

Job Skills and Schooling: A Class Analysis of Entry Requirements and Underemployment

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This paper explores how schooling reproduces the general class structure of the Ontario workforce, particularly the division between mental and manual labour. The general literature on job skill levels is reviewed, and educational entry requirements are distinguished from other aspects of job skills. A supposed skill division of mental and manual labour between corporate executives and intermediate employees, on the one hand, and proletarian workers, on the other, is posited as being fundamental for the reproduction of the class structure of advanced capitalist economies. Data from a 1984 Ontario survey of self-reported job entry requirements and educational attainments and of the congruence between requirements and attainments are analyzed for the entire employed workforce and for different class positions. The findings suggest little aggregate-level upgrading of job entry requirements in Ontario in recent decades with the gap between the corporate executives and intermediate employees and the proletarian workers in post-secondary requirements remaining large. Although educational attainments are somewhat more likely to exceed requirements among younger employees, the incidence of such underemployment appears to be quite similar across most class positions. Hence, at least with regard to job entry requirements, the division between mental and manual labour appears to have been reproduced effectively to date in the employed workforce.

Cet article cherche à montrer comment le processus d'éducation reproduit la structure de classe à l'intérieur de la force de travail ontarienne en général, en portant une attention particulière à la division entre le travail intellectuel et le travail manuel. La littérature portant sur les niveaux de compétence de travail est passée en revue, et les exigences requises en matière d'éducation que l'on retrouve dans les formulaires de demande d'emploi sont isolées des autres aspects reliés aux compétences de travail. Le maintien d'une division marquée entre le travail d'employés(ées) gestionnaires de niveau intermédiaire considéré comme intellectuel et celui de travailleurs prolétaires considéré comme manuel est, de façon opérationnelle, considéré comme fondamental à la reproduction de la structure de classe des économies capitalistes avancées. Les données fournies par une étude ontarienne menée en 1984 portant sur des comptes rendus de la part d'employés(ées) de ce que sont les exigences requises dans les demandes d'emploi et le niveau d'éducation et sur le niveau de congruence entre exigences et réalisations sont analysées pour l'ensemble du marché du travail et pour les divers types d'emploi. Les résultats suggèrent qu'il y a sans doute eu peu de fait en Ontario ces dernières décennies afin de mettre à jour, au niveau des exigences requises sur les formulaires de demande d'emploi, le niveau global d'éducation à la hausse, et que la marge entre les employés(ées) gestionnaires de niveau intermédiaire et les travailleurs prolétaires pour ce qui est des exigences post-secondaires demeure considérable. Même si le niveau d'éducation est appelé à dépasser les exigences requises surtout chez les plus jeunes employés(ées), l'incidence d'une telle incongruence entre le niveau d'éducation et les exigences requises en matière d'emploi semble se répéter aux

différents niveaux d'emplois. Donc, à tout le moins si on s'attarde aux exigences requises sur les formulaires de demande d'emploi, la division entre travail intellectuel et manuel semble jusqu'à maintenant s'être reproduite au niveau du marché du travail.

Over the past decade or so in all advanced capitalist economies, growing unemployment and the introduction of microelectronic-based technologies have provoked increased concern over changing skill requirements within the workplace and the adequacy of skill training within schools. There has been considerable research, mainly in the United States, on the extent and effects of an apparent gap between job requirements and educational attainments (Burris, 1983), and numerous workplace and educational reforms have been proposed to close it (Levin, 1980). The U.S. research literature agrees that the aggregate educational attainments of the employed workforce have increased relative to the educational requirements of the economy (Clogg & Shockley, 1984; Rumberger, 1981). But findings with regard to change in the skill levels of work are much more equivocal, with evident lack of consensus over what constitutes "skill" (Spenner, 1983).

There has been little Canadian research bearing directly on job skill requirements and their relations to schooling, and most such studies have focused on post-secondary graduates (Anisef, Paasche, & Turriffin, 1980; Clark & Zsigmond, 1981; Harvey & Kalwa, 1983). On the basis of a sample survey, this paper offers estimates of the recent educational requirements for job entry and of the match between perceived requirements and educational attainments for the entire employed workforce in Ontario. In addition to general workforce estimates, differences by class position and possible age and gender effects are considered.

Job skill requirements are understood here as socially constructed through negotiations in labour markets and workplaces. The central skill distinction in modern industrial economies is between mental and manual labour, that is between the planning and design of work tasks and their manual execution. I assume that the division between a supposed capability for mental labour among corporate business owners and managerial, supervisory, and professional employees, on the one hand, and a more restricted capacity primarily for manual labour in the rest of the hired labour force, on the other, is central to the reproduction of advanced capitalist relations of production (see Braverman, 1974; Browne, 1981). Educational entry requirements are important to the imputed skill level of most jobs, with some form of post-secondary schooling widely regarded as a necessary qualification for many types of planning and design work. From this perspective, this paper will assess

empirically, first, the extent of class differences in job entry requirements and, second, the extent to which those in different class positions perceive themselves as overeducated for or underemployed in their jobs. In short, it will consider the extent to which a division between mental and manual labour is being reproduced currently within the class structure of the Ontario economy.

THE CONCEPT OF JOB SKILLS AND THE CLASS STRUCTURE OF WORK

When *skill* is taken as a primitive term in empirical research, several fundamental conceptual distinctions are typically confounded. First, does skill reside in persons, positions, or social relations? Second, is skill content unidimensional or multidimensional? And, third, does skill level refer to the content of a particular type of work or to the distribution of ability across an entire workforce? On the first point, the view that skill resides in an individual's acquired stock of capabilities, knowledge, and experience is prevalent in human capital theory (Becker, 1964), while the alternative view that it resides in the structural performance criteria of jobs is common in much sociological research (Spencer, 1983). Both perspectives tend to reduce skill to a reified attribute. However, the differentiation of skill levels within the workforce has been historically sensitive to labour market and workplace power relations.

