



# Foundations: 12-month impacts of a literacy and essential skills intervention for job seekers

Boris Palameta | Cam Nguyen | Taylor Shek-wai Hui | David Gyarmati

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For information on SRDC publications, contact

Social Research and Demonstration Corporation  
55 Murray Street, Suite 400  
Ottawa, Ontario K1N 5M3  
613-237-4311 | 1-866-896-7732  
[info@srdc.org](mailto:info@srdc.org) | [www.srdc.org](http://www.srdc.org)

*Vancouver Office*  
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604-601-4070 | 604-601-4080

*Toronto Office*  
481 University Avenue, Suite 705  
Toronto, Ontario M5G 2E9  
613-237-3169

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## Summary of major findings

The Foundations Workplace Skills Project (FWSP), a three-year initiative led by the Training Group at Douglas College, British Columbia, is the first study to use a randomized control trial design to evaluate the impacts of a Literacy & Essential Skill (LES) based program model targeted specifically to meet the needs of unemployed job seekers.

This second of two reports *describes the 12 week month impacts* of the FWSP on a variety of outcomes, including post-program training and employment trajectories.<sup>1</sup>

- **The Foundations Workplace Skills Project (FWSP) significantly increased hourly wage rates among the roughly two-thirds of research participants who found jobs**

Roughly two-thirds of both FWSP participants and control group members were employed in the 12 month period between baseline and the final follow-up survey. However, FWSP participants were significantly more likely to hold higher-wage jobs. At the time of the 12-month follow-up survey, 12 per cent of FWSP participants, but only 6 per cent of control group members, had a current job in the greater than 20 dollar per hour range (the highest wage quintile for this population) – a positive impact of 6 percentage points.

In contrast, FWSP participants were 8 percentage points less likely to have a current job in the 12.50 to 15 dollar per hour range (the middle wage quintile), with only 3 per cent of them holding such jobs compared to 11 per cent of control group members.

- **The FWSP also had a significant positive impact on occupational skill level, and reduced over-qualification rates**

Over 13 per cent of FWSP participants found employment in National Occupational Classification (NOC) skill level A jobs requiring a university degree, compared to only 4 per cent of the control group, for a 9 percentage point impact. In addition, over 23 per cent of control group members worked at the lowest NOC skill level (level D), compared to only 13.5 per cent of program participants, for a 9.5 percentage point impact.

In other words, the FWSP led to just as many university level jobs (level A) as unskilled labour (level D) jobs, in a population that is normally more than 5 times more likely to get an unskilled labour job than a university level job. Much of the occupational impact of the FWSP involved moving university graduates – many of them immigrants – away from unskilled labour (level D) jobs and into occupations commensurate with their levels of education (level A), thus reducing rates of over-qualification.

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<sup>1</sup> The first report (Palameta, Dowie, Nguyen, & Gyarmati, 2017) described the implementation of the FWSP program model and summarized the short-term (12 week) impacts of the program on participant career adaptability and Essential Skills.

- **The FWSP had significant positive impacts on job satisfaction**

A 7-item scale used to derive a composite job satisfaction measure revealed that 25 per cent of FWSP participants were overall satisfied or highly satisfied with their jobs, compared to 18 per cent of control group members – a 7 percentage point impact. Similarly, 19 per cent of control group were dissatisfied or highly dissatisfied with their jobs, compared to 11 per cent of program participants – an 8 percentage point impact.

More specifically, compared to program participants, a significantly higher proportion of control group members were dissatisfied or highly dissatisfied with their pay, opportunities to use their skill and experience, job security, support from their supervisors, and opportunities for skill development. This is consistent with the fact that fewer control group members had jobs commensurate with their levels of education and skill.

- **The FWSP program model was designed to produce impacts on wages and job quality by increasing employability among participants in three ways:**

- i. **The FWSP produced immediate positive impacts on career adaptability measures after completion of the program at 12 weeks, and several of these impacts were sustained at the 12-month follow-up stage.**

As detailed in a previous report (Palameta, Dowie, Nguyen, & Gyarmati, 2017), there were strong positive impacts observed at 12 weeks for all four measures of career adaptability – career planning, career decision-making self-efficacy, job search clarity, and job search self-efficacy.

Though impacts were not as widespread at 12 months, FWSP participants still showed significantly greater improvements in overall career adaptability, as close to 40 per cent made gains from baseline to 12 months on all four career adaptability measures compared to only 30 per cent of control group members, for a net positive impact of 10 percentage points. Most of this impact was tied to program participants' ability to conduct a more focused and effective job search.

- ii. **The FWSP produced positive impacts on Essential Skill scores in numeracy, document use, and reading at 12 weeks, as well as impacts on the use of Essential Skills such as reading and math in everyday activities at 12 months.**

As detailed in a previous report (Palameta, Dowie, Nguyen, & Gyarmati, 2017), there were strong positive impacts on all three assessed Essential Skills – numeracy, document use, and reading – at 12 weeks. Though Essential Skill assessments were not re-administered at 12 months, there were positive impacts on the frequency with which participants continued to apply Essential Skills such as math and reading in their everyday lives well after program activities had ended.

The proportion of program participants who reported reading or using information from books every day rose by 7.5 percentage points from 39 per cent at baseline to 47 per cent at follow-up, compared to a drop of 5.5 percentage points (from 35 per cent to 29.5 per cent) in the control group, for a net positive impact of 13 percentage points.

Similarly, those using math every day rose by 14 percentage points (from 21 per cent to 35 per cent) in the program group compared to an increase of only 4 percentage points (from 20 per cent to 24 per cent) in the control group, for a net positive impact of 10 percentage points.

Development and everyday application of literacy and numeracy skills may have laid the foundations for further formal education and training, as well as improving FWSP participants' chances of successful entry into target occupations.

**iii. The FWSP produced positive impacts on training intensity, and led to a higher frequency of training linked to high-wage jobs.**

Close to 50 per cent of both program and control groups reported that they had taken non-FWSP related training or education during the period between baseline and 12 months. However, more intensive training – defined as taking two or more courses or training for more than 40 hours – was completed by 17 per cent of program participants compared to 11 per cent of control group members, for a net positive impact of 6 percentage points.

In addition, among those who worked training was most often linked with medium-wage jobs (12.50 to 15 dollars per hour) for control group members – 10 per cent of them both trained and had medium-wage jobs, compared to only 3 per cent of program group members. On the other hand, training among program group members was most often linked with high-wage jobs (over 20 dollars per hour) – 7 per cent of the program group both trained and had high-wage jobs, compared to only 2 per cent of the control group, for a positive impact of 5 percentage points. The link with higher-wage jobs suggests that, compared to the control group, FWSP participants' training choices were better informed and more strategic.

Among those who were jobless for the entire 12-month period, training rates were significantly higher among program group members at 21 per cent, compared to 14 per cent of the control group, a positive impact of 7 percentage points. This suggests that some jobless program group members may still be investing in strategic training and on their way to transitioning into high-wage jobs.

