Notes

Chapter 1

This typology of "first-generation" and "second-generation" issues is taken from Betcherman (1993).

2 This study was part of a larger project on training and the changing employment structure carried out by the Work Network of the Canadian Policy Research Networks. The overall project was funded by Human Resources Development Canada, the Canadian Labour Force Development Board, the provincial governments of Ontario, British Columbia, and Saskatchewan, and the New Brunswick Labour Force Development Board. Each of these funders was represented on an advisory committee along with subject-matter experts and labour and management representatives. The advisory committee membership is identified at the end of this publication.

Chapter 2

For a summary of the available evidence, see Hum and Simpson (1996).

2 Job-related training includes any education or training that gives an individual work-related skills. Clearly, for the unemployed, such education/training will not be provided by an employer; instead, the main sources of access will be through self-funding or programs sponsored by government.

3 While definitions vary, informal training is unstructured training often delivered by a colleague or supervisor; formal training is typically defined as structured, planned instruction.

4 The likelihood of having these learning structures does increase with firm size (de Broucker, 1994).

5 In this regard, it is interesting to note that few firms systematically measure the impacts of training, either on their own performance or that of their employees (Mangum, Mangum and Hansen, 1990).

6 As noted by Baldwin, Diverty and Johnson (1995), sets of behaviours that encompass successful strategies in a variety of functional areas (including training) in a firm together can add up to overall market or financial success.

Chapter 3

1 While employers initiate much workplace training, Kapsalis (1996) provides evidence suggesting that employee decisions also come into play.

2 Note that these two are closely interrelated as available evidence suggests that the importance of informal training appears to be greatest in small firms.

3 Additional detail on the research design is available in the project methodology report. See Ekos Research Associates (1995*a*).

4 Information contained in the Dun & Bradstreet listings suffers from some well-known limitations. For example, this source underrepresents establishments in the services sector, small firms, and very young firms. However, after investigating other potential sample frames, we concluded that the Dun & Bradstreet listings were still the most comprehensive and up-to-date source available.

5 The original group of 7,300 was reduced as industry-size-region strata were filled. Other reasons for the elimination of establishments included being out of business, having a number not in service, and referral of the interviewer to head office.

6 The higher response rate for the longitudinal panel would be expected given the "attachment" of those establishments to the survey. In addition, it is possible that they may be more "survey-friendly" than randomly drawn establishments as evidenced by their original agreement to participate in the 1993 survey.

7 Five call backs were made to establish contact and, once contact had been made, up to three appointments were scheduled to conduct the interview.

8 For a discussion of sample decay (from the 1993 survey), see Ekos Research Associates (1995*b*).

9 See Appendix B for a description of the industry grouping used.

10 The relatively high share for New Brunswick reflects additional sampling for that province, as arranged by the New Brunswick Labour Force Development Board.

11 This comparison is naturally conditional on the validity of the Dun & Bradstreet list as a proxy for the population of Canadian establishments. In an earlier note, we identified some deficiencies with the Dun & Bradstreet list. Note that the population distributions we have used exclude single-employee establishments as well as those in government, education services, and agriculture.

12 For a discussion of the details of the weighting procedure, see Ekos Research Associates (1995*b*).

13 Of these, seven were returned without sufficient identification to link the establishment to a respondent to the telephone survey. As a result, the usable sample from the mail survey was 705.

14 Response rates to the employee survey varied widely, ranging from an estimated high of 60 percent of employees to a low of 8 percent.

15 A major linked effort is now being undertaken by Statistics Canada, in its Workplace and Employee Survey.

16 Examples of intermediate occupations include clerical workers, nurse aides and orderlies, sales clerks, heavy equipment operators, mine service workers, and machine operators.

Chapter 4

1 Recall that the survey's definition of formal or structured was very broad, which explains the high incidence rate compared to other estimates.

