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## **Section 4.2** Employment and Education-Formal Training, Apprenticeships

**Work and Lifelong Learning Resource Base (WALLRB)**  
Materials for Teaching, Research and Policy Making

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Ontario Institute for Studies in Education of the University of Toronto

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1. Anderson, T., & Metcalf, H. (2003). *Modern apprenticeship employers: Evaluation study*. Nottingham: Department for Education and Skills.

This survey of 1500 Modern Apprenticeship (MA) employers was designed to update information on employers' perspectives and experiences of MAs and to identify items that may allow expansion of MAs among participating employers, quantity and quality of training, the significance of qualification attainment and completion and investigate issues related to current changes in MAs.

**KEY WORDS:** Apprenticeship Programs; Great Britain; Evaluation; Formal Training; Employment and Education.

2. Askilden, J. E., & Nilsen, O. A. (2005). Apprentices and young workers: A study of the Norwegian youth labour market. *Scottish Journal of Political Economy*, 52(1), 1-17.

Many countries have apprenticeship programmes that are important stepping stones into the labour market. Recruitment of apprentices seem to follow the business cycle. This pattern may be caused by firms' contemporaneous demand for labour, but may also be consistent with an investment hypothesis. A model, in which the tightness in the labour market is taken into account, is tested on a sample of Norwegian quarterly firm-specific data. Results give some support to an investment hypothesis. The apprentices replace some skilled labour but are recruited primarily based on the labour market situation. The wage level plays a minor role for recruitment of apprentices.

**KEY WORDS:** Fertility; Family Planning; Child Care; Children; Youth; Human Capital; Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Labor Turnover; Vacancies; Layoffs; Norway; Apprenticeship; Youth; Formal Training; Employment and Education.

3. Bailey, M. W. (1998). Early legal education in the United States: Natural law theory and law as a moral science. *Journal of Legal Education*, 48(3), 311-328.

An examination of the history of legal education covers the long period of law-office apprenticeship as the principal method of legal education in the United States and reviews trends in the period of formal education, the relationship between formal education and professional practice, the philosophical context for legal education, instruction in moral philosophy, and evolution of natural law theory.

**KEY WORDS:** Apprenticeships; Educational History; Educational Philosophy; Higher Education; Job Skills; Legal Education (Professions); Moral Values; Philosophy; Professional Education; Relevance (Education); Skill Development; United States History; Formal Training; Employment and Education.

4. Becker, A., Horn, L., & Carroll, C. D. (2003). *Work first, study second: Adult undergraduates who combine employment and post secondary enrollment. Post secondary educational descriptive analysis reports*. Washington: DC: National Center for Education Statistics.

Working adult undergraduates can be broken into two groups: employees who study (those who work full-time and pursue post secondary education to obtain skills necessary

to advance in their careers) and students who work (those who work part-time and attend school full-time). In 1999-2000 roughly two-thirds of working undergraduates aged 24 or older reported that work was their primary activity, and among these nearly 70% combined full-time work with part-time attendance. These working adults make up a large percentage of the undergraduate population and nearly one-half received some sort of financial aid, including one-quarter who received aid from their employers. However, full-time work and part-time attendance combined with family responsibilities appeared to be barriers to completing a credential. Despite the fact that most employees who study thought it was important to earn a formal credential, 62% had not done so within 6 years. Moreover, among those who left, most did so in their first year. In contrast, their counterparts whose focus was on postsecondary enrollment students who work experience more positive educational outcomes. These students, who were more likely to have fewer family responsibilities, were more likely to earn post secondary credentials, especially bachelor's degrees.

**KEY WORDS:** Academic Persistence; Adult Students; Bachelors Degrees; Educational Certificates; Fringe Benefits; Full Time Students; Nontraditional Students; Outcomes of Education; Part Time Employment; Part Time Students; Post Secondary Education; Student Employment; Student Financial Aid; Undergraduate Students; Withdrawal; Formal Training; Employment and Education.

5. Bilginsoy, C. (2005). Registered apprenticeship training in the US construction industry. *Education & Training, 47(4-5)*, 337-349.

This paper aims to compare the performance of building trades apprenticeship programs in the USA, sponsored jointly by employers and unions, with those sponsored unilaterally by employers. It reviews enrolment and graduation rates, including participation of women and minorities. The article also looks behind the numbers to examine the operation of apprenticeship. It reviews the evolution of joint programs, including institutional arrangements and recent innovations to cope with the challenging characteristics of construction labor markets. Design/methodology/approach - Statistical comparisons by type of program sponsor are carried out using individual-level data on registered apprenticeship for the period 1996-2003. Evolution of apprenticeship programs is discussed in a historical perspective. Findings - Joint programs with union participation were found to have much higher enrolments and greater participation of women and ethnic/racial minorities. Joint programs also exhibit markedly better performance for all groups on rates of attrition and completion. Joint programs have developed various innovations, including college credit for training and scholarship loans to expand apprenticeship and improve quality and retention, although there are no quantitative evaluations of the effectiveness of many of these specific measures. Research limitations/implications - Statistical information includes about 65 percent of all registered apprentices in the USA. Practical implications - The paper shows that alternative forms of training sponsorship have substantially different effects on enrolment and graduation. Identification of the practices, that improve enrolment and retention, and their widespread adoption would enhance the effectiveness of training programs. Originality/value - The dataset used in this paper has not yet been used in any publications. The findings regarding joint programs are notable, in view of the skilled labor shortages facing the construction industry in the USA.

**KEY WORDS:** Program Effectiveness; Females; Graduation Rate; Construction Industry; College Credits; Building Trades; Apprenticeships; Unions; Minority Groups; School Holding Power; Enrollment Rate; Formal Training; Employment and Education.

6. Billett, S., & Hayes, S. (2000). *Meeting the demand: The needs of vocational education and training clients*. Brisbane: Australian National Training Authority.

The needs of the clients of Australia's vocational education and training (VET) sector were examined in this report. Case studies of client groups in rural, urban, and metropolitan areas were also conducted. The client groups studied included: (1) enterprises (4 owners/managers or workplace experts/delegates per region); (2) industry (at least 1 industry training advisory board or technical and further education curriculum officer per state and one national officer); (3) individuals (at least 50 past students, approximately 50 current students, and 30 prospective VET students per industry); and (4) members of regional/community boards or governments. The study indicated that shifting to an enterprise focus when planning VET may be responsive to enterprises' needs but could potentially result in highly localized skill development rather than achievement of longer-term industry and individual goals. A model was proposed for determining the need for and implementation of VET that seeks to reconcile differences among industry, regions, and individuals and achieve mutuality of interests. The model called for focusing VET planning on occupations rather than industry. The bibliography lists 44 references. Appendixes constituting approximately 50% of the document contain case studies from the provincial center, rural region, and metropolitan region.

**KEY WORDS:** Access to Education; Administrator Attitudes; Decision-Making; Education Work Relationship; Educational Demand; Educational Needs; Educational Planning; Focus Groups; Foreign Countries; Metropolitan Areas; Models; Needs Assessment; Postsecondary Education; Regional Planning; Rural Areas; School Business Relationship; Secondary Education; Student Needs; Urban Areas; Vocational Education; Formal Training; Employment and Education.

7. Bougheas, S. G., Yannis. (2004). Early career mobility and earnings profiles of German apprentices: Theory and empirical evidence. *Labour*, 18(2), 233-263.

How apprenticeship training affects the early career mobility and earnings profiles of young apprentices in Germany. The heterogeneous quality and nature (whether general or firm specific) of training across firms is anticipated to be reflected in the post-apprenticeship mobility and earning patterns of young workers. We argue that a simple model of training and labour turnover can explain such patterns. Assuming that job changes are associated with a loss of accumulated firm-specific skills, the model predicts that although movers initially experience a productivity loss, earnings grow at a faster rate than those of stayers. Later movers experience a larger reduction in their earnings compared with direct movers. Estimated selectivity-corrected earnings equations for movers and stayers, based on data from the German Socioeconomic Panel (GSOEP), support the predictions of the model and highlight important differences in earnings profiles and mobility patterns with size of firm.

**KEY WORDS:** Human Capital; Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Wage Level and Structure; Wage Differentials by Skill; Training; Occupation; Industry; Schooling; Experience; Tenure; Occupational and Intergenerational Mobility, Promotion; Germany; Apprenticeship; Earnings; Training; Formal Training; Employment and Education.

8. Bourner, T., Katz, T. E., & Watson, D. (Eds.). (2000). *New directions in professional higher education*. Buckingham: Open University Press / Society for Research into Higher Education.

This collection contains a series of analytical case studies of developing practices that respond to the challenges to higher education in the United Kingdom at the start of the new millennium.

**KEY WORDS:** Case Studies; Educational Practices; Foreign Countries; Higher Education; Lifelong Learning; Partnerships in Education; Professional Development; Teacher Certification; Formal Training; Employment and Education.

9. Brauns, H. (1999). Vocational education in Germany and France. *International Journal of Sociology*, 28(4), 57-98.

This article compares the vocational training systems in the Federal Republic of Germany and France. Using previously collected data, the structure and reform of each country's system over the past 20 years are examined separately. Germany's vocational training system is largely independent from the school system, while France's system is included in the secondary school system. The French system is also more stratified than the German system and includes hierarchical qualification levels. Data indicate that, in contrast to France, the German system privileges the workplace over school as the place of vocational training and emphasizes immediately useful skills. However, analysis also exposes convergent tendencies in the two systems. Following the French model, Germany has expanded full-time schooling facilities, and France has adopted elements of the German dual training system by modernizing its apprenticeship training and implementing forms of alternative training.

**KEY WORDS:** Vocational Education; Educational Systems; Educational Reform; Federal Republic of Germany; France; Formal Training; Employment and Education.

10. Brown, P. (2003). The opportunity trap: Education and employment in a global economy. *European Educational Research Journal*, 2(1), 141-179.

The possibility to make a better life is enshrined in democratic societies. In recent decades the growth in personal freedom and the rhetoric of the knowledge economy have led many to believe that we have more opportunities than ever before. We are told that the trade-off between efficiency and justice no longer holds in a global knowledge-driven economy, as the opportunity to exploit the talents of all, at least in the developed world, is now a realistic goal. This paper will challenge such accounts of education, opportunity and global labour market. It points to enduring social inequalities in the competition for a livelihood and an intensification of "positional" conflict. Our "opportunities" are becoming harder to cash in. The opportunity-cost is increasing because the pay-off depends on getting ahead in the competition for tough-entry jobs. Middle-class families in competitive hotspots are adopting increasingly desperate measures to win a positional advantage. But the opportunity trap is not only a problem for individuals or families. It exposes an inherent tension, if not contradiction, in the relationship between capitalism and democracy. It will be argued that the legitimate foundations of opportunity, based on education, jobs and rewards, are unravelling. Within education, this not only represents further symptoms of the "diploma disease" but a social revolution that fundamentally challenges our understanding of education, efficiency and social justice.