At certain times, strong employers can impose formal hiring standards that are higher than actual job requirements, typically those concerned with management functions, or lower, typically for subordinate production roles. Similarly, strong professional organizations can establish restrictive entry requirements (Collins, 1979). While the general technical content of the production system and the state of the labour market at a given time establish parameters for applying individual capabilities (Harvey & Kalwa, 1983; Kohn & Schooler, 1983), attributing skill level to specific jobs can therefore more directly result from the strategic position of certain groups within the production process and the power of collective organizations. Perhaps the clearest illustration of this tendency has been the systematic denigration of the work skills of women in the home and in the paid work sectors where they have become numerically predominant (e.g., Gaskell, 1986). This power relations perspective provides a plausible explanation of why the most careful empirical studies of connections between entry requirements, actual task requirements, individual capability, and job performance have found either weak or even negative associations between these criteria (Diamond & Bedrosian, 1970; Squires, 1979). The primary interest of this paper is in *entry requirements* which

appear as the aspect of skill levels most directly involved in constituting the class structure of production. As a group of American corporate executives stated 30 years ago:

Industry places a high value on the college degree, not because it is convinced that the four years of schooling insure that individuals acquire maturity and technical competence, but rather because it provides *an initial starting point of division* between those more trained and those less trained; those better motivated and those less motivated; those with more social experience and those with less. (cited in Squires, 1979, p. 143)

With regard to the second distinction noted above, while many studies have treated skill as a unidimensional variable, at least two basic dimensions of skill content can be distinguished both conceptually and empirically. These dimensions have been termed *substantive complexity* and *autonomy-control* (Littler, 1982; Spenner, 1983). The degree of complexity of substantive job content can vary from a wide array of tasks to a few very narrow ones, while the degree of autonomy may vary from complete discretionary judgment to strict adherence to a prescribed routine. These dimensions emerged as major underlying factors in an extensive recent empirical analysis of the task requirements of Canadian occupations (Hunter & Manley, 1982), indicating that both complexity and autonomy should be taken into account in assessing job skill levels.

On the third point, variations in the skill content of a particular type of job should not be confused with skill distribution across the entire employed workforce. Skill changes may occur through the upgrading or downgrading of the content of specific jobs or through the creation or demise of general types of work and the recomposition of the structure of the workforce that follows (Spenner, 1983). While such compositional shifts often provide the context for skill content changes, neither can be simply inferred from the other. The focus of this paper is on the distribution of entry requirements among the entire currently employed workforce.

While all human labour entails a degree of unity of head and hand (Kusterer, 1978), the most basic historical division has been between mental and manual labour. Mental labour is defined by the use of nonempirical form abstractions in planning and design work, manual labour by the application of empirically established methods to concrete materials (Sohn-Rethel, 1978). This division has been substantially extended in the machine-driven production processes of all advanced industrial economies where it is now widely regarded as the basis of a general distinction between middle-class and working-class positions.² However, even the most general account of the actual division of skill

levels within the labour process of advanced *capitalist* economies should go beyond a simple manager and worker dichotomy to consider also ownership status which is intimately linked with the autonomy-control dimension of skill content. The fully developed capitalist labour process shows owners generally possessing a greater degree of autonomy-control in their work than either managerial or other employees.

The distinctions between mental and manual skills and between owners and employees are confounded in the standard occupational categories typically used in empirical research in that such categories often aggregate several types of owners with either professional-managerial or manual labour jobs (Wright, 1980a). For example, many professional occupational categories such as lawyers, engineers, or accountants include numerous employers, the self-employed, managers, and subordinate employees, and many manual occupations such as butchers or carpenters include employers, the self-employed, and subordinate employees. An occupational continuum ranging from unskilled manual to professional categories may capture much of the variation in the complexity dimension of job skills but does not adequately comprehend the autonomy-control dimension of skill content.

Historical materialist analyses of work that emphasize relationships within the labour process rather than occupational categories per se (Braverman, 1974; Marx, 1867/1967) provide a basis for a fuller account of substantive complexity and autonomy-control dimensions of job skills as well as the negotiated character of entry requirements for different class positions in contemporary production systems.

Class positions are distinguished here by the extent of control exercised over several basic production dimensions, namely the investment of resources, the technical design of the work process, and the supervision of the worker.³ Very broadly, we can think of the current class structure of advanced capitalist economies in terms of: *capitalists* who own the major private means of production, *proletarian workers* who own only their labour power and have no real control over other workers, *intermediate workers* who have some control over others' labour and/or the design of the work process but remain subordinate to capitalists' ownership claims or production decisions, and the *dependent population* not engaged in paid labour and reliant on business production for their material subsistence, many living in households with either capitalists or intermediate or proletarian workers. Among capitalists, *corporate executives* can be distinguished from *small employers* who must continue to work alongside their employees and from *rentier capitalists* who live off investment income without direct participation in the workplace. Four types of intermediate workers are identifiable. Most distinct are the *self-employed* or "old petite bourgeoisie"

who work for themselves without employing other paid labour while generally becoming less independent of corporate capitalist enterprises. Within private firms and state organizations alike, *managers* are technocrats responsible for disciplining the rest of the workforce and conducting technical design and planning activities. Subordinate to managers are *supervisors* with immediate disciplinary control over subordinated workers but little assigned control over technical production design. *Professional employees* are those who have no assigned supervisory role with other workers but are responsible for the technical planning involved in the design of production systems. Among proletarians, the "working class," *industrial workers* engaged in manufacturing and related transportation activities may be distinguished from *non-industrial workers* involved in clerical, sales, and service activities. Finally, the *dependent population* contains many people who are instrumental in the daily and generational reconstituting of the workforce and is variably composed of homemakers, students, temporarily unemployed workers, and pensioners, as well as *lumpen* elements such as criminals and derelicts.

It is posited that the actual skill levels currently required of the employed workforce vary significantly among class positions both in their complexity and autonomy and in the restrictiveness of their entry requirements. The work of corporate executives and small employers involves high levels of discretionary judgment and varied but moderately high technical complexity, but there is relatively little social restriction on entry into small business pursuits while entry into executive posts at the top of the corporate hierarchy is highly restricted. The self-employed typically have as much or more discretion in their work; skill complexity varies widely, and there are frequently no specific entry requirements. Managers and professional employees tend to work in areas of high technical complexity demanding discretionary judgment and restrictiveness of entry. Supervisory employees usually require more comprehensive or complex knowledge of the relevant production process than do their subordinates; their disciplinary discretion is very limited compared to that of managers, their role in technical planning is still more so, and they exercise less internal control over entry. Proletarian jobs now commonly involve a relatively limited array of technical tasks and substantial reliance on prescribed routines. The jobs of nonindustrial workers differ little from those of industrial workers in terms of skill levels, and the entry requirements for both groups tend to be much lower than those for groups above them in employee hierarchies. The major current division in all three aspects of required skill and, most pertinently, in restrictiveness of entry requirements is therefore posited between the corporate executives and the hired professional and managerial

employees doing most of the mental labour, on the one hand, and the proletarian workers doing most of the manual labour, on the other.

