies and universities about the content of a computer science major.

Liberal arts colleges have stated that the proposed accrediting standards for college computer science programs give too much attention to the needs of industry and ignore the philosophy of liberal arts institutions. These accrediting standards were developed by a joint committee of the Association for Computing Machinery and the Computer Society of the Institution of Electrical and Electronics Engineers, the two major national organizations for computer scientists.

Computer science professors from Bowdoin and Colgate charge that by setting standards for accreditation that are based on industry needs, the organizations "would irreversibly erode the distinctive quality" of a liberal arts degree in computer science. (Chronicle of Higher Education June 13, 1964). They would rather educate a B.A., not only well-trained in computer technology but also exposed to a variety of disciplines which teach inquiry, analysis of information, synthesis and communication.

The accrediting agencies insist on a curriculum that is heavier on technology and employability, stating that "2/3's of computer science graduates have difficulty fitting into the workaday world."

They asserted, "Accreditation was set up not to accommodate the colleges, but to accommodate the profession."
By the Fall of 1985 the accreditation agencies want the following criteria to be in place:
In a four year program 1 1/2 years of computer science, 1 year of related courses such as mathematics and physics, 1 year of general education requirements and 1/2 year of electives.
At least 5 full-time faculty members, one of whom would serve part-time as department chairman, the preponderance of faculty members to have Ph.D's in Computer Science.

II

In Western Europe the challenge of austerity and increasing vocationalism brought somewhat different responses. Public sector employment had always been the outlet for the majority of university graduates. In West Germany, for example, between 2/3's and 3/4's of the jobs open to graduates had been in the public sector according to the Central Employment Placement Office (Nuremberg). The statistics for 1977 in Sweden show that six months after graduation 2/5's worked for local government, 1/4 for central government and somewhat more than 1/3 for the private sector. The data for 1978 in Denmark indicate that more than 2/3's entered the public sector. In 1976 for France the figures reveal that 75% of the arts graduates and 60% of the science graduates went to the public sector. In Great Britain 44% of the graduates in 1978 entered public administration, teaching or nationalized industries and 45% took further courses, did research or continued in academic careers. For Italy the statistics have 52% of the graduates in teaching and university work in research while an additional 14% was in other public sector employment.

The sharp drop in teacher opportunities and general decline in public sector employment in the last decade in Europe have led to exhortations to prepare for the private sector or for "under-employment" i.e. for jobs requiring fewer qualifications than the university graduate possesses. An official agency like the West German Central Federal Employment Office in Nuremberg urges graduates to lower sights. Students should be less specialized, less oriented toward a particular career -- they could, for instance, combine skilled craft work with an engineering degree. German graduates take jobs normally filled with "Abiturienten" who, in turn, enter apprenticeships formerly open to pupils with intermediate school leaving certificates.

An Italian Prime Minister praises the delights of manual labor to university graduates. Chancellor Helmut Kohl of West Germany
declares the number of university graduates to be disproportionate to the needs of the labor market. He asserts that specialized vocational training is often the more sensible alternative to students contemplating university entrance. There is also the attitude of former French Minister of Education Edgar Faure, whose Unesco speech as reported in Le Monde Sept. 27, 1972 says, "I do not see any objection to the fact that a man who has obtained a degree gets a manual job; it is already a privilege to have been able to study; hence it cannot procure for those who have benefited from it the right to enjoy, forever, higher incomes and more agreeable lives."

Such pleading by political leaders has apparently had some success. A recent poll of West Germans shows that for 1984 59.2% of abitur holders want to go to the university, in 1983 62.5%. In 1972 almost 90% wished to go to the university.

The perspective is further elaborated in the work of Professor Ushiogi. He has demonstrated that graduates of Japanese higher education have been appearing in increasing numbers and proportions in clerical and sales occupations and blue collar jobs. Further, he has shown that a relatively higher percentage of graduates appearing in such occupations of average status is a common feature of societies well invested in mass higher education such as Canada, U.S.A. and Japan, while a low percentage is absorbed in those occupations in societies less deeply invested in mass higher education, e.g. West European countries.

In the first set of countries internally diverse systems of higher education have diverse connections to job markets; graduates try to adjust expectations accordingly. In the second set of countries less diverse systems have more specific connections to job markets, e.g. primarily to the leading professions and in the past to the civil service, and graduates have narrow expectations about appropriate employment.

Functionalists believe that as more college and university graduates appear as office clerks, automobile salesmen, computer science programmers, laboratory technicians, engineering technologists and occupy the ranks of advanced blue collar labor, it will seem to them and to their observers that they are not necessarily under-employed and over-educated. But in Europe they have not particularly noted the impact on curriculum, i.e. they have assumed traditional university education for these middle jobs newly available to the graduate.

Or they may cite the L.U.T.'s of France, the district colleges of
Norway, the Gesamthochschule of Germany, or the polytechnics of Great Britain as providing a more direct, relevant training for these middle-status positions. Indeed in a recessive European economy the graduates of short-cycle higher education training institutions may be competing with university graduates for the same positions.