**KEY WORDS:** Knowledge Economy; Global Economy; Labor Market; Capitalism; Democracy; Formal Training; Employment and Education.

11. Campbell, J. M., Ailsa; Thomson, Emily. (2005). How 'modern' is the modern apprenticeship? *Local Economy*, 20(3), 294-304.

Some sectors of industry are facing major skills shortages, the Scottish labour market continues to be characterised by occupational segregation and a large disparity between the wages of both women and men. The concentration of people in occupations and

training based on gender effectively restricts the pool of potential recruits to industry and is unlikely to make the best use of human capital. It obstructs the pursuit of gender equality by reinforcing the gender pay gap and restricting individual career choices. Reported on is government's flagship training policy, the Modern Apprenticeship programme, from a gender perspective. In conclusion, 10 years on from its introduction, the scheme represents something of a "missed opportunity" to tackle occupational segregation and its deleterious effects in the wider economy and in society at large. Recommended is that government and organisations involved in the development and delivery of Modern Apprenticeships adopt a more conscious and cohesive approach to promoting non-traditional choices at the vocational level.

**KEY WORDS:** Economics of Gender; Non-labor Discrimination; Human Capital; Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Wage Level and Structure; Wage Differentials by Skill; Training; Occupation; Regional Economics; Regional Migration; Regional Labor Markets; Population; UK; Apprenticeship; Gender; Human Capital; Occupation; Skill; Training; Wage; Women; Formal Training; Employment and Education.

12. Canadian Labour and Business Centre. (2003). *Accessing and completing apprenticeship in Canada perceptions of barriers*: Canadian Apprenticeship Forum/Forum Canadien sur l'apprentissage.

The 'Accessing and Completing Apprenticeship Training in Canada' report highlights some of the perceived barriers that apprentices may face when accessing and completing apprenticeship training in Canada. It attempts to identify and explore the perspectives of individuals, unions, employers, governments and education concerning barriers to accessing, maintaining and completing apprenticeships. The reports attempts to determine which barriers are systemic and which may be specific to certain groups. It recommends bringing consulting with the apprenticeship community and specific groups to discuss the findings and examine recommendations.

**KEY WORDS:** Apprenticeship Training; Canada; Formal Training; Employment and Education.

13. Clark, D., & Fahr, R. (2002). *The promise of workplace training for non-college bound youth: theory and evidence from German apprenticeship*. London: Centre for Economic Performance London School of Economics and Political Science.

Using a large administrative dataset, this discussion paper assesses the potential of "workplace training" with reference to German Apprenticeship. When job-skill matching is important, we draw from conditions under which firms provide "optimal" training. The German system broadly meets these conditions. We find returns to apprenticeship for the lowest ability school-leavers comparable to standard estimates of return to school. In addition, training is transferable across a wide range of occupations. In conclusion, the positive experience with German Apprenticeship Training may guide the design of similar policies in various countries.

**KEY WORDS:** Occupational Training; Youth; Apprenticeship Programs; Germany; Formal Training, Employment and Education.

14. Deissinger, T. (2001). Vocational training in small firms in Germany: The contribution of the craft sector. *Education and Training*, 43(8-9), 426-436.

The dual system of vocational education and apprenticeship in Germany began in the crafts sector. As the services sector develops rapidly, the question arises whether small businesses in this sector are willing to follow the dual system.

**KEY WORDS:** Apprenticeships; Economic Change; Foreign Countries; Handicrafts; Service Occupations; Small Businesses; Tables (Data); Vocational Education; Formal Training; Employment and Education.

15. Department for Education Skills. (2003). 21<sup>st</sup> century skills: Realising our potential: Individuals, employers, nation. London: Stationery Office.

This White Paper describes the Government's national skills strategy to guarantee the sustainable employment and personal fulfillment of individuals in their working life. It also discusses the availability of the required skills for businesses to promote a competitive, productive economy. It focuses on managing the supply of training, skills and qualifications by colleges and training providers to be more responsive to the needs of employers through promoting learning opportunities for all ages, and by encouraging more efficient partnerships across government and the public sector, employers and unions.

**KEY WORDS:** Education; Great Britain; Training Needs; Skills; Formal Training; Employment and Education.

16. Dumbrell, T. (2003). *Pathways to apprenticeships*. Leabrook, Australia: National Centre for Vocational Education Research.

Initially the authors of this report aimed, in part at least, to map the establishment and development of pre-apprenticeships in Australia. They discovered, however, a paucity of existing literature on this topic and have been unable to meet this aim in full. This report has achieved, nonetheless, a descriptive analysis of recent pre-apprenticeship provision across Australia. It contains the findings from interviews with participants in, and providers of, pre-apprenticeship programs and identifies the role that such programs might usefully play as a component of overall VET provision. The report findings are based on an analysis of National Centre for Vocational Education Research (NCVER) VET statistical data, supplemented by information obtained through focus groups with students and interviews with trainers and training experts and representatives from industry. The VET data were derived from a special series developed by NCVER from national VET statistical data for the period 1994 to 2000. The data were further refined by the researchers by discarding courses that were clearly not pre-apprenticeship. An important finding from this activity is that, at present, there is no fail-safe method for accurate determination of the total number of enrolments in pre-apprenticeship courses; they are one of many pathways into apprenticeships. For this reason the data presented here should be treated with caution.

**KEY WORDS:** Access to Information; Apprenticeships; Career Development; Developed Nations; Employer Attitudes; Foreign Countries; Introductory Courses; Job Training; Postsecondary Education; Prevocational Education; Secondary Education; Student Attitudes; Student Financial Aid; Teacher Attitudes; Vocational Education; Formal Training; Employment and Education.

17. Euwals, R., & Winkelmann, R. (2001). Why do firms train? Empirical evidence on the first labour market outcomes of graduated apprentices. London: Centre for Economic Policy Research.

Germany's apprenticeship system is the most important source of formal post-secondary training. This paper investigates why firms are willing to invest in such training even though many apprentices will leave the training firm soon after completing the apprenticeship program. Using German register data - the IAB Employment Sample - we find that apprentices staying with their training firm after graduation have (1) higher wages and (2) longer first-job durations than apprentices leaving the training firm. These findings support the theory that firms use the apprenticeship system to select and retain the more able apprentices, thereby recouping the costs of investing in skills that are portable in principle.

**KEY WORDS:** Apprenticeship Programs; Germany; Employees; Apprentices; Employment; Labor Turnover; Formal Training; Employment and Education.

18. Euwals, R. W., Rainer. (2004). Training intensity and first labor market outcomes of apprenticeship graduates. *International Journal of Manpower*, 25(5), 447-462.

The most important source of formal post-secondary training in Germany is the apprenticeship system. Using German register data - the IAB Employment Sample - it is found that apprentices staying with their training firm after graduation have longer first-job durations but not higher wages than apprentices leaving the training firm. Retention rates, first job durations, and post-apprenticeship wages are increasing functions of training intensity. Implications for the ongoing debate as to why firms are willing to invest in general training are discussed.

**KEY WORDS:** Human Capital; Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Wage Level and Structure; Wage Differentials by Skill; Training; Occupation; Industry; Schooling; Experience; Tenure; Cohort; Personnel Economics; Training; Germany; Apprenticeship; Training; Wage; Formal Training; Employment and Education.

19. Farrell, L. (2004). Workplace education and corporate control in global networks of interaction. *Journal of Education and Work*, 17(4), 479-493.

On the one hand, contemporary corporations want people who are geographically, culturally and temporally remote to work together to generate new knowledge and accomplish routine work - they want to generate multi-disciplinary, globally dispersed communities of practice. On the other hand, they need to exert some control over this divergent, dispersed, innovative and creative workforce. Here I explore the role that workplace education plays in mediating individual and group autonomy, and central control, in global networks of interaction. I consider the ways that three workplace educators (working in government training institutions, commercial organisations, in-house human resource departments and unions) intervene in work practice at local (but not necessarily geographically local) worksites in unexamined ways. I argue that their stories offer us insights into the ways workplace educators help create new (face-to-face and virtual) learning communities, certainly, but they also help to exert centralised corporate control over work practice, work relationships and work identities, in unobtrusive ways.

**KEY WORDS:** Workplace Literacy; Workplace Education; Globalization; Work and Learning; Formal Training; Employment and Education.

20. Fuller, A., & Unwin, L. (2003). Creating a "modern apprenticeship": A critique of the UK's multi-sector, social inclusion approach. *Journal of Education and Work*, 16(1), 5-25.

Analysis of the United Kingdom's Modern Apprenticeship program, designed to increase intermediate job skills, shows that in many sectors, apprentices leave without completing qualifications, especially in sectors with no history of apprenticeship. A key problem is lack of employer demand conflicting with the government's focus on improving social inclusion.

**KEY WORDS:** Apprenticeships; Employer Attitudes; Federal Programs; Foreign Countries; Job Skills; Labor Needs; Program Effectiveness; Social Integration; Formal Training; Employment and Education.

21. Gabbard, D. (Ed.). (2000). *Knowledge and power in the global economy: Politics and the rhetoric of school reform*. Mahwah, NJ: Erlbaum.

This book advances a threefold political agenda: First, it demonstrates how the meanings assigned to a whole vocabulary of words and phrases frequently used to discuss the role and reform of U.S. public schools reflect an essentially economic view of the world. Second, it contends that education or educational reform conducted under an economized worldview will only intensify the nefarious effects of the colonial relations of political, cultural, and economic domination that it breeds at home and abroad. Finally, it offers a set of alternative concepts and meanings for reformulating the role of U.S. public schools and for considering the implications of such a reformulation more generally for the underlying premises of all human relationships and activities.

**KEY WORDS:** Education; Economic Aspects; United States; Politics and Education; Educational Change; Curriculum Change; Critical Pedagogy; Work and Learning; Formal Training; Employment and Education.

22. Gallacher, J. (2004). *Modern apprenticeships: Improving completion rates*. Edinburgh: Scottish Executive Social Research.

This research was commissioned by the Scottish Executive Enterprise, Transport and Lifelong Learning Department to assist them in developing policies and practices for Modern Apprenticeships. The research applies only to those aged 16-24 at the time of registering for the MA, and who were registered for a MA through a Local Enterprise Company. As there were over 25,000 modern apprentices in training in the Scottish Enterprise Network at the end of March 2003 and over 1,500 in the Highlands and Islands Enterprise Network, with 75 different frameworks available, the report describes the development and structure of Modern Apprenticeships in Scotland.

**KEY WORDS:** Apprenticeship Programs; Scotland; Evaluation; Youth; Training; Scotland; Formal Training; Employment and Education.

23. Gallo, M. L. (2004). *Reading the world of work: A learner-centred approach to workplace literacy and ESL*. Malabar: Krieger.