From this general perspective, some conceptual limitations of prevalent theses about skill upgrading or downgrading in the workforce can be identified. The simple upgrading thesis posits that the continuous development of greater skills is required by industrialization. Supporting research has generally regarded skill as residing in individuals, presuming that increased schooling leads to more skilled jobs, with a focus on the complexity dimension of job content (Kerr, Dunlop, Harbison, & Myers, 1973). The simple downgrading or deskilling thesis claims that capitalist management of technological change has made a growing proportion of jobs routine and fragmented. Supporting research has generally regarded skill as residing in jobs and being determined by external structural imperatives, and the downgrading of the skill content of particular types of work such as skilled crafts is presumed to reflect compositional shifts in the workforce as a whole. Its main focus has been on the autonomy-control dimension of job content (Braverman, 1974). Several more nuanced theses suggest that simultaneous upgrading and downgrading tendencies may be occurring and recognize a more complex interplay of technical dimensions of skill content with the social construction of job requirements (see Littler, 1982; Wood, 1982).

What is reasonably clear over the long term is that employment in the advanced capitalist societies has become increasingly concentrated in corporate firms and state organizations while self-employment has declined, production systems have become increasingly machine-driven, and the various aspects of the labour process have become more continuous and interdependent (Aglietta, 1979). Several long-term consequences are now documented (Burris, 1980; Cuneo, 1983; Przeworski, 1977; Wright & Martin, 1985). First, a declining proportion of the total population is required to produce goods and services while married women, previously largely restricted to unpaid household labour, have been both encouraged and compelled to join their spouses in seeking hired employment. Thus there has been increasing structural unemployment among the dependent population along with growing pressure on parts of this reserve labour pool to increase their entry skill qualifications in order to remain eligible to compete in more restricted labour markets. Second, the broad range of scientific and technical design, maintenance, co-ordination, and control tasks in advanced production systems requires a growing number of highly trained specialists able to exercise discretionary judgment over such matters and, hence, a relative expansion of the numbers of professional and managerial employees. Third, employed proletarian workers are expected to perform increasingly standardized

and specified tasks which may require substantial basic literacy, numeracy, and physical dexterity skills (to follow changing machine-driven routines) but which minimize workers' capacity to plan their own work. As the Education Group of the Centre for Contemporary Cultural Studies stated: "Capital intensive industry therefore produces three main effects: it repels labourers from production back into the labour market where they may be unemployed; it produces a limited requirement for technically qualified labour; and it dispossesses manual labour of concrete skills and competencies" (1981, p. 151). These tendencies are by no means absolute. Consider, respectively, the growth of new labour-intensive production within such sectors as the post-War state or certain current service industries, the elimination or routinization of some managerial functions and professional work with machine-paced production, and experiments in workers' self-management achieved by some organized workers or encouraged by some employers seeking more efficient production. Such examples suggest that both working conditions and skill requirements continue to be contingent on the negotiating strengths and strategies of employers and employees in particular settings. But the dominant historical tendencies in capitalist production systems are so deeply established that the present study expects to find substantial divisions in job entry requirements between proletarian workers and those above them in employment hierarchies.

MEASURES OF CLASS STRUCTURE AND JOB ENTRY REQUIREMENTS

The data in this paper are drawn from the OISE Survey of Educational Issues, a mass opinion survey conducted regularly in Ontario since 1978.⁴ The samples for these surveys have been designed to represent the Ontario population 18 years of age and older. The selection process involves a modified probability sample in population centres of over 1,000 persons and a quota sample in rural areas. The samples have been weighted by census age, sex, and educational attainment profiles to correct slight imbalances in representativeness. In the 1984 survey, a sample of 1,046 respondents were interviewed in their homes during September. As corporate executives are too small a group to appear in usable numbers within a general population sample, special random samples were drawn from the *Directory of Directors* (*Financial Post*, 1984), and in 1984, 127 corporate executives replied during September to a mailed version of the same questionnaire. The questionnaires for the several surveys have been designed with the aid of representatives from various Ontario interest groups, with extensive pilot testing. They contain items on a wide variety of educational issues. Measures of class structure

are available in each survey, but adequate measures of job entry requirements are provided only by the 1984 survey.⁵ The present analysis is restricted to those respondents who were employed at the time of the survey.

Most prior estimates of job skill requirements have been based on General Educational Development scale (GED) ratings of occupational titles. The GED scale, with values from 1 to 6, attempts to rate occupations in terms of required levels of literacy, numeracy, and cognitive reasoning skills (Canada, 1971; U.S. Department of Labor, 1977). While not explicitly designed for the purpose, the GED scale has been used by both Canadian and U.S. researchers to estimate skill requirements of the labour force (Burris, 1983; Jones, 1980; Rumberger, 1981). This scale is clearly more concerned with substantive complexity than autonomy or control. Indeed, GED levels have been found to have very low relevance to autonomy and control factors in a recent multi-dimensional analysis of skill requirements of Canadian occupations (Hunter & Manley, 1982). Spenner (1983) has noted several other measurement validity problems of the GED scale, including its close identity with social status and a tendency to overestimate skill increases. There is also the considerable problem of equating GED ratings with levels of schooling, something which has generally been handled quite arbitrarily.

Numerous recent observers of the impact of high technology have inferred a general upgrading trend in job skill requirements (e.g., Allmand, 1981; Cetron, 1983; Employment, 1981). But the limited amount of specific empirical research on aggregate-level changes in educational requirements suggests a more complex picture. U.S. studies of aggregate changes in skill requirements using occupation-based GED ratings have found definite overall increases over the 1950–76 period in the proportion of jobs requiring post-secondary level education (Berg, 1970; Rumberger, 1981). But Rumberger has also found that:

... the overall effects of shifts in the composition of employment in the economy and changes in the skill requirements of individual jobs between 1960 and 1976 resulted in the movement of the aggregate distribution of skills toward the middle and upper-middle and away from the ends of the range. In other words, the distribution of job skills within the U.S. economy appeared to narrow during this period. (p. 72)

On the basis of one of the most extensive reviews of prior studies of skill requirements, Squires (1979) concluded that no systematic upgrading has been uncovered. More recently, Spenner (1983) has suggested that no clear verdict is currently possible but tentatively inferred a picture of approximate aggregate stability in the post-World War II period along

with substantial upgrading and downgrading within workforce sectors. Finally, the most detailed recent projections of the occupational structure of American and Canadian workforces suggest that most employment growth will be in low status manual jobs and encourage inferences about the future prevalence of skill downgrading (see Harvey & Blakeley, 1985; Levin & Rumberger, 1983).