2 Unless otherwise indicated, all descriptive results reported are based on the weighted sample.

3 Throughout this document, modelling results are based on the unweighted Workplace Training Survey (WTS) sample because the factors that the weights control for (industry, size, and province) are entered in the equation. Note that size is entered as employment and employment squared, scaled in thousands of employees to make the coefficients more meaningful.

4 The telephone survey collected information on whether the establishment had formal information-sharing and communication programs; team-based work systems, job rotation or cross-skills training; formal employee involvement; variable compensation; and a pension. Respondents reporting at least four of these five practices were coded as having "high-performance" workplace practices.

5 The technological change variable was specified on the basis of a 7-point scale response to the question of the degree to which technological change had altered the way work was done in the establishment over the previous three years.

6 The "turnover" rate is more precisely a separation rate, defined as the percentage of employees who had quit, been laid off, or retired over the previous year. Technically speaking, a true turnover rate would include the number of new hires over the previous year.

7 It should be pointed out that since informal training is less likely to be observed by employers, the results on the extent of informal training are likely to be underestimates of the true amount.

8 Examples given included classroom instruction, scheduled and structured on-the-job training, apprenticeship training, and courses at formal educational and training institutions paid for by the employer.

9 An additional point that must be kept in mind throughout is that, unlike the employer sample, the employee sample is not expected to be representative of the employed labour force as a whole. As outlined in the preceding chapter, the selection of case studies (on which the employee sample is based) was intended to capture a diverse group of establishments but no ran-

dom selection procedure was used and, in any case, the number of establishments was small. Moreover, there is little reason to believe that the response patterns within establishments were random.

10 The denominator represents the number of employees *currently* in the occupational group within a given establishment, whereas the numerator represents the number of employees in that group receiving training *over the previous 12 months*. There are two reasons to suspect that the latter number reported by many respondents will be higher than the number of current employees who have received training (which is what is required to calculate a true intensity rate). First, there were undoubtedly some respondents who counted multiple training events for the same employee. Second, establishments may have counted multiple employees receiving training for the same position, which had been restaffed because of turnover. In addition, the current number of employees reported for an occupational group may not accurately reflect the experience over the past year.

11 This variable was derived from responses from the mailback survey. Also, the richer mailback data set allowed us to introduce two labour-supply variables – percentage female and percentage well-educated – which the literature review showed to be linked to the receipt of training. In this specification (not shown), the percentage female had a significantly negative sign, as expected; the percentage well-educated had a positive sign but was not significant.

These are based on establishment ratings on a 7-point scale for various types of formal training, where 1 indicates that type was not undertaken, 4 indicates that the type accounted for one-half of the overall effort, and 7 indicates that the type accounted for all of the training. Responses greater than 1 were used for the first column (with zeros for all non-trainers) and responses greater than 4 were used for the second column.

13 The observation that a higher percentage track training expenditures than have a training budget could be due to various factors. First, preparing a budget may require a stronger commitment to financial management than tracking expenses; in fact, it seems plausible that the existence of the former would generally require the latter. Second, the expenditure-tracking estimate applies to formal trainers while the budget figure refers to all trainers, including those that just have informal training; therefore, the former figure is based on a subsample that might be expected to have a higher overall commitment to training.

14 Respondents were given eight cost items that potentially could be included and asked which they used in making their cost estimates. The most commonly cited response was that all items had been used; however, this group represented only 8.5 percent of the firms reporting cost estimates. The top three accounting methods represented only 13.7 percent of the training sample.

15 These incidence rates and all results presented in this section are based on unweighted data since our interest is in comparing the behaviour over time of a fixed sample of establishments.

16 Various descriptive and econometric tests were used. While we have not reported the results here, they are available from the authors. Another methodology-related explanation, which was not tested for, is possible selection bias: establishments' training experiences in 1993 may have had an impact (positive or negative) on whether or not they responded to the 1995 survey.

17 In 1993, respondents were first asked whether they were currently undertaking formal training and then, for those that were not, whether they had over the preceding 12 months. In the 1995 survey, respondents were simply asked whether they had undertaken any formal training over the last 12 months.