This book describes the ways in which workplace literacy programs can use a creative learner-centered approach to facilitate language learning through problem posing and critical thinking. By using learners' own experiences as the basis for the curriculum in a critical approach to literacy, educators can present a common ground for adults of differing language backgrounds and learning styles to better use their literacy skills in a workplace culture. As well, the book details the ways in which educators can help workers learn to negotiate the environment of their workplace and to use their communicative skills outside of work.

**KEY WORDS:** Adult Learning; Workplace Environment; Work and Learning; Formal Training; Employment and Education.

24. Gaskell, J., & Rubenson, K. (Eds.). (2004). *Educational outcomes for the Canadian workplace*. Toronto: University of Toronto Press.

Educational Outcomes for the Canadian Workplace explores how educational programs are changing, which skills matter in the economy, and how policy has responded to the educational and economic pressures of the 1990s. In this book, Jane Gaskell and Kjell Rubenson have brought together a distinguished group of scholars from economics, commerce, sociology of education, adult education, and educational administration to discuss a broad range of issues related to education and the economy in Canada. The implications of their discussions are far-reaching: educational policy not only affects the development of skills and knowledge for a competitive labour market, but also has an impact on social equality, economic growth, and civic engagement. Presenting in-depth research and analysis, this volume makes a significant contribution to Canadian and international debate on the meaning of the new global economy for educational policy and practice.

**KEY WORDS:** Labour Supply; Education; Economic Aspects; Statistics; Work and Learning; Equity; Formal Training; Employment and Education.

25. Gospel, H. F., & Foreman, J. (2002). *The provision of training in Britain: Case-studies of inter-firm coordination*. London: Centre for Economic Performance London School of Economics and Political Science.

This report examines how and why employers cooperate in the provision of training. This cooperation exists in the German-speaking countries where employers' organisations and chambers of commerce are a fundamental part of training. It is argued that such training is more prevalent than originally thought and can have a positive effect on the quantity and quality of training in the UK. Case studies indicate that such cooperation exists when the following exists: an industry-wide body; local multi-industry body; a traditional group training association; a local consortium of big employers; and a network of firms in a large company's supply chain. In the UK, even though such forms of organisation do exist, the coverage is uneven and stability is fragile.

**KEY WORDS:** Employees; Training; Great Britain; Case Studies; Apprenticeship Programs; Employer; Formal Training; Employment and Education.

26. Graham, P., & Stacey, N. (Eds.). (2002). *The knowledge economy and postsecondary education: Report of a workshop*. Washington: National Academy Press.

The Committee on the Impact of the Changing Economy on the Education System of the Center for Education, National Research Council, held a workshop to discuss changes in postsecondary education practices in response to economic factors. The report results from the Committees deliberations, the discussions at the workshop, and the papers prepared for the workshop. Part 1 of this document, the Workshop Report, identifies the central questions that emerged from the workshop discussion. Part 2 presents the following conference papers: (1) Demographic and Attainment Trends in Postsecondary Education (Lisa Hudson); (2) Community Colleges in the 21st Century: Challenges and Opportunities (Thomas Bailey); (3) The Impact of the Changing Economy on Four-Year Institutions of Higher Education: The Importance of the Internet (Carol A. Twigg); (4)

Higher Education, the Emerging Market, and the Public Good (Brian Pusser); (5) A Role for the Internet in American Education? Lessons from Cisco Networking Academies (Richard Murnane, Nancy Sharkey, and Frank Levy); and (6) Creating High Quality Learning Environments: Guidelines from Research on How People Learn (John Bransford, Nancy Vye, and Helen Bateman). One appendix contains the workshop agenda, and the other lists workshop participants. Each paper contains references.

**KEY WORDS:** United States; Higher Education; Internet; Work and Learning; Formal Training; Employment and Education.

27. Hall, R., Bretherton, T., & Buchanan, J. (2000). *"It's not my problem": The growth of non-standard work and its impact on vocational education and training in Australia*. Leabrook: Australia: National Centre for Vocational Education Research, Australian National Training Authority.

This study investigated implications of the increase in non-standard forms of employment for vocational education and training (VET) in Australia. Data were generated through published statistics on growth of non-standard work, research on business and training practices of organizations that use non-standard labor, case studies of 8 organizations in New South Wales, Victoria, and Queensland using non-standard labor, and individual life histories of 16 non-standard workers. Findings indicated that 58.8 % of the work force are permanent employees; most growth has occurred in casual and contractor forms of employment; and employer investment in training is related to cost. Case studies and life histories revealed that many non-standard workers prefer more ongoing, certain employment; non-standard employment levels were rising; and employers who employ labor hire or outsourcing have attempted to shift the burden of training to the labor-hire firm or outsourced service provider. The authors propose stimulating employer expenditure on training. Evidence pointed to the need for the VET sector to target the non-standard work force.

**KEY WORDS:** Access to Education; Adult Education; Biographies; Case Studies; Corporate Support; Developed Nations; Educational Finance; Employment Patterns; Employment Practices; Foreign Countries; Job Training; Labor Force Development; Postsecondary Education; Secondary Education; Trend Analysis; Vocational Education; Australia; Employee Leasing; Outsourcing.

28. Hamilton, G. (2000). The decline of apprenticeship in North America. *The journal of economic history*, 60(3), 627-664.

Apprenticeship was the foremost means of acquiring skill in North America and Europe but this began to decline around 1815 and is not the case presently in North America. Reasons for this decline are not well understood. This paper draws on a population of apprentice contracts signed in Montreal over a 50-year period. Results indicate that during the first phase of this decline masters responded to greater difficulties in contract enforcement. Later, direct effect of the rise of larger establishments on the market for apprentices appears (late 1820s and 1830s).

**KEY WORDS:** Apprenticeship Programs; History; Industries; Training; Quebec; Formal Training; Employment and Education.

29. Harkins, A. M. (2002). *The future of career and technical education in a continuous innovation society*. Washington, DC: Office of Vocational and Adult Education.

Career and technical education (CTE) is the appropriate and preferred channel for leading a software-supported experiential mission shift to prepare, support, and evolve flexible, information-producing, high-performance knowledge workers for a continuous innovation society. Knowledge management attempts to capture human knowledge in the form of units or objects that can be networked to other people or to software/machines. Five learning approaches share this common purpose: human capital development and application. Heuristic scenarios of work forces using these learning approaches and their supporting technologies convey a profound shift away from learning and performance as ends in themselves, in favor of continuous innovation as a process of working, living, and learning. Deconstruction of repetitious tasks frees human and other resources for continuous innovation. Information-based skill-concentrated distributed competence (DC) software is at the same time a direct threat to all repetitive human functions at work, in learning, or in community and the most hopeful and compatible equalizer for the ignorant, unskilled, slow, blind-sided, and unimaginative. Performance-based learning can effectively create learning in the context of tasks supported by DC software. CTE, with its technical focus and performance innovation outcomes mandates, is ideally positioned to lead the rest of education into new leadership and prominence.

**KEY WORDS:** Adult Education; Competency Based Education; Computer Managed Instruction; Experiential Learning; Futures of Society; Human Capital; Informal Education; Innovation; Labor Force Development; Lifelong Learning; Performance; Postsecondary Education; Secondary Education; Vocational Education; Career and Technical Education; Continuous Improvement; Distributed Cognition; High Performance Work Organizations; Knowledge Management; Knowledge Utilization; Learning Organizations; Formal Training; Employment and Education.

30. Hartkamp, J. (2001). *Apprenticeship in France, Ireland, the Netherlands and Scotland: Comparisons and trends*. Paper presented at the European Conference on Educational Research (Lille, France, September, 5-8, 2001).

A study compared developments in size of apprenticeship programs and changes in the distribution of apprentices over occupational categories in Ireland, Scotland, and the Netherlands during the last 2 decades. Data were from the "time-series" school leavers' surveys database. Findings indicated, toward the late 1990s, Irish apprenticeship was almost exclusively limited to skilled manual occupations and to crafts and related trades. The Scottish apprenticeship system was also rather "focused," but to a lesser extent. The Dutch apprenticeship system covered a broad array of occupations; only one-third of all apprentices were in skilled manual jobs. Occupational differences were smaller in the early 1980s. Apprenticeship became somewhat more limited to crafts or skilled manual jobs in Ireland and significantly less limited in Scotland, where apprentices appeared in service and market sales occupations in the early 1980s and in clerk jobs in the early 1990s. In Ireland, apprenticeship ceased to be the main route to skilled blue collar jobs. The structure of the Scottish youth labor market was very stable in comparison with Ireland, but the division of labor among apprentices, trainees, and "normal workers" fluctuated heavily in Scotland from 1979-95. The percentage of missing values for Dutch apprentices on the EGP variable was too high and too fluctuating over time to permit data analysis.

**KEY WORDS:** Apprenticeships; Comparative Analysis; Developed Nations; Dropouts; Education Work Relationship; Employment Patterns; Foreign Countries; Job Training; Labor Market; Longitudinal Studies; Occupations; Postsecondary Education; Secondary Education; Trend Analysis; Vocational Education; Youth Employment; Formal Training; Employment and Education.

31. Heidemann, W. (2000). Lifelong learning and employability: Is the European model of vocational training in crisis? Brussels, Belgium: European Commission.

This paper explores the traditional European model of vocational training in light of a new focus on employability and lifelong learning that is becoming more common in Europe. It includes the following four sections: (1) an overview of some examples of vocational training systems in Europe and the proposal that they share enough to be considered a European model that includes a consensus that all young people should be given a basic vocational qualification, the involvement of all companies in vocational training, and social dialogue and a tripartite (trade unions, employer associations, government) approach to regulation of the system; (2) a description of some European trends in industries and companies that are of importance for vocational training; (3) discussion about the question of lifelong access to vocational training provisions; and (4) suggestions about the need for change in the European model of vocational training.

**KEY WORDS:** Access to Education; Adult Learning; Adult Students; Delivery Systems; Developed Nations; Education Work Relationship; Educational Change; Educational Philosophy; Educational Policy; Employer Attitudes; Employment Potential; Foreign Countries; Government Role; Job Skills; Job Training; Labor Force Development; Lifelong Learning; Models; Partnerships in Education; Postsecondary Education; Secondary Education; Student Certification; Unions; Vocational Education; Denmark; Europe; France; Germany; Great Britain; Information Society; Formal Training; Employment and Education.

32. Holland, C. E., Frank, F. E., & Caunt, J. C. E. (2001). *Breaking down barriers: Certificate in workplace language, literacy and numeracy training*. (2nd ed.). London: Department for Education and Skills.