▪ **The FWSP had significant positive impacts on mental health**

While the percentage of those who perceived activity limitations due to poor mental health appeared to increase among control group members from 27 per cent at baseline to 41 per cent at follow-up (a 14 percentage point increase), it stayed relatively stable among program group members, rising by only 3 percentage points (from 28 per cent at baseline to 31 per cent at follow-up), for a net positive impact of 11 percentage points.

The positive health impacts of the FWSP may have been linked to a greater sense of control and self-efficacy with respect to future career path, higher job satisfaction, and a more secure attachment to the labour market as a result of working in higher-wage, more skills-commensurate occupations.

- **FWSP impacts depended to some extent on the characteristics of those being served, with implications for policy and future research**

The FWSP had its largest employment impacts on university graduates, the majority of whom were recent immigrants, effectively moving this subgroup away from the low paid unskilled work they would have otherwise been doing, and into high-wage jobs commensurate with their levels of education. University graduates in the program group were 14 percentage points more likely than university graduates in the control group to get high-wage jobs, 17 percentage points more likely to get high skilled NOC level A jobs, and 17 percentage points less likely to get unskilled NOC level D jobs. These results suggest that the FWSP may be especially well-suited for skilled recent immigrants who have had difficulty leveraging their human capital into work in their field, or in a related field.

The FWSP also produced positive impacts for those with less education (college, high school or less), most of whom were Canadian born. FWSP participants in these subgroups showed significant gains relative to the control group in career adaptability, skill use, training, and mental health, suggesting that the program model was effective in boosting self-efficacy, fostering skill development, and encouraging less educated participants to take further training. However, we were unable to observe positive wage or job skill impacts over the 12 month research timeline for these subgroups. Future research could focus on results over a longer-time period, to see whether the career adaptability, skill development and training impacts observed in these subgroups bear fruit eventually. Future program models could also consider adding more direct demand side interventions – e.g., incorporating employer engagement, work placements, etc. – to transition high-need job seekers who have made employability gains more seamlessly into the labour market.



## Introduction

The Foundations Workplace Skills Project (FWSP), an initiative led by the Training Group at Douglas College, British Columbia, is the first study to use a randomized control trial design to test the impacts of a Literacy & Essential Skill (LES) based program model targeted specifically at unemployed job seekers.

The need for effective LES training models stems from over two decades of workplace LES assessment and research showing that a considerable portion of the Canadian workforce score below levels thought necessary to function effectively on the job. There is a growing body of evidence – most notably from the UPSKILL national demonstration project – that LES training is most effective when it is embedded within a vocational context that is aligned with job performance and business needs. As a result, recent years have seen a significant shift in attention and government funding from credential-based training for the unemployed towards LES interventions targeting low-skilled employees in a workplace setting.

The success of workplace based LES interventions and concurrent shift in funding and delivery models contributes to a service provision gap for job seekers – particularly with respect to occupation-relevant LES training. Few employment programs have used an Essential Skills framework to assess occupation-specific skill gaps among the unemployed, and as a result there has been a lack of targeted services focused on occupation-oriented skills upgrading for job seekers.

In addition to the service provision gap, there is also a research gap in terms of understanding the possible causal effects of raising Essential Skills levels among the unemployed. Though research has shown that higher literacy scores are correlated with shorter unemployment spells, higher earnings, and several other desirable outcomes, there has been no experimental or even program evaluation data showing that interventions to raise Essential Skill levels lead to improved outcomes for job seekers.

The FWSP aims to address both these gaps by: a) implementing a multi-stage training model that embeds Essential Skills assessment and upgrading within career development services, by first helping unemployed clients create an inventory of their own skills while also understanding the skill requirements of their targeted occupations, then developing individually-customized, occupationally-relevant plans to close the gap between current and required skills; and b) evaluating, in the context of a randomized field experiment, whether this combination of services improves client skill levels and career pathfinding ability, leading to increased participation in further training and ultimately higher quality jobs.

In contrast to LES interventions delivered in a workplace setting which usually focus on aligning training with vocational tasks and job performance indicators within a single sector or even a single occupation, the FWSP is designed to deliver training tailored to a broad range of participant-targeted occupations in the context of the post-secondary adult education system, with no direct involvement from prospective employers. As a result, the FWSP cannot be as tightly aligned with specific business needs as a workplace-based model. Nonetheless, its focus on integrating LES

assessment and upgrading within an occupation-targeted career path, using occupation-relevant materials, is unique to training models for the unemployed.

In addition, the FWSP target population is more distant from the labour market than many of those who receive training while employed, in the sense that they are not only jobless but often face significant barriers to finding a job (e.g., limited education and work experience, lack of job hunting skills, and limited English). It's unclear whether the FWSP model would work for this kind of population or whether it would require more demand-side focused interventions, such as work trials/placements or wage-subsidized employment.

This evaluation of the FWSP focuses on the following broad research question: can a program model focused on building occupation-targeted career paths and skills for the unemployed, despite little direct demand-side input, nonetheless supply job seekers with the tools they need to be recognized by employers and find jobs they would not have otherwise been able to get?

A previous report (Palameta, Dowie, Nguyen, & Gyarmati, 2017) focused on the implementation of the FWSP, with a detailed examination of the core components of the program model and the effectiveness with which they were delivered as intended across the three participating sites – Douglas College (British Columbia), Conestoga College (Ontario), and College of the North Atlantic (Newfoundland) – as well as the impacts on Essential Skill scores and career adaptability indicators shortly after program completion.