Unfortunately, most of the empirical research on aggregate trends in skill levels has not distinguished explicitly between entry requirements and actual job process requirements. Moreover, it remains entirely occupation based rather than class based. Furthermore, the most recent actual data for the aforementioned direct studies of skill levels were collected in 1978. The data from OISE surveys provide estimates of structural changes in the class composition of the employed Ontario workforce from 1978 to 1984 and measures of job entry requirements in 1984. The class position variable is measured according to prior definitions using a series of items which distinguish employers and the self-employed from employees and probe the extent of social authority and technical design control in respondents' work.⁶ The 1978 and 1984 findings are summarized and compared in Table 1. When sampling tolerances are considered, no significant changes in class structure are detected over this six-year term ($p > .05$).⁷ In terms of the major posited skill division between mental and manual labour, the proportions of intermediate and proletarian workers in the employed workforce appear to have been quite stable. It should be noted, however, that additional data indicate an increase in the dependent population, especially the temporarily unemployed. In any event, while there clearly has been substantial restructuring within many firms and recomposition within economic sectors over the several business cycles between 1978 and 1984, no major aggregate-level recomposition of the overall distribution of capitalist, intermediate, and proletarian class positions in the employed Ontario workforce seems to have occurred during this relatively short period. In this context, we can assess the entry requirements of the current employed workforce.

First, several substantial interactions of age and gender with class position should be noted. The age distributions within most class positions in the employed Ontario workforce are generally similar with small majorities over 35 years of age. However, the majority of professional employees are under 35 with few corporate executives under 35. Furthermore, age cohort comparisons are probably most meaningful among the workforce from age 25 to 55. Large proportions of the 18 to 24 age group are still at school, while the remainder are disproportionately unemployed. Those over 55 have begun to leave the active labour force

TABLE 1
Class Structure of the Employed Ontario Workforce, 1978 and 1984

General Class Location	Specific Class Position	% of Employed Workforce		N	
		1978 ^b	1984 ^b	1978	1984
Capitalist	Corporate executives	1	2	7	13
	Small employers	9	7	55	40
Intermediate	Self-employed	6	5	39	31
	Managers	7	8	43	45
	Professional employees	13	14	81	84
	Supervisors	16	15	97	89
Proletariat	Nonindustrial workers	26	27	162	159
	Industrial workers	19	19	115	110
	Residual workers ^a	3	3	16	19
Total Employed Workforce		100	100	616	591

^aProletarian workers for whom there is insufficient sectoral information to classify as either industrial or nonindustrial.

^bThe percentages in parentheses in these columns represent the proportions of all intermediate *employees* and all proletarians, respectively.

in large numbers, most notably those who, like many industrial workers, have more physically demanding jobs.

Class and gender interaction is more pervasive. Over 90% of corporate executives and over 80% of industrial workers are male, and over two-thirds of small employers, managers, and supervisors are male. While women now constitute about 40% of the employed workforce, most women remain in nonindustrial worker positions where they make up two-thirds of the employees. Only total employed workforce findings are presented here, but separate male and female analyses have also been conducted and significant gender differences will be noted.

The present assessment of entry skill requirements relies on respondents' own estimates for the question: "What general education requirement is set for the job you currently hold?" Comparison of an earlier U.S. study using such a self-report with those relying on translating GED ratings

into levels of schooling indicates that respondents' own estimates of requirements tend to be significantly lower (Burris, 1983; Duncan & Hoffman, 1978; Rumberger, 1981). This at least suggests that respondents do not tend to inflate their own job requirements in relation to Labour Department analysts' ratings. The 1984 Ontario results are summarized in Table 2. According to these data, about 29% of the employed Ontario workforce over 18 years of age perceive their job as requiring some form of post-secondary completion, with about 14% seeing need for a university degree. At the other extreme, about one-quarter have jobs with no specific educational requirements beyond elementary school. A comparable U.S. survey conducted in 1976 also found about one-quarter of the employed workforce with no specific educational requirements beyond elementary school but over 20% requiring university degrees (Duncan & Hoffman, 1978).

As Table 2 further indicates, the distribution of perceived educational requirements among class positions is broadly consistent with the previously posited skill differences. Most corporate executives, managers, and professional employees and over half of the supervisors feel required in their positions to attain some post-secondary qualifications. More specifically, most corporate executives think that their jobs require university degrees, as do about half of the managers and a smaller plurality of professional employees. Less than one-fifth of supervisors perceive that their work requires university degrees. Small employers and the self-employed have the most widely varied perceptions of educational requirements, with pluralities requiring less than a high-school diploma and about half requiring some form of post-secondary qualifications. In contrast to all other production classes, only small minorities of either industrial or nonindustrial workers consider that their employment requires any form of post-secondary training, and few in this group require university training. These data do show a substantial variation within and overlap between the educational requirements of intermediate and proletarian positions and, hence, indicate the possibility of mobility between proletarian and some higher level class positions. But it is clear that the entry requirement of a university education effectively serves to separate corporate executives as well as many managers and professional employees from the proletariat (cf. Robinson, 1982).

Cross-sectional surveys of perceived entry requirements cannot separate historical changes in skill levels from the respondents' particular stages of progress through the ranks within and between class positions (Spenner & Otto, 1982). But in the absence of longitudinal research, comparisons between age cohorts at one time may roughly indicate the direction of change over time, taking into account major contextual

TABLE 2
Perceived Level of Education Required for Employment by Class Position, Employed Ontario Workforce, 1984 (%)

<i>Class position</i>	<i>No specific Requirement</i>	<i>Some High School</i>	<i>High School Diploma</i>	<i>Some Community College</i>	<i>Community College Certificate</i>	<i>Some University</i>	<i>Undergraduate Degree</i>	<i>Graduate Degree</i>	<i>N</i>
Corporate executives	13	0	4	0	0	3	50	29	(127) ^a
Small employers	43	0	12	21	4	8	7	6	(40)
Self-employed	22	15	8	11	20	11	12	0	(31)
Managers	5	7	14	6	12	4	26	26	(45)
Professional employees	6	0	17	10	21	10	27	9	(84)
Supervisors	19	10	19	20	16	4	9	5	(89)
Nonindustrial workers	32	6	36	11	12	1	1	0	(159)
Industrial workers	37	18	20	11	12	0	1	0	(110)
Total Employed Workforce	24	8	22	12	15	4	10	4	(591)

^aThe corporate executive group in the general population sample ($N = 13$) is replaced by the supplementary sample of corporate executives for detailed analyses in this and subsequent tables.