Only in Sweden perhaps have the universities in the 1968 and 1975 reforms incorporated theory cum practice courses in the curriculum and technical-like programs in response to apparent social necessities. Plans for incorporating the following, hitherto classified as upper secondary studies, were included in higher education in the post-1968 implementation of reforms: pre-school teacher training colleges, schools of home economics, physiotherapy institutions, schools of nursing, recreation leader training and occupational therapists, for example.

But even Sweden with its breakdown of all positions into five categories -- technology/administration, economics and social work/ medicine and nursing world/teaching/cultural information -- have sparse forecasting. Higher education and forecasting can apparently take place in a time of expansion. Pressure from employers/unions or universities and other post-secondary education units for forecasting and training technical/scientific personnel to fill gaps in technician supply -- e.g., shipping and oil in Norway -- occurs, but in general the educational system lags behind in responding to these needs.

Universities with their 6/7 years of training and simpler, older facilities than required may not necessarily be more adaptable. Kjell Elde points out that even before Sweden, Norway brought in vocational emphasis and avoided "tracking" in the school system because it never had the full strength of the classical gymnasium as in continental Europe or even Sweden/Denmark. Therefore, the secondary was closer to the primary level of schooling.

Other social changes also have an impact on the curriculum e.g., the age distribution of the population. The elderly have claims to the services of educational institutions. Relative emphasis on different work functions in society may alter, influencing education through gaps in the occupational structure. Some societies have more retired people than industrial workers, thus affecting attitudes toward youth and institutions.

The composition of the stock of highly qualified manpower in industrialized countries may show substantial differences in the relative strength of such groups as medical doctors, lawyers,
social scientists, engineers, natural scientists. The supply of individuals with different qualifications often determined the demand.

Some nations produce a relatively high number of lawyers during the history of their universities and legally trained personnel are consequently used in a large number of functions served by other personnel categories in other countries. Again, certain nations educate large numbers of university trained engineers. These are extensively used in administration, sales and in functions regarded as technicians' jobs elsewhere.

Norway, it is said, has relatively few business economists; this lack apparently affects structure and process in Norwegian economy. Despite high density of medical doctors per capita, Norway seems to have a perceived shortage of medical doctors because its doctors perform functions satisfactorily performed in other countries by other personnel.

Professional titles may be the same but the functions performed vary considerably from country to country and educational institutions tend to adapt their training to the actual use of their candidates.

Other differences in countries may be shown by comparing average costs per student in higher education to average costs per pupil in compulsory education. The Nordic countries and U.S.A., for example, spend relatively more on education at the lower levels.

Similar differences may be noted in relative resource inputs in general education as compared to vocational education. Here also Nordic countries spend far more per pupil in vocational training than in general education.

In comparative perspective, the response to pressure by society on educational systems for vocational, quasi-professional and professional emphasis differs in Western Europe and the United States so far as impact on curriculum is concerned.

In the United States individual courses and sequences of courses are quickly devised to correspond to stated demands of accreditation societies or professions or discerned needs of local industry. American education systems, especially in the middling and lower status higher education institutions, develop instrumental courses on "hands on" training courses to meet the demand for technolo-
gist of various kinds. Little thought is given to obsolescence, i.e. that these particular kinds of technologists may not be needed five years hence as industry or service or high technology change.

In Western European countries the curriculum itself will change only slowly but the graduate is now likely to enter the private, not the public sector, take a position once occupied by one with slighter disciplinary preparation or by a graduate of short cycle higher education.

Scandinavian countries attempt to merge theory with practice, disciplinary with instrumental knowledge, so as to retain elements of traditional knowledge, but at the same time make the student more employable in technical, para or quasi-professional positions while maintaining the customary education and training for the traditional professions.

Of course there are significant modifications of these approaches. Elite disciplinary education continues to exist in the prestigious American colleges and universities. French E.I.T.'s, Norwegian district colleges, German Gesamthochschulen, American community colleges and English polytechnics, were developed to contain the strictly technical training for employability with scant regard for general/liberal education in the curriculum. The French Grandes Ecoles and Oxbridge remain relatively untouched by these changes and their graduates continue to occupy the elite positions in their respective societies. Even Sweden, often cited as perhaps more successful in fusing the disciplinary with the instrumental in its university system, apparently finds it necessary to reinstate in its universities a larger role for disciplinary research, mainly deemphasized since 1968.

Yet the centerpoint in the last decade and half between the disciplinary and the instrumental knowledge, theory and practice, has surely moved toward the latter under the impact of social, industrial, and economic change. And surely the higher education graduate goes and will continue in even larger numbers to go into jobs of lesser status, formerly ignored by such graduates. And surely the curriculum in higher education institutions will reflect this circumstance slowly in Europe, more rapidly in U.S.A.