This document is the course book of an accredited 3-day professional development course for qualified basic skills tutors in the United Kingdom who are interested in working in workplace settings. The course materials are organized into 17 sections grouped into 4 units as follows: (1) general concepts of workplace language, literacy, and numeracy training and organizational culture (provision in the context of the workplace; a whole-organizational approach; organizational culture; cultural models; new developments affecting workplace language, literacy, and numeracy); (2) making it happen (keeping the organization with you; the organizational needs analysis; negotiating with an organization; employers' checklists; steering groups); (3) setting it up (publicity; the program outline; delivery options); and (4) developing the learning program (developing objectives and learning outcomes; accreditation in the workplace context; program expectations; evaluation). Accreditation information is presented for use with tutors who are taking the course to earn a certificate in workplace language, literacy, and numeracy training. Two suggested assignments are presented for each of the four course units. Each suggested assignment includes a brief description of the assignment, a behavioral objective, performance criteria, evidence indicators, and evidence requirements. A bibliography listing 38 references and list of 30 useful organizations are included. A progression pathways map and Basic Skills Initiative diagram are appended.

**KEY WORDS:** Adult Basic Education; Adult Educators; Adult Literacy; Adult Programs; Behavioral Objectives; Certification; Competence; Competency Based Education; Contract Training; Coordination; Definitions; Delivery Systems; Educational Certificates; Educational Needs; Educational Practices; Educational Principles; English (Second Language); Evaluation Criteria; Foreign Countries; Guidelines; Labor Force Development; Lifelong Learning; Literacy Education; Models; National Organizations; Needs Assessment; Numeracy; Organizational Climate; Professional Development;

Program Development; Program Evaluation; Publicity; Questionnaires; Records (Forms); Student Evaluation; Teacher Education Curriculum; Trainers; Training; Training Methods; Units of Study; Workplace Literacy; Formal Training; Employment and Education.

33. Hughes, M. (2000). Quality improvement in the work-based sector: Summary report. FEDA comments. London: Further Education Development Agency.

The provision of work-based training in the United Kingdom was studied to identify strategies for developing and improving the work-based sector. Data were collected from the following sources: a literature review; a postal survey completed by 245 work-based training providers; follow-up interviews; and regional meetings. More than 64% of respondents had been running work-based government-funded training for 6 years or more. Many providers were working across a wide variety of qualifications and occupational areas. The study established that, despite the existence of examples of good and improving practice, new and more challenging standards for work-based learning are needed. The following areas were deemed priority areas for development: advice, guidance, and pastoral support; key skills; learning with information and computer technology; development of a self-critical, self-improving culture; leadership and strategic planning; and mandatory professional qualifications for staff. The following were among the recommendations emerging from the study: (1) teachers, employers, and career advisers should reinforce the legitimacy of the work-based route to qualifications and success; (2) providers need additional training to raise their own key skills levels above those they are teaching and assessing; and (3) detailed explanation of how practice may be developed and improved is required.

**KEY WORDS:** Access to Education; Adult Education; Certification; Change Strategies; Education Work Relationship; Educational Change; Educational Needs; Educational Quality; Employment Experience; Foreign Countries; Job Training; Leadership; Literature Reviews; Needs Assessment; Postsecondary Education; Prior Learning; Private Schools; Professional Development; Program Improvement; Public Schools; Strategic Planning; Teacher Improvement; Technical Institutes; Trainers; Vocational Education; Work Experience Programs; Formal Training; Employment and Education.

34. Hyslop-Margison, E. J. (2000). The market economy discourse on education: Interpretation, impact, and resistance. *Alberta Journal of Educational Research*, 46(3), 203-213.

Explores the impact on Canadian schools of the market economy discourse on education that emerges from international organizations and Canadian business and government agencies. Argues that market economy policies have a deleterious effect on curriculum theory and development, and suggests that educators use critical thinking tools to resist this threat.

**KEY WORDS:** Educational Policy; Elementary/ Secondary Education; Foreign Countries; Free Enterprise System; Higher Education; Human Capital; Ideology; Resistance (Psychology); Role of Education; Canada; Discourse; Global Economy; Government Industry Relationship; Organisation for Economic Cooperation Development; Formal Training; Employment and Education.

35. International Labour Organization. (2002). *Training for decent work*. Geneva: International Labour Organization.

Vocational education and training are important components of any dignified job, especially during this era of rapid technological change. This paper examines vocational

training institutions and practices in Latin America and the Caribbean and demonstrates how the ILO's decent work objectives are essential elements to their success.

**KEY WORDS:** Vocational Training; Globalization; Work and Learning; Formal Training; Employment and Education.

36. Jurmo, P. (2002). The new (and ongoing) job crisis for adult learners: How adult educators can respond. *Literacy Harvest*, 25-31.

Most of the job losses that occurred in New York City after the terrorist attacks on the World Trade Center occurred in low-wage jobs held by lower-skilled workers. Many of those affected faced multiple obstacles limiting their employment prospects, including limited literacy and English language skills and a lack of "connections" to formal and informal mechanisms through which people typically get connected to jobs. Several programs offered by unions, public agencies, and non-profit organizations in New York City have responded to these learners in two ways - by focusing instruction on the job-related skills and knowledge learners need and by using referrals and other means to link learners to jobs and work-related training opportunities outside the basic skills program. Those interested in equipping low-skilled adults for a changing work environment should take the following actions: (1) be open to new ways of approaching work-related adult basic education; (2) develop the expertise needed to plan and deliver effective work-related education geared to learners' particular needs; and (3) advocate for new funding, better use of existing resources, and appropriate expectations from funders about ways adult education can help learners participate as workers.

**KEY WORDS:** Adult Education; Adult Learning; Adult Programs; Curriculum Development; Education Work Relationship; Educational Finance; Educational Needs; Educational Practices; Employment Patterns; Employment Problems; Employment Qualifications; Financial Support; Foreign Countries; High School Equivalency Programs; Information Networks; Job Placement; Job Search Methods; Job Skills; Occupations; Postsecondary Education; Referral; Relevance (Education); Semiskilled Workers; Skill Development; Unemployment; Unions; Unskilled Occupations; Unskilled Workers; Formal Training; Employment and Education.

37. Knight, P., & Yorke, M. (2003). *Learning, curriculum and employability in higher education*. New York: Routledge.

This book examines the highly topical subject of graduate underemployment with insight and clarity. The authors argue for more sophisticated research into employability, discussing how employability-friendly curricula can be developed, even in subjects which have less obvious vocational relevance. The rapid growth of higher education over the past fifty years has seen expectations increase, and governments looking to widen participation. At the moment there is an urgent need for the Government and higher education institutions to address the issue of graduate employability. The authors of this book encourage a pro-active stance, offering a ground-breaking model that can be easily implemented in institutions to make low-cost, high-gain improvements to students' employability. Topics covered include: the challenge of employability; the study and careers of English graduates; the enhancement of practice; assessing employability; the Skills Plus project.

**KEY WORDS:** Universities; Higher Education; Curriculum; Vocational Education; Employment; Formal Training; Employment and Education.

38. Krahn, H., Lowe, G. S., & Lehmann, W. (2002). Acquisition of employability skills by high school students. *Canadian Public Policy/Analyse de Politiques*, 28(2), 275-296.

A good deal of the debate over improving the employability skills of Canadian youth is based on untested assumptions. This paper explores Alberta high school students' perceptions of the employability skills they have acquired in their courses, formal work-experience programs, paid part-time employment, and volunteer work. Findings reveal that particular types of employability skills are more likely to be attained in some contexts rather than in others. Moreover most students do not see the labor market relevance of analytic skills or a basic high school education. On the other hand, the skills that employers indicate they are seeking are different from the skills students believe employers want. Such findings indicate that the different stakeholders are not communicating effectively with each other. The paper concludes that educators and employers must clearly demonstrate to students the link between core secondary school curriculum and employment outcomes.

**KEY WORDS:** Youth Employment; Work Skills; Employability; High School Students; Part Time Employment; Education Work Relationship; Canada; Formal Training; Employment and Education.

39. Lehmann, W. (2000). Is Germany's dual system still a model for Canadian youth apprenticeship initiatives? *Canadian Public Policy/Analyse de Politiques*, 26(2), 225-240.

In an attempt to facilitate transitions into the labor market, many Canadian provinces have introduced youth apprenticeship initiatives. As the German dual system is often considered a model for such initiatives, this paper introduces a critical perspective on issues possibly affecting the system's future. Economic restructuring, work reorganization, changing hiring practices, and young people's increasing preference toward higher education outline the main challenges for the dual system. Review of recent debates concerning Germany's dual system suggests that apprenticeship initiatives for youth in Canada need to provide students with career options that are more transparent while at the same time maintaining or increasing flexibility in the transition process.

**KEY WORDS:** Federal Republic of Germany; Canada; Youth; Apprenticeships; Models; Labor Policy; Labor Force Participation; Job Training; Formal Training; Employment and Education.

40. Lehmann, W. (2005). 'I'm still scrubbing the floors': Experiencing youth apprenticeships in Canada and Germany. *Work, Employment & Society*, 19(2), 107-129.

Based on interviews with youth in Canada participating in a high school based apprenticeship programme, this article investigates the extent to which such programmes affect stated policy goals of facilitating school-work transitions and developing workplace skills. Although embedded in very different education and labour market structures, Germany's dual system is often discussed as a successful model for youth apprenticeship programmes. A comparison between Canadian and German youth apprentices therefore provides a rare critical look at how these differences shape individual experiences in apprenticeships, but also how they affect the accomplishment of policy goals. Findings show that the study participants themselves viewed their apprenticeships as positive and meaningful experiences. Yet the Canadian apprentices had only a cursory knowledge of apprenticeship regulations and career paths, and the German apprentices were restricted in their choices by the early streaming processes in Germany's education system. Skill development in Canada was limited by a focus on workplace readiness skills and a lack of integration of what participants did at work and

what they learned at school. Rather than gaining an understanding of their rights and responsibilities in the workplace, they were learning to accept their underprivileged place in it.

**KEY WORDS:** Apprenticeship; Employability Skills; Labour Markets; New Vocationalism; School-to-work Transitions; Social Inequality; Vocational Education; Youth; Formal Training; Employment and Education.

41. Lindell, M., & Abrahamsson, K. (2002). *The impact of lifelong learning on vocational education and training in Sweden*. Melbourne, Australia: Australian National Training Authority.

In Sweden, initial vocational education (IVT) is financed by public money and is designed to provide basic skills and general qualifications to perform certain functions in an occupation. Continuing vocational training (CVT) is provided primarily by public school institutions, private enterprises, and training companies, trade unions, and employer associations and is subject to negotiations and local solutions between stakeholders. Adult schooling traditions in Sweden emanate from the mid-19th century, and traditions for improving popular literacy can be traced to the late 18th century. The early 1990s were characterized by increasing recognition of the need for recurrent education. The model of recurrent education has since been replaced by the broader concept of lifelong learning. In the interests of developing a comprehensive system for promoting lifelong learning, radical changes were instituted in Sweden's systems of IVT and CVT in the 1990s. The most profound change in IVT was the institution of apprenticeship-like programs that combined special subjects from various programs to create specially designed programs reflecting demand from local enterprises. The reforms within CVT included development of the following programs: a pilot project on advanced vocational education; the Adult Education Initiative; and individual learning accounts. Lifelong learning has become an integrated component of Swedish educational policies.