TABLE 3
Perceived Level of Education Required for Employment by Age, Employed Ontario Workforce and Selected Class Positions, 1984 (%)

Age Group	Total Employed Workforce			Corporate Executives		Professional Employees		Supervisors		Non-industrial Workers		Industrial Workers		N
	No Specific Requirements	Post-Secondary	Certification	No Specific Requirements	Post-Secondary	No Specific Requirements	Post-Secondary	No Specific Requirements	Post-Secondary	No Specific Requirements	Post-Secondary	No Specific Requirements	Post-Secondary	
25 to 34	22	34		†	†	7	62	19	33	29	16	34	24	(191)
35 to 44	24	29		3	85	5	72	12	35	27	13	34	10	(135)
45 to 54	26	33		7	89	8	69	19	27	38	20	64	10	(107)
Total														
Employed Workforce	24	29		13	79	6	57	19	30	32	14	37	13	(591)

† N ≤ 5 cases

factors such as the aforementioned interactions of class positions with age and gender differences. As the first two columns of Table 3 summarize, there are no significant general differences in perceived entry requirements among the 25–34, 35–44, and 45–54 age groups of the total employed workforce ($p < .05$). Older workers are only marginally (below the level of statistical significance) more likely to have jobs with no specific educational requirements and no less likely to have jobs requiring post-secondary certification. Overall, these findings suggest that there may have been little net upgrading of job entry requirements for the entire Ontario workforce since the early 1960s. It is also of interest to observe that for the total employed workforce the distributions of self-reported entry requirements for males and females are very similar, with males only slightly more likely than females to require post-secondary certification (30% to 26%). Again this difference is not statistically significant. The only significant intra-class gender differences in required education are found among industrial workers where women are much more likely ($p < .001$) to have no specific educational requirements and therefore be relegated to the lowest rungs of job ladders and, conversely, among supervisors where more women than men must meet specific educational requirements ($p < .05$). However, such intra-class comparisons are limited by the very small sample numbers of women in proprietary and managerial positions.

When we look at class positions for which we have sufficient cases to compare across these age groups, several more specific patterns appear. As the remaining columns of Table 3 show, the most significant intra-class difference lies in the reduction of industrial workers' jobs with no specific educational requirements from about two-thirds in the 45–54 cohort to one-third in the 25–34 cohort ($p < .05$). Inter-class comparisons across these age groups suggest that the only notable difference in post-secondary educational requirements is also among industrial workers, with workers in the 25–34 cohort marginally more likely to define their jobs as having post-secondary certification requirements than those in the older cohorts; however, in this instance, age differences are not significant ($p > .05$). The educational requirements of other occupational classes show little difference across these three age cohorts. Thus, while the general level of educational requirements for the workforce as a whole does not appear to increase significantly across these age cohorts, the discrepancy in educational requirements between corporate executives and intermediate employees, on the one hand, and the declining numbers of industrial workers, on the other, may have decreased slightly. It should be recognized, however, that any such decrease results from increased use of high school diplomas and community college certificate qualifica-

tions for industrial jobs while university degree requirements remain the preserve of capitalist and intermediate class positions, especially corporate executives and professional and managerial employees, across all three age cohorts.

While such cross-sectional data are clearly limited grounds for trend inferences, the current Ontario findings on class-specific age differences in educational entry requirements are consistent with a lack of significant aggregate-level upgrading of the entry requirements of the employed workforce and a decreasing discrepancy between intermediate and industrial worker positions in job entry requirements over the past two decades. There is little evidence either here or in the most relevant U.S. studies (Squires, 1979) of recent aggregate-level upgrading of educational entry requirements. However, even in the youngest comparable age groups there is a large gap between the reports of corporate executives and intermediate employees concerning their need for post-secondary certification and those of the proletariat.

SCHOOLING AND UNDEREMPLOYMENT

The connection between schools and paid workplaces in advanced capitalist societies has been mediated predominantly through individual transactions in labour markets. The large increase in numbers of educated people entering the labour market over a decade of slow economic growth has served to emphasize both the short-term relative autonomy of school and work relations and the contradictions inherent in the school's role in producing an appropriately skilled supply of labour for a capitalist economy (Carnoy, 1982; Gintis & Bowles, 1981; Levin, 1980). The central contradiction can be briefly outlined. There is a generic need in any society based on machinofacture for a technically knowledgeable labour force. Any hierarchically organized form of advanced machinofacture needs both a general pool of manual labourers with the basic cognitive skills to follow abstract rules and perform operational detail tasks and other groupings of mental labourers with sufficient general scientific knowledge in specialized fields to plan the adaptation and redesign of various machinofacture production systems. What is distinctive about advanced capitalism's specific educational needs is that they are continually changing as the central production techniques are revolutionized in competitive pursuit of profits while they must continually be mediated through individual labour market transactions. Thus, if the class structure of paid work is to be reproduced effectively, after first offering free educational access in response to popular demand and in order to provide basic technical skills, the schools must then

attempt to restrict opportunities in terms of curricular scope and of the numbers permitted to achieve their educational aspirations; moreover, the schooling process must appear to remain independent from capitalist enterprises and avoid drastically upsetting popular educational aspirations. As Meyer has expressed it: "The inherent contradiction confronting education in a capitalist society functioning under the guise of a democracy is the need to *appear* to promote equality while successfully producing the differentiated and unequal labour power demanded by corporations and other employers" (1977, p. 92).

As long as individual transactions in labour markets remain the major mediating mechanism, substantial discrepancies are likely between the entry requirements of jobs and the educational qualifications of applicants. Moreover, from the vantage points of both employers and prospective employees, there is likely to be a general tendency in advanced capitalism toward qualifications exceeding requirements in aggregate terms. Capitalist employers have historically used reserve labour pools to discipline workers' demands; reserve pools of highly educated people can now allow the extension of this tactic to mental as well as manual labour. At the same time, prospective employees are likely to continue to seek any form of schooling that might enhance their individual chances for attractive jobs, most notably post-secondary programs.

The most evident change in schooling over the past generation has certainly been the substantial growth of high-school completion and post-secondary level enrolments (e.g., Squires, 1979). Indeed, even after the imposition of severe access restrictions on many professional programs, general university and community college enrolments in Canada have continued to grow (Gushue, 1986). In the wake of the protracted economic slump, one could suggest that higher education's capacities to produce currently exceed the inclination of capitalist production systems to use highly educated labour (Gorelick, 1983). However, aggregate-level overproduction of educated labour is not necessarily a *fundamental* problem in capitalist societies, as long as the division between mental and manual labour at the core of capitalist relations of production can be reproduced (Browne, 1981).