18 While the makeup of a longitudinal panel is, by definition, "fixed" (or quasi-fixed) in many ways, size is one time-varying characteristic that potentially can impact on training. Given the positive relationship between size and training, it is possible that the decrease in incidence merely reflects a sample of firms that is declining in size and thus, *ceteris paribus*, is less likely to train. However, on average, the median size of the panel increased slightly over the 1993-95 period. Moreover, when we limit the analysis to those firms that reported approximately the same employment level over the period, the incidence rate decline remains.

19 This is not a methodological issue per se, but rather a hypothesis based on the changing environment. Ultimately, however, if this were validated, then the implication would be the same – that the declining incidence rate did not necessarily signify a decrease in the overall commitment to training. When we limit the comparison to respondents reporting similar sales trends in the two years preceding each survey point, however, the training incidence rate decline remains.

20 It is possible that some of the firms reporting training in 1993 but not in 1995 are "sporadic" trainers, undertaking programs when certain events, like technological change, take place. These firms may again carry out training as the need arises and, strictly speaking, should not be characterized as "droppers." However, if there is a sporadic-trainer population of firms, we would expect that the percentage engaging in training in any given year (i.e., 1993 or 1995) would be similar.

21 The issue of linking training to profits, however, is obviously a difficult one, especially given the fact that few firms systematically evaluate that relationship.

22 This analysis was undertaken using the SPSS QUICK CLUSTER procedure. For more details on the cluster analysis, see Ekos Research Associates (1995*b*).

23 These functions include whether the establishment had a designated training unit or personnel, a formal training plan, a training budget, formal training-needs assessment, and training evaluation procedures.

24 This was measured on the basis of responses to statements addressing the establishment's attitudes regarding continuous skill upgrading, the impacts of technology on individual autonomy, the role of employee responsibility, and the effect of new technology on the demand for low-skill workers.

25 The detailed regression results are available from the authors.

Chapter 5

1 Respondents were asked to evaluate their agreement on a 7-point scale where 1 represented "completely disagree," 4 represented "neither" (agreement or disagreement), and 7 represented "complete agreement." In our analysis, we have rescaled the responses, with disagreement including 1 or 2, neither including 3, 4, or 5, and agreement where the response was 6 or 7.

2 On the other hand, there are also establishments where employees are not encouraged to come forward with training requests.

3 Of the respondents to the telephone survey, 27.5 percent reported being part of a multi-unit firm (i.e., with operations at other locations).

4 Only establishments with formal training were asked about head office provision of resources and services.

5 Responses were on the basis of a 7-point scale. For the chart, these have been regrouped into three categories, with 1 and 2 indicating no involvement, 6 and 7 representing extremely involved, and the middle values indicating moderate involvement.

6 Chaykowski and Lewis (1994) reported the incidence of training provisions in major Canadian collective agreements (i.e., with bargaining units of over 500 employees) for the 1987-93 period. Over one-half of the agreements had contract language relating to on-the-job training and apprenticeship training. Other types of training clauses were much more infrequent. It should be recognized that the major-unit sample almost certainly is biased towards incidence rates that are higher than the population of agreements.

7 It should be noted, however, that the number of establishments reporting contractual provisions on training was small (n=26). This is due to the fact that these data come from the mail survey, that most of the (weighted) sample responding to that questionnaire was nonunion (88.6 percent), and that two-thirds of the unionized respondents reported that there were no contractual provisions regarding training.

8 In the case of both types of councils, we did not collect information on whether the establishment actually participated in their council. As a result, it is not possible to ascertain how informed these perceptions of usefulness were.

Chapter 6

1 Employees were asked to make their evaluations on a 7-point scale where 1 is equal to "no benefit at all" and 7 is equal to "major benefit."

2 As the underlying data (from the employee survey) are not representative of all employees, the reader should be less concerned with the *absolute* wage levels than with the *relative* wages of trainees and non-trainees. The wage measure is calculated as the usual gross wage (i.e., before taxes and deductions). Where earnings were reported on a weekly, monthly, or annual basis, adjustments were made on the basis of information provided on working time. Wage growth was calculated as the percentage difference between current wage and real starting wage with the employer (adjusted as above, if necessary). The starting wage was converted to 1995 dollars using the Consumer Price Index.