**KEY WORDS:** Continuing Education; Delivery Systems; Education Work Relationship; Educational Change; Educational Finance; Educational History; Educational Objectives; Educational Policy; Educational Principles; Educational Trends; Elementary/ Secondary Education; Employment Qualifications; Financial Support; Foreign Countries; General Education; Influences; Lifelong Learning; Policy Formation; Postsecondary Education; Systems Approach; Trend Analysis; Vocational; Education; Impact Studies; Stakeholders; Sweden; Formal Training; Employment and Education.

42. Lo, L., Lai, M., & Xiao, J. (2005). Learning to work in China's leading metropolis. *Teachers College Record*, 107(6), 1335-1369.

This article examines the skills, development needs, and learning opportunities of the workforce in the city of Shanghai in the People's Republic of China. It attempts to elucidate the factors that influence employees' participation in workplace training and adult education activities. By tapping the views of firm executives and employees, this article discusses the combined efficacy of three types of education and training activities for vocational learning: informal learning, nonformal training, and formal adult education. The major findings of this article suggest that working adults in Shanghai are willing to participate in a variety of adult education and training activities so long as they can see the utility of these activities. Their willingness is especially apparent when adult education and training can yield widely recognized qualifications that enhance their marketability. As the leading metropolis of China, Shanghai has great aspirations for its own role in national development as well as on the world stage. Its endeavor in providing skills development for a large workforce during a period of economic transformation should afford conceptual and policy insights into the implementation of adult education and

training in changing societal contexts.

**KEY WORDS:** Foreign Countries; Employees; Informal Education; Adult Education; On-the-Job Training Labor Force Development; Job Training; Job Skills; Employee Attitudes; Urban Areas; Formal Training; Employment and Education.

43. Maguire, M. (1998). Modern apprenticeships and employers. *Journal of Vocational Education and Training: The Vocational Aspect of Education*, 50(2), 247-257.

A study of 500 British employers operating Modern Apprenticeships found the following: (1) 58% were small businesses; (2) 63% recruited only 1 apprentice; (3) they were highly satisfied with participation; and (4) the current good economy may help entrench Modern Apprenticeships in the training infrastructure.

**KEY WORDS:** Employer Attitudes; Foreign Countries; On-the-Job Training Recruitment; Small Businesses; Young Adults; Modern Apprenticeships; United Kingdom; Formal Training; Employment and Education.

44. Malcomson, J. M., Maw, J. W., & McCormick, B. (2000). *General training by firms, apprentice contracts, and public policy*. Southampton: Department of Economics University of Southampton.

In this paper, training corporations increase profits by offering apprenticeships which commit these firms to high wages for those trainees retained on completion. At these high wages, only good workers are retained. This implies their productivity and reduces the external benefits if they subsequently quit. Regulation of apprenticeship duration (a historically important feature) enhances efficiency. Suitable subsidies enhance it even further.

**KEY WORDS:** Employees; Training; Apprenticeship Programs; Formal Training; Employment and Education.

45. Manthei, R. J. G., Alison. (2005). The effect of paid employment on university students' lives. *Education & Training*, 47(3), pp.202-215.

Many students have to work during term time to compensate for debt accumulated to finance their tertiary study. This study is to explore the impact of this paid employment on student study time and other aspects of their lives. Design/methodology/approach: Undergraduates (83) completed a questionnaire about their academic workload, their paid employment commitments during term time, their earnings and expenditure, and their recreational and cultural activities. Results indicated that 81% of the students held at least one job during term time for an average of 14 hours per week. Money earned was typically spent on essential living expenses. Working left less time than desired for social activities, study and recreation. Research limitations/implications: Results have limitations due to a relatively small sample size of self-selected students: mainly young, female and enrolled in Arts courses. Practical implications: Find suggest that working is not always detrimental to students' academic efforts, particularly if the hours worked are manageable given their course load. Lecturers should be more aware of the busy lives students lead and try to structure assignments and course requirements to recognise this, including the scheduling of class times and the offering of study support services. Originality/value: The study adds to the growing body of international data that reports on the effects of a user-pays approach in tertiary education. There is no similar data in New Zealand.

**KEY WORDS:** College Students; Employment Status; Financial Strain; Study Habits; Time Management.

46. Marginson, S. (2000). The changing nature and organisation of work, and the implications for vocational education and training in Australia. Leabrook, Australia: National Centre for Vocational Education Research.

Profound changes are occurring in technology, work and work organisation, which will have profound implications for the future role of vocational education and training (VET) in Australia. This report presents six important interrelated components of this change. Work in the future will be influenced by technology, the capacity of labour, and change management. Training, along with research and development, work organisation and capital raising, will determine whether the Australian economy is a high-skill economy that provides for rising standards of living. Key to the future role of VET will be its capacity to integrate more closely with the workplace, and its capacity to integrate into the innovation cycle.

**KEY WORDS:** Technology; Vocational Education and Training; Globalization; Outsourcing; De-Skilling; Organizational Change; Formal Training; Employment and Education.

47. Maynard, J., & Smith, V. (2004). *Practical ways of improving success in modern apprenticeships*. London: Learning and Skills Development Agency.

Modern Apprenticeships (MAs) have been criticised in some quarters in 2002, only 40 per cent of work-based learning WBL providers were deemed adequate. Things are improving but there is still much to be done. This paper addresses this issue. Support for Success, a Learning and Skills Development Agency quality improvement programme funded by the Learning and Skills Council, commissioned a small number of action research projects in 2002, with the aim of improving learner outcomes. Of those projects, 12 sought practical ways of promoting achievement and progression in WBL to respond to the government directive of securing progression and the attainment of targets in the WBL arena. The paper provides an overview of the issues associated with 14-19-year-old vocational education and training, before addressing aspects of retention and achievement in modern apprentice programmes. Drawing on 12 projects, different approaches to improving success in MAs are explored.

**KEY WORDS:** Apprenticeship Programs; Great Britain; Formal Training; Employment and Education.

48. McIntosh, S. (2004). *The returns to apprenticeship training*. London: The Centre for Economic Performance, London School of Economics and Political Science.

Using recent data from the UK Labour Force Survey, this paper estimates the wage gains that individuals make on average if they complete an apprenticeship programme. Results suggest a gain of around 5-7% for men, but no benefit for women. Further analysis also considers the returns by age grouping, by qualifications obtained, by highest prior qualification and by industrial sector. Emerging from this further analysis is the importance of acquiring qualifications with the apprenticeship, at level 3 or above.

**KEY WORDS:** Apprenticeship; Wage Equations; Formal Training, Employment and Education.

49. Mendes, S., & Sofer, C. (2004). Apprenticeship versus vocational school: A comparison of performances. In C. Sofer (Ed.), *Human capital over the life cycle: A European perspective* (pp. 118-134). Camberley: Edward Elgar.

Sofer combines comparative research on the processes of human capital formation in education and training in relation to the European labor market, drawing on a European research project, "Schooling, Training, and Transitions," organized and funded within the Targeted Socio- Economic Research Program of the European Union. Authors examine three main aspects of the links between education and social inequality: educational inequality, differences in access to labor markets, and differences in lifelong earnings and training.

**KEY WORDS:** Analysis of Education; Human Capital; Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Personnel Economics; Training; France; Apprenticeship; Formal Training; Employment and Education.

50. National Centre for Vocational Education Research. (2001). *Australian apprenticeships: Facts, fiction and future*: National Centre for Vocational Education Research.

This report, part of the National Centre for Vocational Education Research (NCVER) research, addresses the perceived lack of analysis of the Australian apprenticeship system. Together with the first comprehensive assessments of the impact of traineeships and new apprenticeships, this report provides a thorough analysis of the apprenticeship system since the 1984 Inquiry into Labour Market Programs. Important conclusions concerning future directions for apprenticeships in Australia are made in this report. Apprenticeship has a key role to play in the future of Australia's skill development, building on the solid foundation of its past in that country.

**KEY WORDS:** Apprenticeship Program; Australia; Formal Training; Employment and Education.

51. Nielsen, S. P., & Cort, P. (1999). *Vocational education and training in Denmark* (2<sup>nd</sup> ed.). Luxembourg: Office for Official Publications of the European Communities.

Vocational education in Denmark began with organized apprentice training in the early 1400s. In 1875, the government and municipalities began providing substantial grants to establish technical and commercial schools. Development of apprenticeship training continued through the 1950s. Since 1977, Denmark has had two parallel systems of vocational training - apprenticeship training schemes and vocational education and training (VET) programs. The 1989 Vocational Training Act established a general framework for the training field that had previously consisted of apprenticeship, VET, and basic technical training programs. Adult vocational training was unknown in Denmark until 1985. The following are among the key problem areas in VET that Denmark's political system is currently addressing: (1) VET's failure to attract enough young people; (2) better provision for both academically weak and strong trainees; (3) transformation of adult and continuing training so that education becomes a natural and recurrent part of working life; (4) provision of greater incentives for adult participation in continuing and further training; and (5) internationalization of VET to respond to the increasing internationalization of business and industry. The following items are appended: lists of abbreviations and acronyms, important institutions/organizations, and 61 print and online sources; definitions of key terms; and overviews of recent initiatives.

**KEY WORDS:** Adult Education; Adult Learning; Apprenticeships; Continuing Education; Definitions; Education Work Relationship; Educational Administration; Educational Change; Educational History; Educational Legislation; Educational Objectives; Educational Policy; Educational Practices; Educational Quality; Foreign Countries; Futures of Society; Global Approach; Glossaries; Lifelong Learning; Needs Assessment; Postsecondary Education; Private Sector; Public Sector; Secondary Education; Student Certification; Student Evaluation; Teacher Education; Vocational Education; Vocational Education Teachers; Formal Training; Employment and Education.

52. O'Connor, B. N. (2004). The workplace learning cycle: A problem-based curriculum model for the preparation of workplace learning professionals. *The Journal of Workplace Learning, 16*(6), 341-349.

This paper builds on the conceptual foundations suggested in the previous two papers in this issue. The article describes the use of a workplace learning cycle theory to curriculum development for a graduate-level course in workplace education. This article argues that one can engage students in the process of analyzing the learning and knowledge-use in a work environment through the lenses of the pedagogical and curricular concepts in these and other writings. The graduate program aims to enable students to understand and use the more generative concepts of workplace knowledge-use.

**KEY WORDS:** Curricula; Training; Higher Education; Business Studies; Formal Training; Employment and Education.

53. Okurowski, M. E., & Clark, R. (2001). The use of level three evaluation data to assess the impact of technology training on work performance. *Performance Improvement Quarterly, 14*(1), 57-76.