The central issue concerns the success of schools in reproducing the division of mental and manual labour between the corporate executive and intermediate employee groups and the proletarian groupings in the workforce. There is considerable evidence that markets for mental and manual labour are generally separate from each other and segmented within themselves (Gordon, Edwards, & Reich, 1982). However, if those relegated to manual jobs were becoming increasingly "overeducated"

relative to those above them in workplace hierarchies, this would suggest a significant problem in the reproduction function of school-workplace relations.

MEASUREMENTS OF UNDEREMPLOYMENT

To be underemployed is to possess higher educational qualifications than one's job requires. Conversely, one may also be overemployed. The underemployment variable can be estimated by comparing the congruence of job occupants' formal educational attainments with the educational level required for their jobs. In this section, we will examine the general congruence of self-reported educational attainments and job entry requirements for the employed Ontario workforce, as well as for different class positions. The aggregate level pattern is summarized in Table 4. The figures on the dotted diagonal in this table indicate matching educational attainments and job entry requirements. Those below the diagonal represent the proportions of the total employed workforce whose attainments exceed their perceived job requirements, and those above the line have perceived job requirements that exceed their attainments. According to this survey, about one-third (34%) of the Ontario workforce perceive that they have attainments that exceed their job entry requirements and that they are, therefore, underemployed. A slightly larger proportion (38%) have matching attainments and requirements, and over one-quarter (28%) have requirements exceeding their attainments. It should be noted here that relatively small proportions of Ontario workforce appear to be either highly underemployed (5%) or highly overemployed (6%). *Highly*, in this sense, means a difference between attainment and requirement exceeding one certification level, for example, no school diploma versus community college certificate. Comparable U.S. findings by Duncan and Hoffman (1978) have revealed a somewhat greater extent of underemployment there.⁸

The extent to which schooling has served to reproduce the separation of mental and manual labour can be assessed by examining the levels of educational attainment and underemployment between class positions. As the first two columns in Table 5 suggest, the range of educational attainments between class positions in the Ontario workforce is about as great as the range of job entry requirements summarized in Table 2. Most of this variation occurs in university attainments. The vast majority of corporate executives have post-secondary certification with over two-thirds holding university degrees. Smaller majorities of professional employees and managers have attained post-secondary certification, most commonly university degrees. Supervisors tend to have somewhat lower

TABLE 4
Educational Attainments of Workers by Perceived Educational Requirements of Jobs, Employed Ontario Workforce, 1984 (%)

<i>Educational Attainments of Workers</i>	<i>Perceived Educational Requirements of Jobs</i>							<i>Total</i>	<i>N</i>
	<i>No Specific requirement</i>	<i>Some high school</i>	<i>High school diploma</i>	<i>Some community college</i>	<i>Community certification college</i>	<i>Some university</i>	<i>Under- graduate degree</i>		
Elementary or less	7.4	1.0	1.3	2.0	1.1	.7	.5	0	(84)
Some high school	8.3	3.8	6.2	1.9	.8	.3	.2	.3	(128)
High school diploma	3.3	2.3	7.2	1.5	1.4	.1	.3	.3	(96)
Some community college	3.1	.2	2.6	3.4	2.5	.7	.4	.4	(79)
Community college certificate	1.2	.9	2.6	2.2	7.4	.8	.4	.3	(93)
Some university	.3	0	1.2	.3	.4	.8	1.0	.4	(26)
Undergraduate degree	.8	0	.5	.9	.9	.5	5.4	.9	(59)
Graduate degree	0	0	.4	.1	.1	.3	1.2	1.8	(23)
Total	24.4	8.3	22.1	12.2	14.6	4.3	9.6	4.5	(591)

TABLE 5
Educational Attainment and Underemployment by Class Position, Employed Ontario Workforce, 1984 (%)

	Educational Attainment		Degree of Congruence			N
	Post-secondary certification	At least university degree	Over-employed	Matching attainment and requirement	Under-employed	
Corporate executives	91	69	38	33	29	(127) ^a
Small employers	37	19	25	34	41	(41)
Self-employed	15	3	61	14	25	(31)
Managers	54	38	41	41	18	(45)
Professional employees	58	35	28	49	23	(83)
Supervisors	30	16	24	44	32	(89)
Nonindustrial workers	18	2	23	34	43	(159)
Industrial workers	15	2	26	34	39	(110)
Total Employed Workforce	29	14	28	37	34	(591)

^aSpecial supplementary sample of corporate executives

post-secondary attainments. In contrast to all intermediate employees, only small minorities of both industrial and nonindustrial workers have attained any post-secondary qualifications, these typically being community college certificates. Small employers tend to have the most varied educational attainments, significantly lower than corporate executives, but generally higher than the self-employed and proletarians. The attainments of the self-employed are similar to those of proletarian workers.

While the gap in post-secondary attainments between the corporate executives and intermediate employees and the proletariat therefore appears very large, the question remains whether the extent of underemployment varies substantially by class position and, more specifically, whether proletarian workers are significantly more overeducated. If so, the reproduction of the mental and manual division of labour could still be in jeopardy. As the remaining columns of Table 5 indicate, the general differences in the extent of underemployment between class positions in Ontario appear relatively minor, especially compared with the class differences in average educational attainments. Industrial and non-industrial proletarian workers' underemployment levels of about 40% slightly exceed those of most other occupational classes, but proletarian workers are only significantly more underemployed than managers ($p < .05$) whose lower level of underemployment is consistent with their status as the employees most dependent on higher education qualifications. Indeed, in light of their low average educational attainments, the overqualification of proletarians is largely a function of no specific educational entry requirements for many of these jobs. The most notable class difference appears to be the high level of overemployment among the self-employed, but it should be remembered that the entry requirements of self-employment are least likely to be externally constrained and therefore least closely related to formal educational attainments. In general, neither underemployment nor overemployment are found to be simple class-specific tendencies.⁹

It should also be noted that males are more likely ($p < .001$) to be overemployed than females (35% to 18%), a fact which suggests that men have a better chance than women of obtaining jobs for which they are not formally qualified. However, male and female workers differ little in their extent of underemployment (36% versus 33%). These patterns are similar across most intermediate and proletarian class positions. Again, the inter-class differences in underemployment do not indicate significantly greater underemployment for the most subordinate class positions.