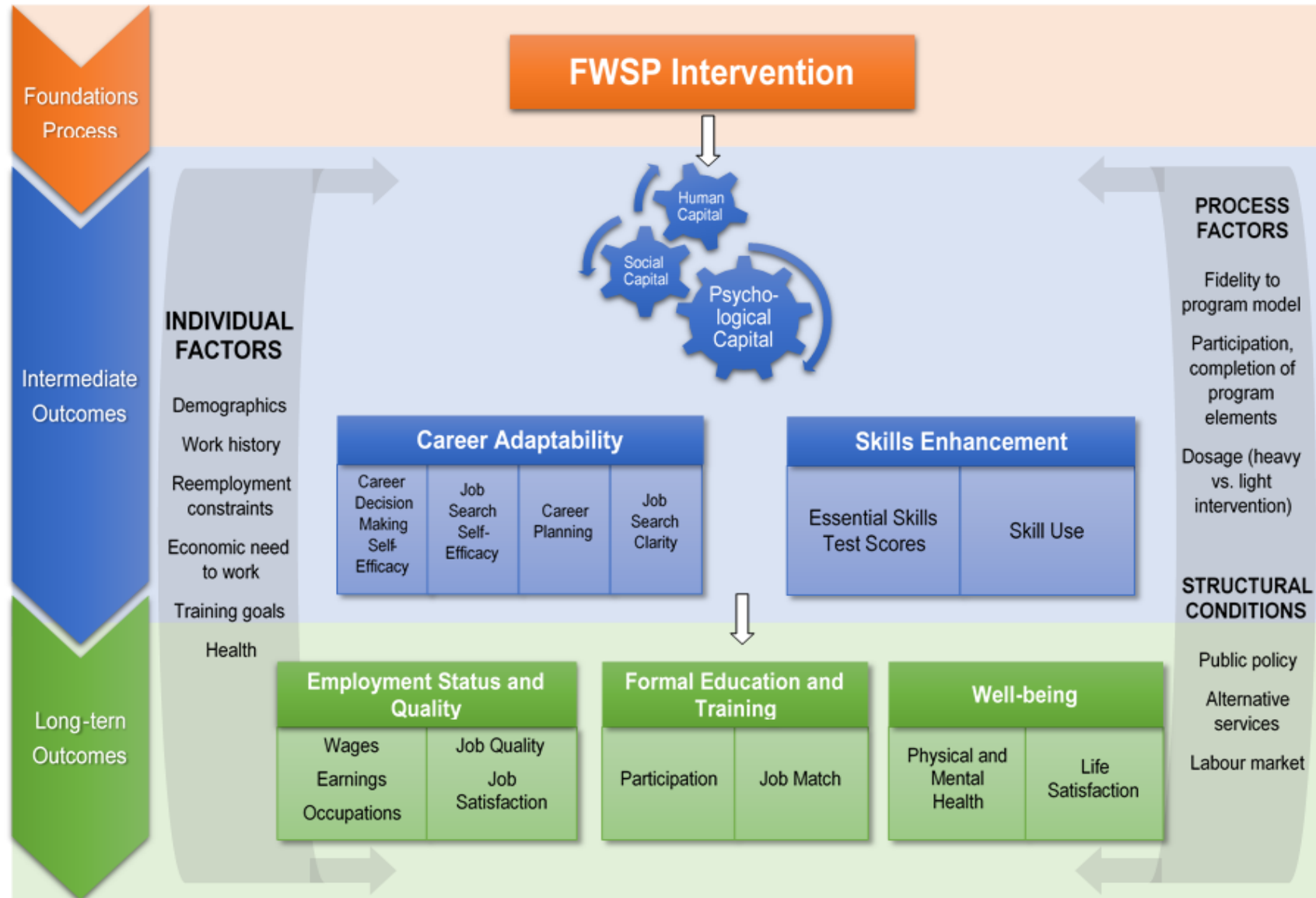
This report examines the longer-term (12-month) impacts of the program on a variety of outcomes, including career adaptability, skill use, participation in further training, employment, earnings, occupation, job satisfaction, health, and well-being.

## Theory of Change and research hypotheses

A Theory of Change (TOC) approach was used to map out the links between FWSP activities and its ultimate long-term goals. The TOC specifies the immediate outcomes the program is expected to produce, and how those outcomes would potentially create conditions for success leading to the achievement of desired longer-term goals (Figure 1). The TOC also facilitates the development of measures required to track both immediate and longer-term outcomes.

Based on the Theory of Change, we developed several research hypotheses around i) intermediate outcomes produced shortly after the program (assessed through a 12-week follow-up survey) and ii) longer-term outcomes (assessed through a 12-month follow-up survey).

Figure 1 Theory of Change



## Research hypotheses – intermediate outcomes

The FWSP focused on using an Essential Skills framework to help shape participant career paths to target occupations, and help participants understand and close skill gaps. As a result, we hypothesized that the program would produce immediate impacts on career adaptability (indicating an increased belief among participants in their ability to identify a clear, realistic career path and search for jobs in a targeted way) and Essential Skills (thus closing any skill gaps that may have hampered participants in their pursuit of their targeted occupations).

As detailed in the implementation report (Palameta, Dowie, Nguyen, & Gyarmati, 2017), both hypotheses were supported. There were significant 12-week impacts on all four measures of career adaptability – namely career planning, career decision-making self-efficacy, job search clarity, and job search self-efficacy. Program group members showed significantly larger gains from baseline to follow-up in all of these indicators than did their control group counterparts.

In addition, there were significant impacts on numeracy, document use, and reading among those with skill gaps who participated in the Skills Enhancement portion of the program. Skills Enhancement participants showed a large average increase in assessed scores, while matched control group members showed essentially no change from baseline.

## Research hypotheses – long-term outcomes

Immediate program impacts on career adaptability and skills suggest several possible pathways to longer-term success in the labour market. First, even for those who did not require further Essential Skill gains, better understanding of the alignment of their own skills with skills required by target occupations could help them define more focused career paths and job search strategies, and make more strategic choices in further training to acquire occupation-specific skills or qualifications.

In addition, for those who participated in Skills Enhancement, gains in document use, numeracy, and reading are likely to improve their foundational abilities and give them confidence to apply these skills in a variety of contexts, whether it be everyday activities or readiness for further formal education and training. The fact that the LES training they received at FWSP was integrated into a targeted career path, with use of vocationally relevant materials, may also improve their chances of successful entry into target occupations.

Overall, better defined career paths and job search, combined with skill upgrading and better training matches, may lead to higher quality jobs and greater job satisfaction. FWSP participants may also develop a greater sense of well-being as a result of feeling more control, less uncertainty, and less anxiety associated with their future career path and attachment to the labour market.

The research hypotheses associated with long-term outcomes summarized below.

**Compared to the control group, FWSP participants will show:**

- 1. Continued gains in career adaptability and use of Essential Skills**
- 2. Higher participation in training and better training outcomes**

3. **Better labour market outcomes, including higher-wage jobs in higher-skilled occupations**
4. **Higher levels of job satisfaction**
5. **Higher levels of health and well-being.**

Each of these hypotheses are investigated in subsequent sections below, after we first describe in detail the research design of the evaluation.

## Research design and sample attrition

### Random assignment

Evaluating the impact of a program like the FWSP poses several challenges, since individual outcomes are potentially a function of many different variables. For example, the outcomes of any given participant will likely be influenced by changes in that person's circumstances over the course of the program, as well as a variety of characteristics that person brings with them into the program, such as skill levels, target occupation, employment history, country of origin, etc. The effect of these variables is confounded with any effect that the intervention itself might have on individual outcomes.

To isolate the effects of an intervention from all other variables that may affect outcomes of interest, a reliable counterfactual is required to provide an accurate measure of what would have occurred in the absence of the intervention. Simply comparing those who choose to receive an intervention with those who don't is not sufficient, since these two groups are likely to differ in a variety of other ways.

It is widely accepted that the best way to construct a counterfactual and thereby a measure of true program impacts is through the use of random assignment. Thus the FWSP evaluation framework utilized a **randomized control trial (RCT) design**, whereby individuals who attended intake information sessions were assigned at random to either a **program group** that was eligible to receive the intervention or to a **control group** that was not eligible.

Random assignment ensures that the program and control groups do not differ systematically in terms of any characteristics that might influence the result, even characteristics that are not measured or observed. The only systematic difference between the two groups is that one is eligible for the intervention and the other is not. As a result, any differences that are observed over time in the experiences of the two groups can be attributed with confidence to the intervention, and can be labelled **experimental impacts**.