Discussion of information technology training focuses on an evaluative study at the Department of Defense that investigated whether new information technology training could improve job performance. Highlights include determining training effectiveness; job transfer evaluation; return on investment; use of software features; and the impact of formal versus informal training.

**KEY WORDS:** Computer Software; Evaluation Methods; Industrial Training; Information Technology; Job Performance; Performance Factors; Performance Technology; Training Methods; Transfer of Training; Vocational Evaluation; Department of Defense; Performance Improvement; Performance Indicators; Return on Investment; Technology Utilization; Training Effectiveness; Formal Training; Employment and Education.

54. Packer, A. H. (2001). The career transcript system for lifelong learning. *Community College Journal, 71*(5), 24-28.

The Career Transcript System (CTS) keeps up-to-date and verifiable records of students' accomplishments. Asserts that CTS facilitates exchanges of information among schools, employers, and colleagues. States that the system was implemented after the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS) defined what work requires of schools.

**KEY WORDS:** Community Colleges; Higher Education; Job Skills; Portfolios; (Background Materials); Profiles; Qualifications; Resumes (Personal); Student Development; Student Records; Secretaries; Skills; Formal Training; Employment and Education.

55. Packer, M. J. (2001). *Changing classes: School reform and the new economy*. Cambridge: Cambridge University Press.

This book tells the story of Willow Run, a small, poor, ethnically-mixed town in Michigan's rust belt, a community in turmoil over the announced closing of a nearby auto assembly plant. As teachers and administrators began to discover ways to make schooling more relevant to working-class children, two large-scale school reform initiatives swept into town: the Governor's "market-place" reforms and the National Science Foundation's "state systemic initiative." Against the backdrop of a post-Fordist economy, the author examines complex linkages at work as society structures the development of children to adulthood.

**KEY WORDS:** Education; Economic Aspects; United States; Case Studies; Education and State; Educational Change; Work and Learning; Formal Training; Employment and Education.

56. Pate, J., Martin, G., Beaumont, P., & McGoldrick, J. (2000). Company-based lifelong learning: What's the payoff for employers? *Journal of European Industrial Training*, 24(2-4), 149-157.

Survey data from Scottish workers participating in lifelong learning showed that the existence of the company's learning program influenced their perceptions of career development and fairness. Communication skills in particular were transferred to the workplace. The company was less successful in creating a strong transfer climate.

**KEY WORDS:** Corporate Education; Employee Attitudes; Foreign Countries; Lifelong Learning; Organizational Climate; Outcomes of Education; Transfer of Training; Return on Investment; Scotland; Formal Training; Employment and Education.

57. Peat, M., Taylor, C. E., & Franklin, S. (2005). Re/engineering of undergraduate science curricula to emphasise development of lifelong learning skills. *Innovations in Education & Teaching International*, 42(2), 135-146.

It is increasingly important in the twenty-first century for graduates to be able to take their place in the changing world scene and to be adaptable and creative within the organisation that employs them. This paper describes some of the initiatives introduced into the curriculum of a first-year science course, taken by 1,300 students at the University of Sydney, that are designed to help students develop the attributes required of a professional scientist. Comprehensive online resources have been developed to facilitate independent study, and synchronous and asynchronous communications, and these are delivered via a virtual learning environment. We have enhanced students' oral and written communication skills by using real work experiences, and developed teamwork activities within the context of the curriculum.

**KEY WORDS:** Science Education; Science Curriculum; Curriculum Enrichment; Undergraduate Study; Lifelong Learning; Communication Skills; Job Skills; Independent Study; Virtual Classrooms; Experiential Learning; Teamwork; Foreign Countries; Formal Training; Employment and Education.

58. Pieck, E. (2005). Work-related adult education: Challenges and possibilities in poverty areas. *International Journal of Lifelong Education*, 24(5), 419-429.

The aim of this article is to talk about the possibilities of work-related adult education programmes within the context of developing countries. The focus of the analysis is on poor populations, particularly those dwelling in rural and marginal urban areas. The background comprises the challenges for productive incorporation, social exclusion, the relative absence of skill development programmes in these areas and the historical ineffectiveness of adult education programmes. In the light both of lessons drawn from several experiences carried out mainly in developing countries and insights coming from educational and developmental research, the article puts forward some theses that may serve as guidelines when carrying out work-related adult education programmes, such as the need to stem from integral and interinstitutional perspectives, to rely on sound strategies that can have a direct impact on both social and economic development, to learn from local contexts (knowledge and opportunities) and evaluate the potential within these spaces, to properly assess the different areas (health, housing, organization etc.) that are related to any social development process, and the importance of taking productive activities - work - as the axis and starting point of programmes.

**KEY WORDS:** Skill Development; Adult Education; Poverty Areas; Developing Nations; Job Skills; Job Training; Foreign Countries; Global Approach; Technical Education.

59. Pischke, J.-S., & von Wachter, T. (2005). *Zero returns to compulsory schooling in Germany: Evidence and interpretation*. Cambridge: MA: National Bureau of Economic Research.

The impact of compulsory schooling on earnings is estimated using changes in compulsory schooling laws for secondary schools in West German states from 1948 to 1970. Our research design is very similar to studies for various other countries; we find very different estimates of the returns. Most estimates in the literature indicate returns in the range of 10-15%. We find no return to compulsory schooling in Germany in terms of higher wages. It is assessed as to whether this is due to labour market institutions or the existence of the apprenticeship training system in Germany, but find no evidence for these explanations. We conjecture that the result may be due to the fact that the basic skills most relevant for the labour market are learned earlier in Germany than in other countries.

**KEY WORDS:** Analysis of Education; Human Capital, Skills; Occupational Choice; Labor Productivity; Formal Training Programs; On-the-Job Training; Wage Level and Structure; Wage Differentials by Skill; Training; Occupation; Industry; Schooling; Experience; Tenure; Ability Bias; Human Capital; Returns to Schooling; School Leaving Age; Formal Training; Employment and Education.

60. Plant, P., & Turner, B. (2005). Getting closer: Workplace guidance for lifelong learning. *International Journal of Lifelong Education*, 24(2), 123-135.

The purposes of this article are twofold. First, it considers the policy links between guidance and lifelong learning, highlighting in particular the implications of findings from a recent study by the Organisation for Economic Co-operation and Development (OECD). Secondly, it critically compares two approaches to workplace guidance about education and training, drawing upon evaluations of various initiatives organized by trade unions and employers in Denmark and the UK. These evaluations are based on qualitative data collected from in-depth interviews with those responsible for organizing and giving the guidance, as well as those who received it. Five interviews were conducted with recipients of guidance in each country, either face-to-face or by telephone, using a semi-structured interview schedule. The conclusions suggest some issues that need to be addressed by guidance practitioners and policy makers, including employers and trade unions.

**KEY WORDS:** Foreign Countries; Guidance; Unions; Lifelong Learning; Adult Education; Denmark; United Kingdom.

61. Prichard, C. (Ed.). (2000). *Managing knowledge: Critical investigations of work and learning*. New York: St. Martin's Press.

Aimed at MBA students, postgraduates and advanced level undergraduates, this book questions the naive, self interested and popularised messages that surround knowledge work and knowledge management. Case studies examine the politics of new communications technologies which are frequently offered as a means for managing knowledge in the workplace.

**KEY WORDS:** Management; Work and Learning; Study and Teaching; Formal Training; Employment and Education.

62. Ribolzi, L. (2000). The challenge of training. *Studi di Sociologia*, 38(1), 3-34.

Vocational education and training is a core issue for educational systems spanning disciplines and incorporates many agencies. This education/training is critical to the competitiveness in the context of the global economy. Other roles include, increasing social equity, improving life chances, & promoting individuals' possibilities for attaining better performance. Schools provide students with formal learning, but also important is learning at work to acquire the necessary skills. Theoretical approaches are confronted.

**KEY WORDS:** Vocational Education; Education Work Relationship; Training; Educational Programs; World Economy; Educational Systems; Italy; Business; Formal Training; Employment and Education.

63. Robinson, C. (2000). *Developments in Australia's vocational education and training system*. Adelaide, South Australia: National Centre for Vocational Education Research.

Australia's national vocational education and training (VET) system and nationally funded technical and further education colleges were established in the 1970s. In the 1980s, traineeships complementing traditional apprenticeships and competency-based training were instituted. An industry-led training system was established in the 1990s. Total VET participation reached 1.5 million (12% of the working-age population) in 1998, and apprentices and trainees totaled 250,000 in 1999. Australia's public system of formal VET receives some \$4 billion in public funding annually, with employers investing an additional \$4.7 billion in structured and unstructured training. The following are among distinguishing features of Australia's VET system: a clear national policy for VET; movement toward lifelong learning; development of advanced and high-level skills training; development of an industry-led training sector; flexible delivery and modularization of training delivery; competition among training providers; a strong system of public training institutions; a framework for national recognition of VET; and focus on outputs and outcomes. Issues expected to have a significant impact on Australia's VET system in the near future include the changing nature of work, a trend toward customizing VET, the aging population, and movement toward a lifelong learning culture.

**KEY WORDS:** Access to Education; Accountability; Accreditation (Institutions); Adjustment (to Environment); Adult Learning; Aging (Individuals); Apprenticeships; Articulation (Education); Competency Based Education; Cooperative Planning; Coordination; Curriculum Development; Delivery Systems; Education Work Relationship; Educational Change; Educational Demand; Educational History; Educational

Opportunities; Educational Research; Educational Supply; Educational Trends; Employment Qualifications; Enrollment Trends; Flexible Progression; Foreign Countries; Job Skills; Job Training; Learning Modules; Lifelong Learning; Models; National Curriculum; Outcomes of Education; Policy Formation; Postsecondary Education; Program Evaluation; Public Education; School Business Relationship; Secondary Education; Skill Development; Student Certification; Systems Approach; Tables (Data); Trend Analysis; Vocational Education; Work Environment; Formal Training; Employment and Education.

64. Ryan, P. (2000). The institutional requirements of apprenticeship: Evidence from smaller EU countries. *International Journal of Training and Development*, 4(1), 42-65.

Characteristics of apprenticeship in Austria, Denmark, Ireland, and the Netherlands are closer to Germany's social partnerships model than Britain's deregulated market in terms of statutory governance, educational requirements, administration, and funding. The experience of these countries may not be helpful in reviving British apprenticeship without institutional change.

**KEY WORDS:** Apprenticeships; Business Responsibility; Federal Regulation; Foreign Countries; Governance; Government Role; Organizational Change; Formal Training; Employment and Education.

65. Sakellariou, C. (2003). Rates of return to investments in formal and technical/vocational education in Singapore. *Education Economics*, 11(1), 73-87.