Once more, cross-sectional survey findings have very limited capacity to

TABLE 6
Extent of Underemployment by Age Groups, Employed Ontario Workforce and Selected Class Positions, 1984 (%)

Age Group	Total employed workforce	Corporate executives	Professional employees	Supervisors	Nonindustrial workers	Industrial workers	N
25 to 34	41	†	26	44	48	41	(169)
35 to 44	25	21	21	34	29	23	(135)
45 to 54	28	14	22	17	45	37	(107)
Total							
Employed Workforce	34	29	23	32	43	39	(591)

† N ≤ 5 cases

suggest historical trends in the extent of underemployment. However, as the first column of Table 6 indicates, a somewhat greater extent of underemployment appears among the 25 to 34 age cohort than among older age groups in the Ontario workforce, with more than 40% of the younger age group being underemployed. This pattern expresses increasing educational attainments while perceptions of job entry requirements display no significant aggregate-level change across these age groups (i.e., the proportion having post-secondary certification nearly doubles, from 22% of the 45 to 54 cohort to 39% of the 25 to 34 cohort). As the remaining columns of Table 6 illustrate, when we look at class positions across these age groups, there is only a slight long-term trend to increasing underemployment within most class positions. The notable exception is the supervisory position, in which underemployment appears significantly greater in the 25 to 34 age group than in the 45 to 54 age group ($p < .05$). Supervisory roles have represented the major channel of upward mobility for proletarian workers, and these data may suggest that this channel is becoming increasingly congested. The level of underemployment among 25 to 34 year-old supervisors is very similar to that among 25 to 34 year-old proletarians, but the underemployment level among the latter differs little from that among 45 to 54 year-old proletarian workers. There is some suggestion, however, of a more recent trend to greater underemployment in the differences between 25 to 34 and 35 to 44 year-old proletarians ($p < .05$). It must be added here that, among the fraction of the 18 to 24 age group in the 1984 Ontario survey that has obtained employment, over half are underemployed in their largely proletarian jobs (Livingstone, Hart, & Davie, 1985).

The major earlier Canadian study using similar self-reported measures (Clark & Zsigmond, 1981, p. 72) focussed on the 1976 cohort of post-secondary graduates several years after graduation; the estimated extent of underemployment of Ontario university graduates (34%) was lower than that of the present study for the entire 25 to 34 cohort of which these graduates were an older portion. Another Ontario survey of late 1970s university graduates shortly after their job market entry, using more conservative GED-based measures, found that about half of these graduates were underemployed (Anisef, 1981). The limited amount of available data, therefore, is consistent with a recent trend toward increasing underemployment among both workforce entrants generally and highly qualified people in particular.

Such comparatively high levels of underemployment for young employees may partly reflect the low positions of recent entrants on job ladders, and they probably also indicate very restricted labour markets for entrants in a period of economic slump. Indeed, it is outside the employed workforce,

amid the growing dependent population and especially among increasing pools of young manual and mental reserve labour, that capitalist economies experience their most difficult immediate reproduction problems (Education Group, 1981; Jordan, 1982; Skill Development Leave Task Force, 1983; Teichler, Hartung, & Nuthmann, 1980; Windschuttle, 1979). In any case, the trend of increasing underemployment in the employed Ontario workforce does not appear to have resulted yet in many significant class differences in the extent of underemployment, at least in relation to job entry skill requirements. Moreover, those in both mental and manual labour pools have generally remained highly segmented themselves as well as largely politically passive to date (Britain's Jobless, 1982; McKay, 1983; Schlozman & Verba, 1979). In general, then, while the educational attainments of the employed workforce may have risen more quickly than job entry requirements, schools and labour markets appear to continue reproducing the mental and manual skill division that is at the core of the class structure of advanced capitalist workplaces.

FUTURE PROSPECTS

The 1984 OISE survey findings suggest that, in the post-War context of considerable increases in the average educational attainment of the employed Ontario workforce, the gap between mental and manual labour class positions in job entry requirements may have decreased somewhat but remains very large. At least a quarter of those in most class positions are underemployed in their jobs, and the proportion appears to be growing. Further longitudinal research is needed to confirm these patterns, especially regarding job entry requirements and their relation to other aspects of job skills. But several potential implications may be registered here.

On the one hand, the presence of overqualified employees and reserve pools of educated labour in the context of capital accumulation and state fiscal crises encourages both corporate leaders and some traditional intellectuals to promulgate more elitist models, especially for university education (Bercuson, Bothwell, & Granatstein, 1984; Botkin, Dimancescu, Stata, & McClellan, 1982), as well as more explicit streaming mechanisms at lower levels of schooling. The contrasting processes of reproducing mental and manual labour may become more starkly evident as such new corporatist educational policies are implemented (Goldstein, 1984; Wexler & Grabiner, 1985).

On the other hand, the existence of an increasingly highly schooled yet underemployed workforce suggests a very considerable potential

for greater utilization of current job skills and, in particular, for both intermediate and proletarian employees to exercise greater discretionary control within the workplace and for proletarians to break down socially constructed divisions between mental and manual work, with work alliances being formed with intermediate employees against corporate owners. Even if capitalist implementation of high technology eventually serves to further polarize job entry requirements, the general educational requirements for creating productive workers and good citizens are unlikely to be much reduced. As Levin and Rumberger argue:

Everyone should acquire strong analytic, expressive, communicative, and computational skills as well as extensive knowledge of political, economic, social and cultural institutions. These aptitudes and knowledge are required for understanding daily experiences and for ensuring access to social opportunities Second, since we cannot predict in any precise sense which jobs will be available to particular persons, which jobs they will select from among those available, and what the characteristics of jobs will be over a forty year working life, it is best to provide students with a strong general education and an ability to adapt to a changing work environment. Such adaptation requires a sufficient store of information about culture, language, society and technology as well as the ability to apply that information and acquire new knowledge. (1983, pp. 11-12)

Thus, in terms of both human capabilities and economic imperatives, there is likely to be growing popular demand for advanced education that combines general academic and general vocational preparation, that is, a genuine *polytechnical* form of education (Castles & Wustenberg, 1979).

In short, the fundamental educational contradiction in advanced capitalist economies of simultaneously reproducing a division of mental and manual labour through a universally accessible school system is likely to persist into the foreseeable future. Corporate-led initiatives to rationalize and restrict post-secondary access are now increasingly coming into direct conflict with continued demand for advanced education (Livingstone, 1985). It is at such moments that the school's role in reproducing capitalist relations of production becomes most deeply problematic and renegotiable.