### Timelines and attrition from baseline to follow-up

Though the research design called for completing the long-term follow-up survey 12 months after random assignment, and though we refer to "impacts at 12 months" throughout the text, in fact there was a lot of variation among individual participants between the target date and the actual date of follow-up. This largely because individuals were contacted initially by e-mail followed if necessary by phone calls and "last-chance" reminders, so time between baseline and follow-up depended on how quickly they responded.

As illustrated in Figure 2, the timing of the 12 month for both the control and program groups ranged from a minimum of 12 months after random assignment to a maximum of 25 months. The fact that there is no large discrepancy in follow-up timelines between the groups increases our level of confidence in comparing their results.

**Figure 2 Follow-up survey and assessment timelines**

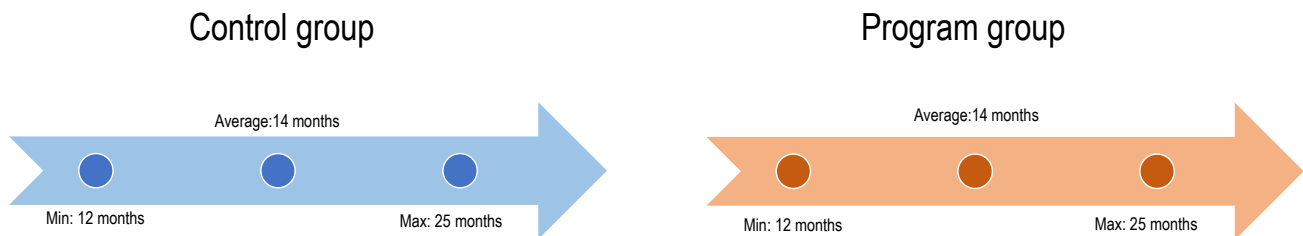


Table 1 shows the response rates associated with the 12-month follow-up survey. Despite the much longer timeline associated with the 12-month follow-up compared to the 12-week follow-up, response rates were actually considerably higher for the former (79 per cent for the control group; 79 per cent for the program group; 79 per cent overall) than for the latter (72 per cent for the control group; 58 per cent for the program group; 66 per cent overall).

There are several reasons for the difference in response rates: i) the 12-week follow-up included not only a survey but an Essential Skills assessment which required participants to be present at the college, whereas the 12-month follow-up included only a survey which could be done online or on the phone; ii) while the 12-month follow-up offered a \$50 incentive to both program and control participants, the 12-week follow-up offered the incentive only to the control group, with the result that response rates among program group members who left before completing the program were very low.

**Table 1 12-month survey response rates**

	Control group	Program group	Overall
Randomly assigned	221	231	452
Responded at 12-month follow-up	174	183	357
<b>Response rate (%)</b>	<b>78.7</b>	<b>79.2</b>	<b>79.0</b>

The baseline characteristics of those who responded to the 12-month follow-up survey are shown in Appendix A. Though random assignment ensures no systematic differences between program and control groups at baseline, small differences can arise especially if the sample is relatively small or if sample attrition from baseline to follow-up affects program and control groups differently.

As illustrated in Appendix A, there are few differences in baseline characteristics between FWSP program and control groups at follow-up – though the program group is slightly more likely to be composed of university-educated immigrants.

To counter any potential bias that may arise from these small differences between groups in baseline characteristics, we estimated program impacts in two ways: i) “unadjusted” impacts, which simply calculate the mean differences in outcomes between program and control groups; and



ii) “adjusted” impacts, which use regression to calibrate the impact estimates to account for any baseline differences in characteristics between program and control groups.

We found that impact estimates were very similar whether they were adjusted or unadjusted. Therefore, because they are easier to understand and communicate, for the remainder of this report we present only unadjusted impacts.

## Impacts on career adaptability and skill use

### Career adaptability

The strong impacts observed at 12 weeks for all four scale measures of career adaptability (career planning, career decision-making self-efficacy, job search clarity, and job search self-efficacy) had attenuated somewhat at 12 months.

This is largely because while the program group saw large immediate improvements at 12 weeks (which were maintained or even increased at 12 months), the control group also made gains albeit at a slower rate, so that by 12 months their improvements were sometimes on par with those seen in the program group.

Nonetheless, there was still a significant tendency for greater improvement in overall career adaptability among program group members – close to 40 per cent made gains from baseline to 12 months on all four career adaptability scales compared to only 30 per cent of control group members, a 10 percentage point impact (Table 2).

**Table 2** Impacts on career adaptability at 12 months

Improvement in career adaptability (%)	Control group	Program group	Impacts	Standard errors
Improved on all four scales	29.90	39.79	9.89 *	(5.15)
Improved on three	25.60	21.58	-4.02	(4.62)
Improved on two	18.90	15.91	-2.99	(4.13)
Improved on one or fewer	25.60	22.72	-2.88	(4.66)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

In addition, there was a significant impact on the job search clarity overall scale score, as well as on individual measures in some of the other scales.<sup>2</sup> Generally, program group members showed greater gains than the control group on measures related to a more focused and effective job search, including job search clarity and confidence in their ability to do tasks such as making cold calls to get a job interview, communicating skills and experience effectively to employers, finding long-term employment trends for specific occupations, and switching jobs if necessary.

For example, the percentage of program participants who agreed or strongly agreed that they were confident they could communicate their skills and experience to attract the interest of employers

<sup>2</sup> Measures are based on 5-point scales. High scores (closer to 5) indicate high levels of respondent clarity or confidence in their ability to carry out the activity described in the measure.