Explores relationship between education and earnings in Singapore. Uses Labor Force data to obtain estimates of private returns to investment in formal and technical/vocational education. Some results confirm earlier patterns from other countries, while others make Singapore a world outlier, with very high private returns to schooling in relation to Singapore's advanced stage of development and per-capital income.

**KEY WORDS:** Formal Education; Private Benefits; Singapore; Formal Training; Employment and Education.

66. Saunders, S. (2001). Review of the Australian apprenticeship and traineeship literature: References and their key issues. Leabrook, Australia: National Centre for Vocational Education Research.

This volume is a survey of more than 125 Australian apprenticeship and traineeship references from 1985-99. Each item identifies author/editor/organization, date, title, organization and place of publication or development. A "key" provides a descriptive phrase relating to the reference type, such as an industry-body paper on training delivery (to special groups); industry view on training system; academic paper on industry training and training delivery; or official report on training funding, policy, and system. Each reference is summarized for its origin, key topics, and key issues in the contemporary setting.

**KEY WORDS:** Adult Education; Annotated Bibliographies; Apprenticeships; Delivery Systems; Demand Occupations; Developed Nations; Educational Assessment; Educational Demand; Educational Opportunities; Educational Quality; Foreign Countries; Job Skills; Job Training; Literature Reviews; Outcomes of Education; Policy Formation; Postsecondary Education; Public Policy; State of the Art Reviews; Surveys; Trainees;

Vocational Education; Australia; Formal Training; Employment and Education.

67. Saunders, S. (2001). Issues and directions from a review of the Australian apprenticeship and traineeship literature. Australian apprenticeships. Leabrook, Australia: National Centre for Vocational Education Research.

Using a survey of 125 Australian references from 1985-99, this paper presents issues and directions found within the Australian apprenticeship and traineeship literature. In chapter 2 these issues are grouped into seven categories which are discussed through various themes. Each section considers the entry-level training issues in the broader context of developments in vocational education and training (VET) policy and the VET market. Chapter 3 draws out possible VET and entry-level training policy and program directions from the issues combined and their salient themes. Eight suggestions are illustrated using examples that include: sharpening training investigation and diagnosis; repositioning the trades in the training marketplace; renewing the traineeship consensus; broadening the education and training horizons for new pathways to vocational skills; testing new approaches to training markets; widening the avenues for structured training in enterprises; adding pathways and learning models to the work of training intermediaries; and reviewing and reinforcing priorities for training measurement and quality.

**KEY WORDS:** Adult Education; Apprenticeships; Delivery Systems; Demand Occupations; Developed Nations; Education Work Relationship; Educational Administration; Educational Assessment; Educational Demand; Educational Opportunities; Educational Quality; Educational Supply; Entry Workers; Foreign Countries; Industrial Training; Job Skills; Job Training; Literature Reviews; Outcomes of Education; Postsecondary Education; Private Sector; Public Policy; Trainees; Vocational Education; Australia; Educational Marketing; Intermediaries; Formal Training; Employment and Education.

68. Savoie-Zajc, L., & Dolbec, A. (2003). Co-operative education in the pulp and paper sector in Quebec. *Journal of Workplace Learning*, 15(3), 114-122.

Using the concept of "community of practice" and a typology developed by Guile and Griffiths, this article characterizes the quality and the nature of learning students achieved while studying in a newly-implemented pulp and paper vocational program, structured as a co-operative education program and offered in six school boards throughout the province of Quebec, Canada. The observations come from a five-year long action research program involving registered students, trainers in vocational centers, and work supervisors in pulp and paper mills. The conclusion highlights the structural barriers in pulp and paper mills that limit students' access to operations. This co-op education program is traditional according to the Guile and Griffiths' typology.

**KEY WORDS:** Education; Communities of Practice; Curriculum; Implementation; Workplace Learning; Canada; Formal Training; Employment and Education.

69. Sharpe, A. (1999). *Apprenticeship in Canada: A training system under siege?* Ottawa: Canadian Labour Force Development Board National Apprenticeship Committee.

This paper first reviews apprenticeship trends in Canada over the last two decades. It then examines prospects for labour market conditions for the total economy and for the construction sector to the year 2005 based on scenarios developed by the forecasting firm Informetrica for the IAS committees examining labour market trends in the

construction trades. The paper finds that the apprenticeship system has a number of serious weaknesses, including the stagnation in new apprenticeship registrations in the 1990s; the inability of the apprenticeship system to expand beyond traditional fields such as the construction trades and motor vehicle repair into growing occupations in business and commerce, health sciences, natural sciences, and social sciences; the inability of the apprenticeship system to increase the extremely low proportion of women enrolled in apprenticeship programs (3 per cent); the uneven development of apprenticeship programs by province, resulting in regional disparities in access to apprenticeship programs; the very low level of completion rates for apprenticeship programs (9.5 per cent) due to the high drop out rate; and the strong downward trend in apprenticeship completion rates, declining one third over the past two decades. The trends described in this paper raise serious questions about the ability of the apprenticeship system in Canada to produce an adequate supply of qualified workers for the economy. As suggested by the title of this paper, the apprenticeship system may be under siege. When there is weak demand for qualified workers, the deficiencies of the apprenticeship system may have limited consequences. Since large increases in the number of qualified workers are not needed, the low apprenticeship completion rates do not represent an obstacle to growth. Employers do not put pressure on the apprenticeship system to become more effective. In contrast, strong demand for qualified workers makes employers more aware of the deficiencies of the apprenticeship system and creates demand for reforms.

**KEY WORDS:** Apprenticeships; Building Trades; Developed Nations; Educational Trends; Employment Projections; Foreign Countries; Futures of Society; Labor Market; Postsecondary Education; Program Effectiveness; Formal Training; Employment and Education.

70. Smaller, H. (2000). *Vocational education in Ontario's secondary schools: Past, present - and future?* North York: Labour Education and Training Research Network.

There has been a rapid and continuing decline in the numbers of students enrolled in vocational courses in secondary schools over the past decade in Ontario. Canada does not seem to be alone in this regard. At the global level, a recent series of studies published by the OECD also reflects this decline. The purpose of this study is twofold. First, the authors explore why it is that such a seemingly "well-meaning" educational program continues to be afflicted with such tensions, adverse publicity and doubtful future. Second, the author explores whether, and if so, how, vocational education within the public school system might be conceptualized and undertaken differently. It is hoped this latter exploration will bring schools and the "real world" closer together - incorporating "alternation" as a framing concept.

**KEY WORDS:** Vocational Education; Ontario; Canada; Secondary Schooling; Formal Training; Employment and Education.

71. Spielhofer, T., & Sims, D. (2004). *Modern apprenticeships in the retail sector: Stresses, strains and support.* Great Britain: National Foundation for Educational Research.

This report presents findings from an NFER study. It was conducted as part of the Skills for All research programme on the use of Modern Apprenticeships (MAs) in retailing. In the light of the need to generate relevant skills in the UK to enable competition in global markets, concerns have been raised about the lack of completion of MAs in retailing. The study revolved around interviews with key informants and an analysis of inspection reports from nine training providers. The findings reveal challenges with the 'short-

termism' approach of both employers and employees, the generally low skills, motivation and expectations of employees, the difficulties in accessing training for MAs, and the questions about the suitability of the qualification for the retail sector. Strategies are outlined for promoting the wider take-up of MAs and providing effective support for both employers and employees.

**KEY WORDS:** Workforce Skills; Apprenticeship; Young Adults; Stress; Training; Government Indicate; Formal Training; Employment and Education.

72. Stamm, M. (2005). Highly talented and "only" an apprentice? Selected results of a longitudinal study and its consequences for vocational research of the highly-gifted. *Education and Training*, 47(1), 53-63.

Purpose - Aims to present the empirical results from a study of vocational research on the highly gifted pupils. Design/methodology/approach - Based on data from a Swiss longitudinal study on the effects of acquiring pre-school knowledge of reading and mathematics, intellectually above-average gifted pupils, who are now 16-year-olds, are filtered out and analysed with respect to their educational background and plans for the future. Findings - The most striking findings of the analysis are that those with well above-average ability are to be found in all educational examination standards their educational careers may be characterised by notable breaks, yet still be highly successful and a significant number of pupils decide against completing a high-school certificate A-level equivalent in favour of vocational training. Research limitations/implications - A limitation on the authority of the results arises in two respects with regard to the small size of the sample group and in terms of the fact that the link between performance development, cognitive ability and the actual performance demonstrated cannot be ascertained from the available data. Practical implications - Consequently, vocational training must also increasingly recognise the possibility of having to train a potentially significant number of apprentices with above-average abilities in the most varied of domains. Originality/value - This is an area that, to date, has not been the subject of much empirical investigation.

**KEY WORDS:** Program Effectiveness; Students; Educational Background; Cognitive Ability; Adult Vocational Education; Gifted; Formal Training; Employment and Education.

73. Stephenson, J. (2003). *A review of research and practice in e-learning in the work-place and proposals for its effective use*. Retrieved November 15, 2006, from <http://www.lle.mdx.ac.uk/ICLML/jsaera03.pdf>

Following an abstract and introduction, this document reviews five research projects on the learning experiences of workers. The first two concern the environment required for successful learning in the workplace, and the last three address implementation of e-learning programs. (The findings from the first two studies revealed 24 conditions that must be met for successful learning in the workplace, including linking learning to improved performance, valuing collaborations in learning, and management awareness of the need for learning. Conditions for successful e-learning revealed by the last three studies included the relevance of training to the current job, user ownership and control of the process, a culture of support by the training provider and employer, and personal recognition for learning achieved.) A wider context is next provided through reference to another literature review and other writings. Characteristics of successful approaches to online work-based learning are presented, as well as four features required to produce those characteristics (intelligent and intuitive tools, and extensive database of materials, imaginative design, and a shared commitment). Three successful programs are described. A conclusion states that online work-based learning will succeed where it is personalized, managed by the user, relevant to the user's work, supported by the employer, linked to just-in-time material, and fully supported within a healthy learning

environment.

**KEY WORDS:** Achievement Need; Adult Education; Computer Assisted Instruction; Constructivism (Learning); Education Work Relationship; Educational Environment; Educational Research; Educational Technology; Foreign Countries; Individualized Instruction; Learner Controlled Instruction; Online Courses; Organizational Culture; Organizational Development; Professional Recognition; Relevance (Education); Student Motivation; Technology Integration; Web Based Instruction; Work Environment; Formal Training; Employment and Education.

74. Tango, R. A., & Kolodinsky, P. (2004). Investigation of placement outcomes 3 years after a job skills training program for chronically unemployed adults. *Journal of Employment Counseling, 41*(2), 80.