NOTES

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² In transitional socialist societies, for example, distinctions between the intelligentsia and manual labourers have become the fundamental social division. See Bahro (1978); Konrad and Szelenyi (1979).

- ³ Such basic dimensions of class relations have been developed theoretically in many recent texts; for an overview, see especially Wright (1980b). A fuller definition of the class positions identified in this paper in terms of these basic definitions may be found in Livingstone (1983). One of the most contentious issues in this regard is the treatment of intermediate classes within production relations; for the range of current approaches, see Walker (1978) and Johnson (1982).
- ⁴ For detailed accounts of the design and sample composition of these surveys, see Livingstone (1979); Livingstone & Hart (1980; 1981); Livingstone, Hart, & McLean (1983); and Livingstone, Hart, & Davie (1985).
- ⁵ A cruder item on job entry requirements was also included in the 1982 OISE survey. The 1982 question did not specify partial post-secondary attainments (i.e., "some community college" or "some university") or distinguish between bachelor level and graduate degrees as possible job requirements. The data are therefore not fully comparable with those of the 1984 survey, but the general proportions are found to be very similar.
- ⁶ A source of income question was used to distinguish proprietors from employees; a number of employees question was used to differentiate proprietors into corporate executives (>50 employees), small employers (<50 employees), and the self-employed (no employees). In addition to detailed occupational activity descriptions, an item on supervisory and planning responsibilities was used to distinguish different types of intermediate employees from proletarian workers. A conventional work sector question was used to distinguish industrial (resource extraction, manufacturing, construction, and transportation) workers from nonindustrial (government, finance, trade, and service) workers. The operationalization of the class position variable is fully discussed in Livingstone (forthcoming).
- ⁷ Statistical significance levels reported in this paper refer to chi-square tests where a statement concerns the relationship of an independent variable to the full distribution of the dependent variable (for example, age by educational job entry requirements). Significance levels for paired comparisons are reported for *t*-tests. In these instances, results are for dependent variables dichotomized on the category of interest. Further discussion of sampling error in differences between percentages for respective subgroups in this survey may be found in Livingstone, Hart, & Davie (1985, pp. 56–59).
- ⁸ The comparable figures were 42% underemployed, 46% matching education, and 12% overemployed (Duncan & Hoffman, 1978, p. 238). Predictably, other U.S. studies based on GED ratings have found lower levels of underemployment. Burris' (1983) analysis of 1977–8 data suggests that about 20% of the U.S. workforce is overeducated while more than 40% is undereducated. Another more diffuse estimate is provided by Staines & Quinn (1979) who found that in a 1977 U.S. survey over one-third of the adult employed population reported skills not utilized in their present job.
- ⁹ It should be noted that general underemployment rates do not vary significantly by educational attainment. Both high-school graduates and those with undergraduate university degrees have underemployment rates of about 35% in this sample.

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Diese Abhandlung untersucht wie das Schulwesen die allgemeine Klassenstruktur der Arbeitskräfte in Ontario, ins Besondere die Unterteilung zwischen geistigen und körperlichen Arbeitskräften, fortpflanzt. Das Schrifttum über Ebenen der handwerklichen Fertigkeiten wird besprochen und Eingangsbedingungen für Erziehung und Ausbildung werden unterschieden von anderen Aspekten der handwerklichen Fertigkeiten. Die Erhaltung eines angemessenen Fähigkeitsunterschiedes zwischen Geschäftsführern/mittleren Angestellten als geistige Arbeitskräfte einerseits und proletarischen Arbeitern andererseits, wird für die Fortpflanzung der Klassenstruktur in fortschrittlichen kapitalistischen Wirtschaften, als grundlegend angesehen. Daten einer Umfrage in Ontario in 1984 über berufliche Eingangsbedingungen (von den verschiedenen Berufen selbst erstellt) und das Erreichen von Erziehungs- und Ausbildungsleistungen sowohl wie über die Kongruenz zwischen Bedingungen und Leistungen werden für alle angestellten Arbeitskräfte und für die verschiedenen Berufsklassen analysiert. In den letzten Jahrzehnten deuten die Ergebnisse auf nur geringe Erhöhungen der durchschnittlichen Eingangsbedingungen in Ontario an und, daß die Lücke zwischen Geschäftsführern/mittleren Angestellten und proletarischen Arbeitern in Bezug auf Fortbildungsbedingungen weiterhin sehr groß bleibt. Obwohl die Erziehungs- und Ausbildungsleistungen unter jungen Angestellten meistens höher sind als die Eingangsbedingungen, ist diese Situation bei allen Berufsklassen nicht ungewöhnlich. Es scheint daher, daß die Unterteilung zwischen geistigen und körperlichen Arbeitskräften, wenigstens was die Eingangsbedingungen betrifft, bisher wirksam bei den angestellten Arbeitskräften erhalten worden ist.

Esta investigación explora cómo la escolaridad reproduce la estructura general de clases sociales de los trabajadores de Ontario, dando especial atención a la división entre trabajo mental y trabajo físico. Se pasa en revista la literatura general acerca de niveles de habilidades necesarias para el trabajo y se hace la distinción entre los requisitos de escolaridad y los otros aspectos de habilidades necesarias para el empleo. Se propone que el mantenimiento de la distinción entre personal ejecutivo e intermedio de una corporación, que se considera como haciendo trabajo intelectual, y los trabajadores proletarios que hacen trabajo manual es fundamental para la reproducción de la estructura de clases sociales en las economías capitalistas avanzadas. Los datos que se obtuvieron de una encuesta que se hizo en Ontario en 1984 acerca de los requisitos educacionales para entrar al empleo y los alcances educacionales propios, así como la congruencia entre los requisitos y los alcances, se analizan para toda la fuerza laboral y para las diferentes clases sociales. Los resultados indican que, en total, parece haber habido poca mejora en Ontario en los requisitos de entrada al empleo en décadas recientes, y que la brecha entre los requisitos de educación postsecundaria del personal ejecutivo/intermedio y trabajadores proletarios sigue siendo muy grande. A pesar de que los alcances educacionales tienen mayores probabilidades de exceder los requisitos entre los empleados más jóvenes, la incidencia de tal sub-empleo parece ser muy similar al de la mayoría de la clases sociales. Por lo tanto, por lo menos en relación a los requisitos de entrada al empleo, hasta la fecha la división entre trabajo mental y manual parece haber sido reproducida efectivamente en la fuerza laboral.

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