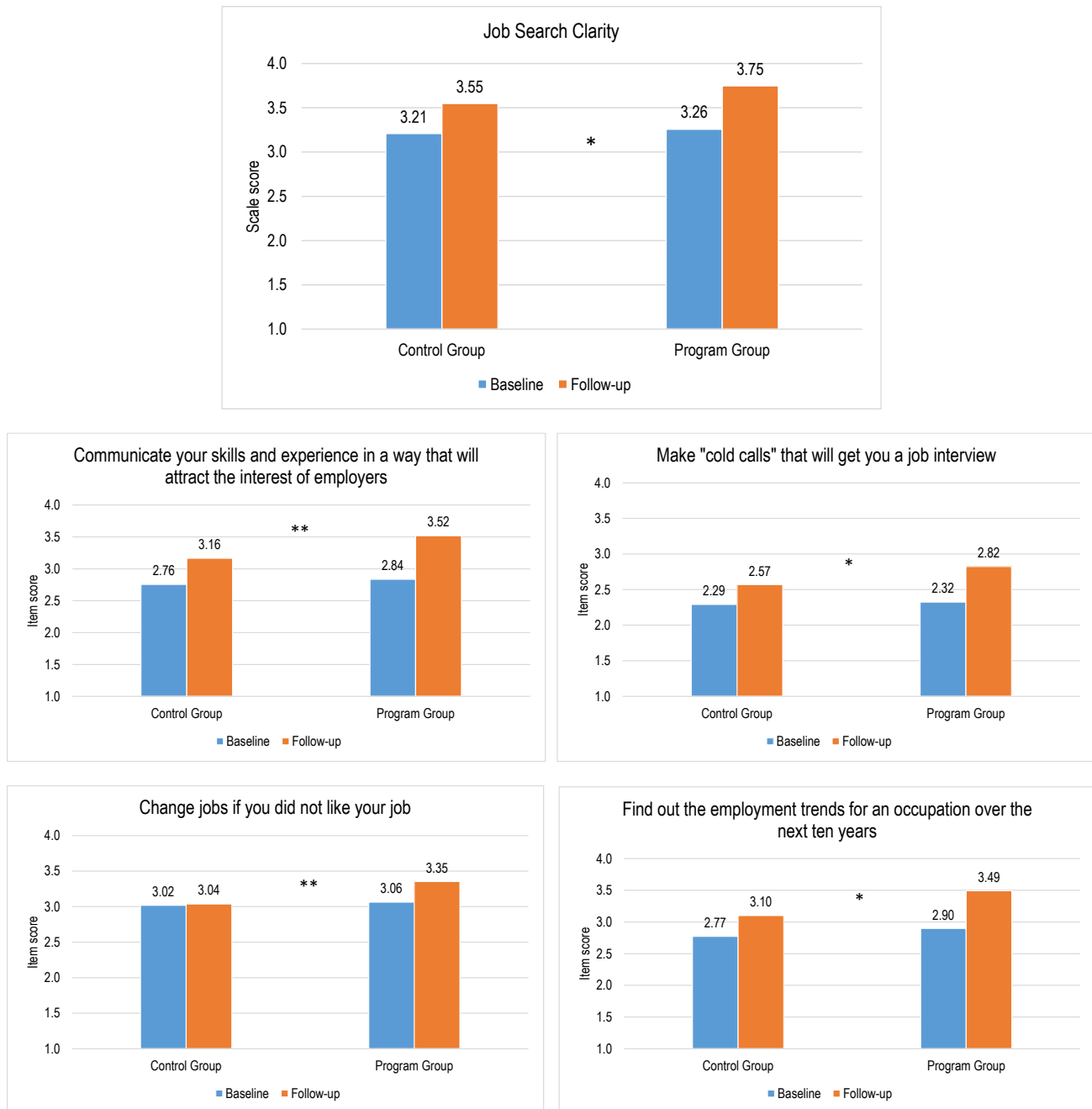
rose from 24 per cent at baseline to 54 per cent at the 12-month follow-up, for a net gain of 30 percentage points. By comparison, the proportion of control group members who said they could do so rose by only 11 percentage points (from 23 per cent to 34 per cent), for a net positive impact of 19 percentage points.

Similarly, while the proportion of those who lacked confidence in their ability to change jobs if they didn't like their current job increased slightly by 2 percentage points (from 25 per cent to 27 per cent) in the control group, but decreased by 20 percentage points among program participants (from 32 per cent to 12 per cent), for a net positive impact of 22 percentage points.

Significant impacts on scale or individual measure scores are illustrated in Figure 3, while complete results for all career adaptability scales and their individual items are shown in Appendix B.

These results suggest that program participants enjoyed not only an early head start with respect to career planning and decision-making, but that they were also able to maintain a sustained advantage over their control group counterparts when it came to several important types of job search activities.

**Figure 3 Career adaptability impacts**



**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Skill use

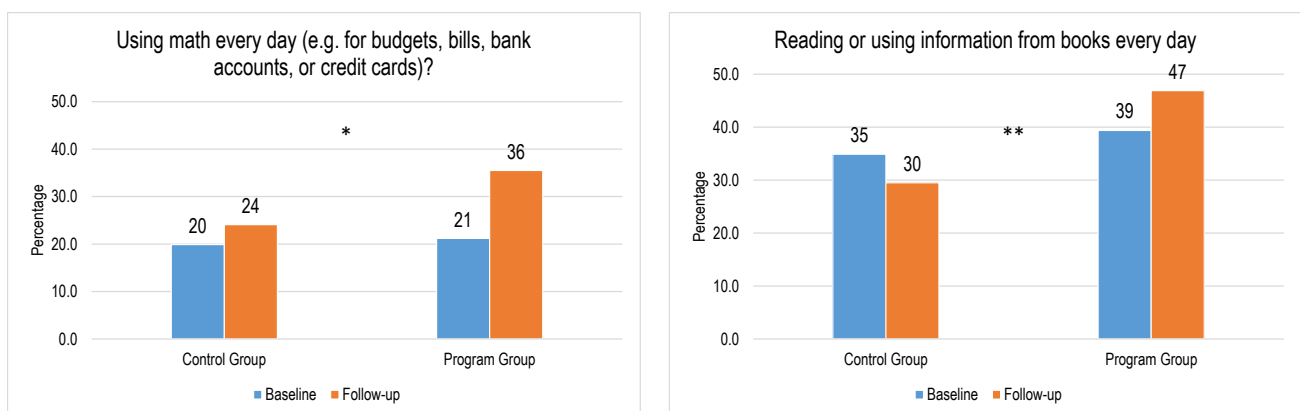
Essential Skills scores were only assessed twice, at baseline and shortly after the program at 12 weeks. They were not reassessed at 12 months because of the impracticalities associated with either getting participants to return to the college to do the assessments in person, or allowing them to get assessed remotely with no way of telling whether they were receiving help or not.

As a result, we were not able to measure sustained impacts on Essential Skills scores or levels. However, participants were asked at both baseline and 12 months about the frequency with which they used skills like reading, writing, or doing math outside of work. This measure is useful in that it captures the extent to which program participants continued to apply Essential Skills in their everyday lives well after their program activities had ended, and compares sustained changes in everyday skill application over time between program and control groups.

Compared to the control group, program participants made sustained gains from baseline to follow-up in terms of practicing and applying Essential Skills to carry out everyday tasks and activities. In particular, the proportion of program group members who reported reading or using information from books every day rose by 7.5 percentage points from baseline to follow-up, compared to a drop of 5.5 percentage points in the control group, for a net positive impact of 13 percentage points. Impacts on using math were similar in magnitude, with the proportion using math every day rising by 14 percentage points in the program group compared to an increase of only 4 percentage points in the control group, for a net positive impact of 10 percentage points (Figure 4).

Development and everyday application of literacy and numeracy skills may lay the groundwork for further formal education and training, and when, as in the FWSP, combined with use of occupation-relevant materials may also increase the likelihood of successful entry into target occupations.

**Figure 4 Skill use impacts**



**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Complete results for skill use are illustrated in Appendix C.

## Impacts on training

In terms of training, we examined whether participation in the FWSP would lead program group members to take further training after completion of the FWSP.

Almost half of both program and control members did some non-FWSP education or training in the 12 months between baseline and follow-up (Table 3). Unsurprisingly, program group members, having just taken a focused, intensive career pathfinding intervention, were significantly less likely than control group members to take further training related to career planning and job search. Otherwise, there were no significant differences between the groups in terms of participation in either job-related training, language training, training for personal interest or academic upgrading, or types of training that didn't fit into any of the above categories.

Though there were few impacts on participation rates, there is some indication that program group members may have trained more intensively. While the majority of those who trained in both groups took one course only or trained for 40 hours or less, 17 per cent of program group members either took at least two courses or trained for more than 40 hours, compared to 11 per cent of the control group – a 6 percentage point impact.