This analysis of chronically unemployed job seekers after they completed a comprehensive job skills training program reveals dynamic interpersonal and intrapersonal characteristics that have an impact on job-finding success. Of primary interest in this study was the relationship between R. B. Cattell's (1988) second-order personality factors and participants' employment status 3 years after they graduated from the job skills program. Furthermore, U.S. Department of Labor worker trait classifications, such as aptitude, academic achievement, work history, and Holland's hexagonal definitions of career interest were also analyzed (United States Employment Service, 1972). Relatively robust correlations between job holding status and 2 of the second-order personality factors on Cattell's Sixteen Personality Factor Questionnaire were illuminated: Independence and Objectivity.

**KEY WORDS:** Outcomes of Education; Personality Traits; Job Skills; Employment Level; Unemployment; Job Applicants; Vocational Education; Career Education; Predictor Variables; Individual Characteristics; Adult Education Sixteen Personality Factor Questionnaire; United States.

75. Tennant, M., & Yates, L. (2005). Issues of identity and knowledge in the schooling of VET: A case study of lifelong learning. *International Journal of Lifelong Education, 24*(3), 213-225.

This article discusses two school-based case studies of vocational education and training in the areas of information technology and hospitality from the perspective of the agendas of "lifelong learning". Lifelong learning can be seen as both a policy goal leading to institutional and programme reforms and as a process which fosters in learners identities that enable them to thrive in the circumstances of contemporary life. These case studies suggest that current approaches to vocational education and training in schools are enacting the first but not the second of these agendas. Institutional barriers are being removed and work placements drawn in to schooling programmes. However, the pedagogy, assessment and curriculum of the programmes emphasizes short-term (and conflicting) knowledge objectives rather than orientations to flexible lifelong learning. We argue that it is teachers rather than the students who are thrust most forcibly into adopting new learner-worker identities consonant with the attributes of "lifelong learners" and the demands of the contemporary workplace.

**KEY WORDS:** Lifelong Learning; Information Technology; Case Studies; Vocational Education; Formal Training; Employment and Education.

76. Tremblay, D.-G., & Le Bot, I. (2003). *The German dual apprenticeship system: An analysis of its evolution and present challenges*. Montreal: Canada: Tele-universite, Université du Quebec.

The evolution of Germany's dual apprenticeship system and the challenges now facing it are reviewed. The following topics are considered: (1) the progression from craft guilds to vocational training; (2) the history of Germany's dual apprenticeship system from its organization in the 1970s; (3) apprenticeship in the dual system; (4) Germany's education system; (5) regulation of vocational training; (6) financing and the cost of training; (7) adjusting skills to new requirements; (8) regulation of the apprenticeship placement system; (9) continuing vocational training in Germany; (10) new challenges for today's dual system; (11) apprenticeship in Germany's Eastern Lander; (12) apprenticeship as a strategy for fighting youth unemployment; (13) Quebec's apprenticeship system; (14) an overview of apprenticeship in Canada; and (15) a comparison of the German model of apprenticeship to models in other countries. The success of Germany's dual apprenticeship system is attributed to the fact that it does not compete against itself by attempting to solve the problems of adjusting to changes in the labor market by creating branches that are parallel to the system's existing branches and thereby undermining the value of the existing system or creating "upward competition through higher-level training programs."

**KEY WORDS:** Apprenticeships; Certification; Change Strategies; Comparative Education; Continuing Education; Delivery Systems; Developed Nations; Education Work Relationship; Educational Change; Educational Demand; Educational Finance; Educational History; Educational Legislation; Educational Needs; Educational Policy; Educational Practices; Educational Supply; Educational Trends; Employment Practices; Employment Qualifications; Federal Legislation; Federal Regulation; Financial Support; Foreign Countries; Income; Job Placement; Job Skills; Literature Reviews; Models; Needs Assessment; Policy Formation; Postsecondary Education; Program Costs; Program Evaluation; Public Policy; School Business Relationship; Skill Development; State of the Art Reviews; Student Employment; Student Evaluation; Systems Approach; Transfer of Training; Trend Analysis; Unemployment; Vocational Education; Youth Employment; Canada; Germany; Formal Training; Employment and Education.

77. van Leeuwen, M. J., & van Praag, B. M. S. (2002). The costs and benefits of lifelong learning: The case of the Netherlands. *Human Resource Development Quarterly*, 13(2), 151-168.

A model for calculating on-the-job training costs and benefits was developed and applied to Dutch employer/employee data. The model was used to generate scenarios for policy measures to stimulate lifelong learning, depicting costs and benefits for those in the market for training as well as macroeconomic consequences.

**KEY WORDS:** Cost Effectiveness; Educational Policy; Employment Practices; Foreign Countries; Lifelong Learning; Macroeconomics; Models; On-the-Job Training Policy Formation; Netherlands; Formal Training; Employment and Education.

78. Venter, K. (2003). Building on formal education: Employers' approaches to the training and development of new recruits in the People's Republic of China. *International Journal of Training and Development*, 7(3), 186-202.

Some Chinese organizations are moving away from production-oriented traditions. Resource-rich enterprises are using formal education to select and develop an elite. Organizations with less access to highly qualified recruits are also less likely to provide extensive training. The gap between organizations in terms of employee development is likely to widen.

**KEY WORDS:** Educational Attainment; Employment Practices; Foreign Countries;

Personnel Selection; Recruitment; Staff Development; Training; Formal Training, Employment and Education.

79. Vickerstaff, S. A. (1998). The delivery of modern apprenticeships: Are training and enterprise councils the right mechanism? *Journal of Vocational Education and Training: The Vocational Aspect of Education*, 50(2), 209-224.

Examines whether Britain's Training and Enterprise Councils are the best way to forge consensus on Modern Apprenticeship. Concludes with the need for a greater role for industry-based organizations and dialog about what training policy should be.

**KEY WORDS:** Apprenticeships; Foreign Countries; Job Training; Public Policy; Modern Apprenticeships; Training and Enterprise Councils (Great Britain); United Kingdom; Formal Training; Employment and Education.

80. Wendy, S., & Thomas, Z. (2004). Why do business service firms employ fewer apprentices? A comparison between Germany and The Netherlands. *International Journal of Manpower*, 25(1), 36-54.

Analysed is why in Germany and The Netherlands the share of apprentices in the business service sector is lower than in other economic sectors. A theoretical introduction surveys the potential reasons that could be responsible for this. Empirical analysis shows that the level of skill apprentices gain is the main explanation for the relatively low supply of apprenticeships in German business service enterprises. In The Netherlands, the option to hire skilled employees from full-time schools instead of training apprentices seems to be crucial. For these reasons, the authors propose to offer obligatory extra formal training in areas such as IT skills and foreign languages for the apprentices in business service firms in Germany in order to increase the attractiveness of the dual apprenticeship system for prospective apprentices as well as business service firms.

**KEY WORDS:** Apprenticeships; Skills; Business Support Services; Germany; The Netherlands; Formal Training; Employment and Education.

81. Wonacott, M. E. (2000). *Apprenticeship*. Trends and Issues Alert No. 19. Washington, DC: Office of Educational Research and Improvement (ED).

Although apprenticeship used to be viewed as academically questionable, today many educators consider it an ideal vehicle for the work-based learning necessary for the school-to-work transition. In particular, youth apprenticeships are seen as having potential to minimize youth floundering in the labor market, ensure educative work experiences, increase earnings and educational attainment, and make school more meaningful. Unions may perceive youth apprenticeship as a threat to their influence, or they may view it as a help in maintaining unions and wages. Many states focus their efforts on employer participation in youth apprenticeships, but concerns about costs, lost trainer productivity, and liability often affect employer participation in youth apprenticeship. Employers involved in apprenticeship would prefer increased training and support for workplace mentors and trainers and improved coordination with schools. Women tend to be underrepresented in apprenticeship and to enjoy less favorable earnings outcomes, while African Americans are often over-represented but have less favorable completion rates and employment and earnings outcomes. Students may not be aware of apprenticeship opportunities, or they and their parents may have unfavorable perceptions of this option.

**KEY WORDS:** Apprenticeships; Blacks; Citations (References); Education Work Relationship; Educational Attitudes; Educational Benefits; Employer Attitudes; Employer Employee Relationship; Females; Males; Mentors; Outcomes of Education; Postsecondary Education; Secondary Education; Unions; Women's Education; Work Experience Programs; Formal Training; Employment and Education.

82. Worland, D., & Doughney, J. (2002). The decline in apprenticeship training in the electrical and associated industries in Victoria. *Australian Bulletin of Labour*, 28(2), 88-103.

Analysis of data from electrical and associated occupations in the Australian state of Victoria shows the following: (1) a decline in numbers of apprentices; (2) numbers of women and other disadvantaged groups not increasing in apprenticeships; and (3) skill shortages on the supply side that will be exacerbated at both ends of the age spectrum if action is not taken.

**KEY WORDS:** Access To Education; Apprenticeships; Electrical Occupations; Foreign Countries; Job Skills; Job Training; Labor Needs; Labor Supply; Formal Training; Employment and Education.

83. Xiao, J. (2002). Determinants of salary growth in Shenzhen, China: An analysis of formal education, on-the-job training, and adult education with a three-level model. *Economics of Education Review*, 21(6), 557-577.

Uses hierarchical linear model to estimate the effects of three forms of human capital on employee salary in China: Formal education, employer-provided on-the-job training, and adult education. Finds, for example, that employees' experience in changing production technology and on-the-job training are positively associated with salary increases through improved technical proficiency, while formal education is not.

**KEY WORDS:** Adult Education; Elementary/ Secondary Education; Higher Education; Human Capital; Mathematical Models; On-the-Job Training Salaries; Technological Advancement; Formal Training; Employment and Education.

84. Yang, S. (2003). Four contingent models of company job training in U.S. organizations: Evidence from the 1996 National Organizations Survey. *Dissertation Abstracts International, A: The Humanities and Social Sciences*, 63(7).

This issue in job training has received attention from different disciplines and perspectives for many decades. Prior empirical results have related many predictors from different levels of analysis to organization job training. While researchers have fruitfully applied alternative theoretical perspectives to predict training, studies integrating those perspectives are scarce. My dissertation fills into this gap by synthesizing several theories and integrating different levels of analysis in explaining organization job training. I propose four contingent models by which different organizational and environmental attributes interact to affect organizational training practices. Namely, the relationships between workforce composition (gender and occupational composition) and company training programs change under different organizational contexts. Organizational characteristics interact with environmental factors to affect organizational training practices. Analyzing 1996 National Organizations Survey (NOS), the author shows that (1) occupational impact on company job training is contingent upon organizational bureaucratization and institutionalization. The training gap between professional/technical core workers and blue-collar core workers widens with increases in bureaucratization,

whereas the gap shrinks with an increase in institutionalization; and (2) institutionalization exerts a strong impact on organization job training, provided that organizations under investigation embrace a low level of bureaucratization. Highly bureaucratized organizations results in the institutional impact on organization training which is dramatically reduced.

**KEY WORDS:** Job Training; Labor Force; Organizational Culture; Organizational Structure; Bureaucratization; United States of America; Formal Training; Employment and Education.



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