3 The following types of job training were included: basic skills, management-supervisory skills, professional-technical skills, new technology and apprenticeship training.

4 There are three education categories: high school or less; trade, professional, technical or college certificate; and university degree. Age has been coded in four groups: 15-24, 25-34, 35-44, 45+. The omitted reference variable in each set is the lowest category.

5 This is calculated as the exponent of the coefficient (i.e., $e^{0.270}$ equals 1.31).

6 From the 18 establishments in the employee data set, 10 dummy variables were created for establishments with significant cell counts with another "miscellaneous" dummy variable created for the other establishments. In the regression equation, the latter was the omitted establishment dummy variable.

7 Note that respondents could identify multiple methods.

8 For example, among formal trainers, certification testing was reported by 19.3 percent of respondents with between 20 and 99 employees and by 19.4 percent of those with 100 or more employees, compared to 13.7 percent with less than 20 employees. Differences in evaluation methods by establishment size, however, were not as large as anticipated. This may reflect differences in how small and large firms interpret "formal" evaluation methods.

9 Those not undertaking formal training include both non-trainers and firms with only informal training activities.

10 Performance trends were rated on a 7-point scale where 7 represents "much better" performance. The table includes respondents providing a score of 6 or 7.

11 The omitted references for the dummy variables are primary industries, Ontario, and nonunion.

12 Establishments were coded as having adopted high-performance HRM practices if they reported at least four of the following: formal communication or information-sharing programs; teams, job rotation, or cross-skills training; formal employee involvement; variable compensation; and a pension.

13 These variables include a self-assessment of the establishment's training effort relative to others in its industry; the share of the training effort that was formal; the extent to which training functions were formalized; the strategic importance attached to skills; and a subjective self-assessment of the impacts of training on various outcomes.

14 The technology segmentation is based on whether the respondent indicated that technological change over the previous three years had a significant impact on the way work was done (6 or 7 on a 7-point scale).

15 The HRM segmentation is based on the identification of high-performance establishments outlined in Chapter 6, note 12.

16 These variables were structured as dichotomous variables with a value of 1 for respondents in the high-trainer cluster and reporting high technological change (or high-performance HRM or large establishment size) and 0 otherwise.

17 It should be noted that the observed performance outcomes are ambiguous in the sense of determining the direction of causality between training and performance. The quantitative analysis is consistent with the hypothesis that training generates favourable outcomes – a conclusion buttressed by the case studies. However, we should add a caution that an alternative interpretation could be that more successful firms provide training. A similar uncertainty exists with respect to the employee results. In both cases, we have tried to control for other potential determinants of performance, but omitted-variable bias remains a possibility.

Chapter 7

1 A very significant innovation in this respect is the Workplace and Employee Survey under development by Statistics Canada. This survey is designed to generate a linked employer-employee database. The survey was conducted on a pilot basis in 1996, with the first full survey planned for 1997.

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Human capital—people, their skills, and their knowledge—is a critical asset in a knowledge- and technology-based economy. Workplace training, as one important vehicle for developing human capital, can have significant impacts both on the performance of firms and on the employment prospects of individuals. Drawing on a wealth of new data collected from employers and employees across the country, this report profiles the patterns of workplace training in Canada, describes the factors driving the decisions that firms and employees make regarding training, and identifies the factors that determine how effective training is. The authors find that, while the majority of firms do some kind of training, most lack a strong commitment to a "learning organization" culture. The result is that many employees have little access to formal training opportunities, which, in fact, is contributing to the polarization in the labour market. As knowledge and skill requirements continue to rise, strategies are needed to ensure that skills-upgrading opportunities are available to all workers. After reviewing the evidence on workplace training in Canada and presenting their analytical findings, the authors identify the key policy issues that need to be addressed.

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