These results suggest that a tendency to train more intensively after leaving the FWSP may have provided some program participants with the additional skills or qualifications they needed for entry into their target occupations. Furthermore, our measures (participation rate and intensity based on hours/courses) do not capture potentially better training matches that program participants may have made. Better matches with occupational requirements may facilitate employment in desired professions. A more detailed investigation of training outcomes, and the links between training and employment, follows in the next section.

**Table 3 Impacts on training at 12 months**

	Control group	Program group	Impacts	Standard errors
<b>Training Participation Rates, other than FWSP, since baseline (%)</b>				
Have taken education or training (other than FWSP)	49.40	46.59	-2.81	(5.42)
Career Planning and Job Search	19.90	12.52	-7.38 *	(3.99)
Have taken education or training (excluding career planning and job search)	45.20	46.04	0.84	(5.40)
Job or Work-Related Skills	26.50	21.58	-4.92	(4.63)
Language or Literacy	9.04	11.94	2.90	(3.31)
Personal Interest or to Improve Education	11.40	16.43	5.03	(3.74)
Other	13.90	15.95	2.05	(3.86)
<b>Training intensity (Excluding career planning and job search) (%)</b>				
No training	54.80	53.96	-0.84	(5.40)
Less intensive training: One course only, and 40 hours or less	34.30	28.94	-5.36	(5.04)
No training or less intensive training	89.20	83.00	-6.20 *	(3.73)
More intensive training: Two or more courses, or more than 40 hours	10.80	17.00	6.20 *	(3.73)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Impacts on employment

There are several reasons to suspect that a one year follow-up period would not be long enough to capture the full employment impacts of a program like the FWSP. For one, the program itself lasted up to 12 weeks for some participants which gave them a smaller follow-up window to find a job compared to the control group. In addition, as described above the FWSP may have led some to pursue further intensive training, which would give them an even narrower window in which to find a job within the research timeline. Finally, the impacts of occupation-specific training often take several years to be fully realized.<sup>3</sup>

<sup>3</sup> This delayed effect of training is widely accepted in the literature. For example, van Ours (2004) postulated that all employment-related training programs are expected to have an initial negative lock-in effect as a result of participants' reduced job-search activities while in training. Testing this hypothesis empirically, Lechner et al. (2011) found that indeed, length of unemployment tends to be correlated with length of training programs in the short-run. However, tracking employment results of participants eight years after program entry, they found that most of the training programs they examined seem to boost employment rates by about 10 percentage points. More recently, Kambourov et al. (2012) confirmed that while benefits of training targeted to displaced workers take some time to realized, the amount of human capital acquired and the better occupational matches

What we are primarily looking for in this evaluation, therefore, are early signs – e.g., better training outcomes leading to higher wage jobs in higher skilled occupations – that some program participants are on their way to better long-term earnings trajectories and labour market attachment.

## Employment rate and wage

The FWSP had no impact on employment rate, as around one-third of both program and control groups continued to be jobless for the whole 12-month period between baseline and follow-up (Table 4). If anything, there is a non-significant trend for higher rates of joblessness among program participants. This may be a result of the opportunity cost associated with the FWSP (described above) and/or a tendency for program participants to remain jobless longer as a result of more intensive post-FWSP training.

There was a significant impact on wage distribution among those who had worked since baseline, with the program group being 9 percentage points less likely to have an hourly wage in the 12.50 to 15 dollar per hour category. There was also a positive trend favouring the program group in the greater than 20 dollar per hour category.

**Table 4** Impacts on employment rate and wage distributions at 12 months

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
<b>Previous or current job – hourly wage quintiles (%)</b>				
Quintile 1 (\$11/hour or less)	14.50	14.08	-0.42	(3.80)
Quintile 2 (More than \$11 to \$12.5/hour)	11.50	12.98	1.48	(3.55)
Quintile 3 (More than \$12.5 to \$15/hour)	17.60	9.06	-8.54	** (3.67)
Quintile 4 (More than \$15 to \$20/hour)	13.90	12.39	-1.51	(3.67)
Quintile 5 (More than \$20/hour)	9.70	14.69	4.99	(3.53)

**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

The trend showing a greater proportion of high wage jobs among program participants is shown more clearly when those who worked are separated into i) those who had a job since baseline, but were not working at the time of the 12-month follow-up, and ii) those with a current job. The FWSP had significant impacts on current wage at the time of the survey (Table 5).

trainees obtained in the long-run substantially outweigh the initial wage loss associated with occupation-specific training participation.



Program participants were 8 percentage points less likely to have a current job in the 12.50 to 15 dollar per hour range, and 6 percentage points more likely to have a current job in the greater than 20 dollar per hour range. In fact, high wage (more than 20 dollars per hour) jobs were the most common jobs held by program group members who were working at the time of the survey.

This is a population that is normally quite distant from the labour market – they had worked on average only 16 months in the past three years, and more than 70 per cent indicated the presence of two or more barriers to finding a job (Appendix A). Most control group members who had jobs at the time of the 12-month survey were paid under 15 dollars per hour. Yet some program participants were able to transition into high-wage (over 20 dollars per hour) jobs they wouldn't have otherwise been able to get.

A comparison of the current jobs held by program and control group members at 12 months shows that both groups worked an average of over 30 hours per week. However, significantly higher hourly wages among program participants translated into higher monthly earnings (Figure 5).<sup>4</sup>

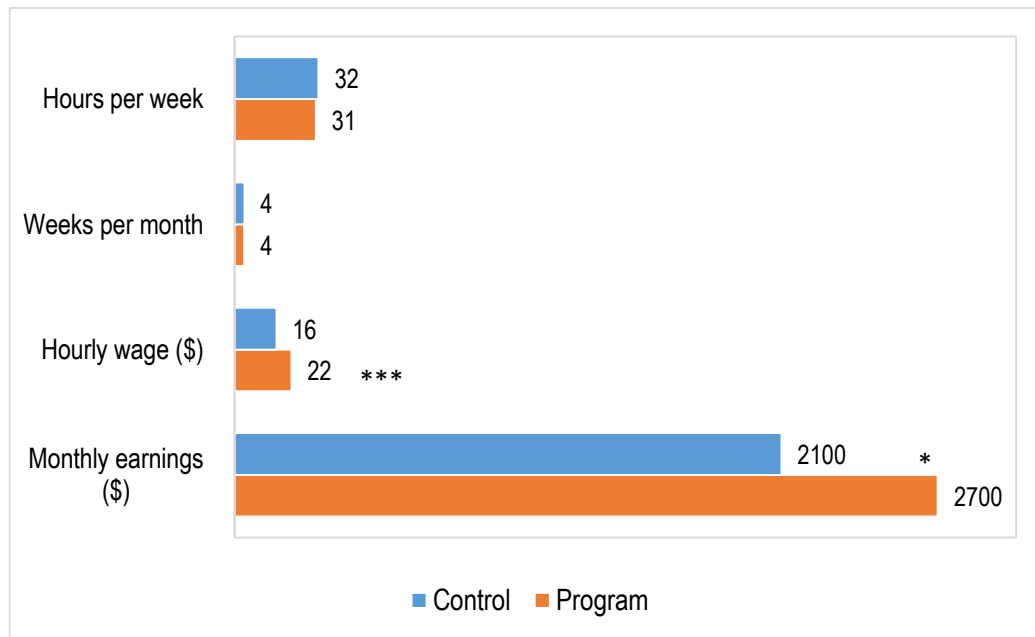
**Table 5** Impacts on wage distribution at 12 months, separating those who had worked since baseline but were not working at the time of the survey (previous job), and those with a job at the time of the survey (current job)

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
<b>Previous job (%)</b>				
Quintile 1 (\$11/hour or less)	9.70	11.30	1.60	(3.32)
Quintile 2 (More than \$11 to \$12.5/hour)	5.45	4.52	-0.94	(2.37)
Quintile 3 (More than \$12.5 to \$15/hour)	6.06	5.65	-0.41	(2.55)
Quintile 4 (More than \$15 to \$20/hour)	4.85	5.65	0.80	(2.42)
Quintile 5 (More than \$20/hour)	3.64	2.83	-0.81	(1.92)
<b>Current job (%)</b>				
Quintile 1 (\$11/hour or less)	4.85	2.83	-2.02	(2.09)
Quintile 2 (More than \$11 to \$12.5/hour)	6.06	8.47	2.41	(2.81)
Quintile 3 (More than \$12.5 to \$15/hour)	11.50	3.37	-8.13	*** (2.84)
Quintile 4 (More than \$15 to \$20/hour)	9.09	6.78	-2.31	(2.94)
Quintile 5 (More than \$20/hour)	6.06	11.86	5.80	* (3.07)

**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

<sup>4</sup> Figure 5 shows outcomes pertaining to a subgroup that is defined on the basis of events that occurred after random assignment (i.e., those who got current jobs). As a result, though estimates of the differences between program and control members of this subgroup have descriptive value, they are not necessarily bias-free and should not be described as experimental impacts.

**Figure 5** Average hours, wages, and earnings at 12 months among those with a current job



**Source:** SRDC 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## The links between training, employment, and wage

Having established that the FWSP led to significantly more high-wage jobs among program participants, we turn our attention to the links between wages and training, and the extent to which the difference in wage distribution between program and control groups may be linked with training.<sup>5</sup>

As summarized previously, there were no significant differences in training rates between control and program participants – though the latter group trained more intensively on average. We now present evidence that in the case of program participants, training appears to be linked with better jobs, especially better current jobs.

Table 6 recapitulates Table 4 by showing FWSP impacts on employment and wage distribution, while adding training rates for each category of employment and wage.

Among those who worked, training was more associated with getting jobs in the middle wage quintile (12.50 to 15 dollars per hour) for control group members – 10 per cent of them trained and got jobs in the middle wage quintile, compared to only 3 per cent of program group members. On

<sup>5</sup> As in the previous section, training is defined as any non-FWSP training or education taken subsequent to the FWSP by program participants, or anytime between baseline and follow-up by the control group.

the other hand, training among program group members was more associated with the highest wage quintile – 7 per cent of the program group trained and got jobs of over 20 dollars per hour, compared to only 2 per cent of the control group.

**Table 6 Impacts on training and wage distribution at 12 months**

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
Trained	14.50	21.42	6.92 *	(4.14)
Did not train	16.40	13.60	-2.80	(3.87)
<b>Previous or current job (%)</b>				
\$11/hour or less	14.50	14.08	-0.42	(3.80)
Trained	5.45	4.52	-0.94	(2.37)
Did not train	9.09	9.60	0.51	(3.16)
More than \$11 to \$12.5/hour	11.50	12.98	1.48	(3.55)
Trained	6.67	5.09	-1.58	(2.56)
Did not train	4.85	7.35	2.50	(2.58)
More than \$12.5 to \$15/hour	17.60	9.06	-8.54 **	(3.67)
Trained	9.70	2.83	-6.87 ***	(2.63)
Did not train	7.88	6.22	-1.66	(2.78)
More than \$15 to \$20/hour	13.90	12.39	-1.51	(3.67)
Trained	5.45	3.95	-1.50	(2.30)
Did not train	8.48	7.91	-0.58	(2.98)
More than \$20/hour	9.70	14.69	4.99	(3.53)
Trained	1.82	6.78	4.96 **	(2.16)
Did not train	7.27	7.91	0.64	(2.87)

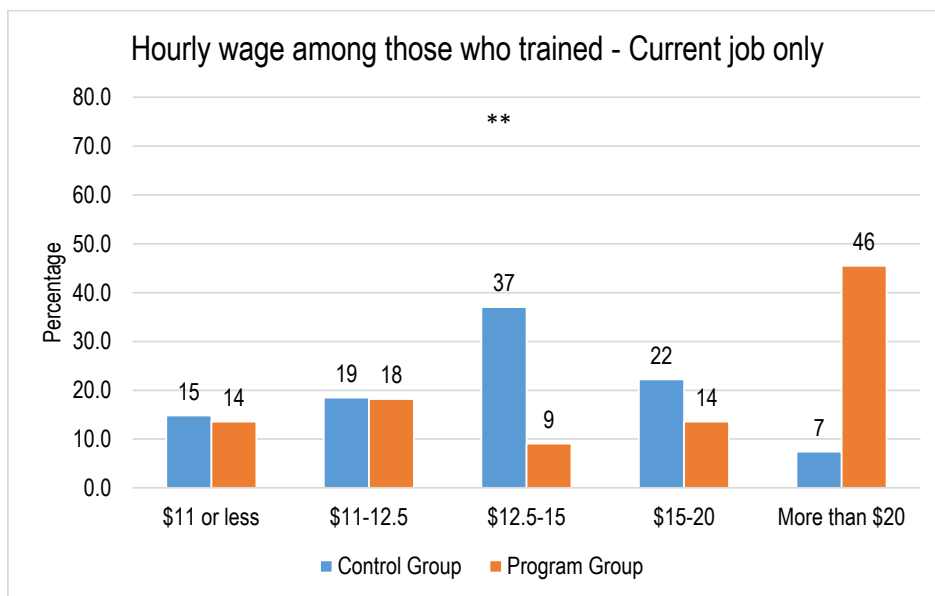
**Source:** SRDC 12-month follow-up surveys. The number of respondents reporting training status (161 and 172 in the control and program groups, respectively) is slightly less than those reporting wage (165 and 177, respectively). The small numbers of those who reported wage but are missing training status are not shown in the table. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Appendix D shows that most of the joint impacts on training and wages applied to those who had current jobs at the time of the 12-month follow-up, rather than those who had previous jobs since baseline but were not working at the time of the follow-up.

We don't have data on when the training took place, but the lack of a link between training and previous job wage distribution may indicate that in some cases people found a job early in the research time frame, and took their training after leaving or losing the job. Those who had a current job though likely did their training prior to getting the job, and are thus more likely to have a direct link between training and wage.

The wage outcomes of those who trained and held current jobs at the time of the follow-up survey are illustrated in Figure 6.<sup>6</sup> Thirty-seven per cent of control group members who had trained and were working at the time of the 12-month follow-up had middle-quintile wage jobs and only 7 per cent had jobs at the highest wage quintile (more than 20 dollars per hour). In contrast, almost half (46 per cent) of currently employed program participants who had done further training after completing the FWSP were making more than 20 dollars per hour at the time of the follow-up survey. These results suggest that, compared to the control group, program participants were able to make more informed and strategic training choices, and that in addition to promoting more intensive training, the FWSP led to better training matches with higher-wage occupations.

**Figure 6 Wages distributions among those with a current job who had taken training**



**Source:** SRDC 12-month follow-up surveys. There are 58 and 48 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

<sup>6</sup> Figure 6 shows outcomes for a portion of the overall population (i.e., those who trained and got current jobs). Thus percentage point differences between program and control members shown here do not reflect impacts of the FWSP on the overall population, which can be found in Appendix D.

Among those who were jobless for the entire period between baseline and follow-up, training rates were significantly higher among program group members. Over 21 per cent of the program group were jobless and training, compared to 14 per cent of the control group, a positive impact of 7 percentage points. This supports the notion that some program participants were still jobless at 12 months as a result of the opportunity costs associated with i) the FWSP, and ii) taking further training after completion of the FWSP.

Furthermore, the high training rate among jobless program participants compared their control group counterparts, coupled with the fact that the FWSP produced better training links to higher-wage jobs, suggests that had the research timeline been extended, some jobless program group members may have made the transition to greater than 20 dollar per hour jobs.

## Occupation

To investigate further the hypothesis that the FWSP led to better training matches that allowed participants access to higher-wage occupations, we next look at occupational data from the 12-month follow-up survey.

Occupations are classified according to the National Occupational Classification (NOC) 2011 (the latest version available). Based on drop down menus that asked respondents who worked to first select their broad occupational category, then their specific occupations from a list corresponding to occupations from the selected category. In this way, we were able to identify the first two-digits of the NOC associated with the occupations of most research participants who had worked since baseline.<sup>7</sup>

Broad occupational categories corresponding to the first digit of the NOC are illustrated in Table 7. The results show that the most common occupation category for both program and control groups was sales and service. However, the FWSP did move a handful of people into management occupations. Though the percentage of program participants in management occupations is small (3.4 per cent), it is worth noting that nobody in the control group was able to find a similar position. In addition, the FWSP moved people away from occupations in trades, transport and equipment operation.

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<sup>7</sup> In some cases, we relied on matching write-in job descriptions with NOC occupations. In the absence of other information, we also relied on participant selection of the normal educational requirements associated with their occupations – when information on both participant estimate of educational requirements and educational requirements derived from occupation were both available, the correlation between the two was very high 0.9, making the former a reliable indicator in the absence of the latter.

**Table 7 Impacts on broad occupation category at 12 months**

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
<b>Previous or current job (%)</b>				
				*
0: Management occupations	0.00	3.39	3.39	* (1.36)
1: Business, finance and administration occupations	7.88	11.30	3.42	(3.18)
2: Natural and applied sciences and related occupations	2.42	3.39	0.97	(1.82)
3: Health occupations	3.03	4.52	1.49	(2.06)
4: Occupations in education, law and social, community and government services	11.50	7.33	-4.17	(3.17)
5: Occupations in art, culture, recreation and sport	0.00	1.13	1.13	(0.80)
6: Sales and service occupations	22.40	21.45	-0.96	(4.49)
7: Trades, transport and equipment operators and related occupations	9.70	4.52	-5.18	* (2.79)
8: Natural resources, agriculture and related production occupations	0.00	0.00	0.00	(0.00)
9: Occupations in manufacturing and utilities	9.09	5.65	-3.44	(2.84)

**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Skill levels associated with occupations, corresponding to the second digit of the NOC, are illustrated in Table 8 (for a fuller description of the skill levels, see Appendix E). The results show that the FWSP had a large and significant impact on occupational skill level. Over 13 per cent of program participants worked in skill level A jobs requiring a university degree, compared to only 4 per cent of the control group, for a 9 percentage point impact. In addition, over 23 per cent of control group members worked at the lowest skill level (level D), compared to only 13.5 per cent of program participants, for a 9.5 percentage point impact.

In other words, the FWSP led to just as many university level jobs (level A) as unskilled labour (level D) jobs, in a population that is normally more than five times more likely to get an unskilled labour job than a university level job.

**Table 8 Impacts on occupation skill level at 12 months**

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
<b>Previous or current job (%)</b>				
Level A: University degree	4.24	13.56	9.32 ***	(3.02)
Level B: Non-university post-secondary	18.20	16.40	-1.80	(4.11)
Level C: High school diploma	21.20	19.20	-2.00	(4.36)
Level D: No formal educational requirements	23.00	13.53	-9.47 **	(4.18)

**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Table 9 shows occupational skill level at different levels of participant educational attainment, and confirms that much of the occupational impact of the FWSP involved moving university graduates away from unskilled labour (level D) jobs and into occupations commensurate with their levels of education (level A).

Thirteen per cent of program participants had both a university degree and a level A job, compared to only 3 per cent of the control group, for a 10 percentage point impact. Conversely, almost 10 per cent of control group members had both a university degree and a level D job, compared to only 3 per cent of program participants, for a 6 percentage point impact.

**Table 9 Impacts on occupation skill level at 12 months, by participant educational attainment**

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
University degree	14.50	15.21	0.71	(3.86)
College degree or apprenticeship training	9.09	10.17	1.08	(3.20)
High school diploma	4.24	6.78	2.54	(2.46)
Less than high school	3.64	2.26	-1.38	(1.84)
<b>Previous or current job (%)</b>				
Skill Level A	4.24	13.56	9.32 ***	(3.02)
University degree	3.03	12.99	9.96 ***	(2.87)
College degree or apprenticeship training	1.21	0.00	-1.21	(0.85)
High school diploma	0.00	0.57	0.57	(0.57)
Less than high school	0.00	0.00	0.00	(0.00)

	Control group	Program group	Impacts	Standard errors
Skill Level B	18.20	16.40	-1.80	(4.11)
University degree	7.88	10.17	2.29	(3.10)
College degree or apprenticeship training	7.88	3.39	-4.49	*
High school diploma	1.82	2.83	1.01	(1.63)
Less than high school	0.00	0.00	0.00	(0.00)
Skill Level C	21.20	19.20	-2.00	(4.36)
University degree	6.67	10.74	4.07	(3.04)
College degree or apprenticeship training	6.06	3.39	-2.67	(2.31)
High school diploma	6.67	3.96	-2.71	(2.44)
Less than high school	1.82	1.13	-0.69	(1.31)
Skill Level D	23.00	13.53	-9.47	**
University degree	9.70	3.39	-6.31	**
College degree or apprenticeship training	9.70	2.83	-6.87	***
High school diploma	1.82	6.22	4.40	**
Less than high school	1.21	1.13	-0.08	(1.17)

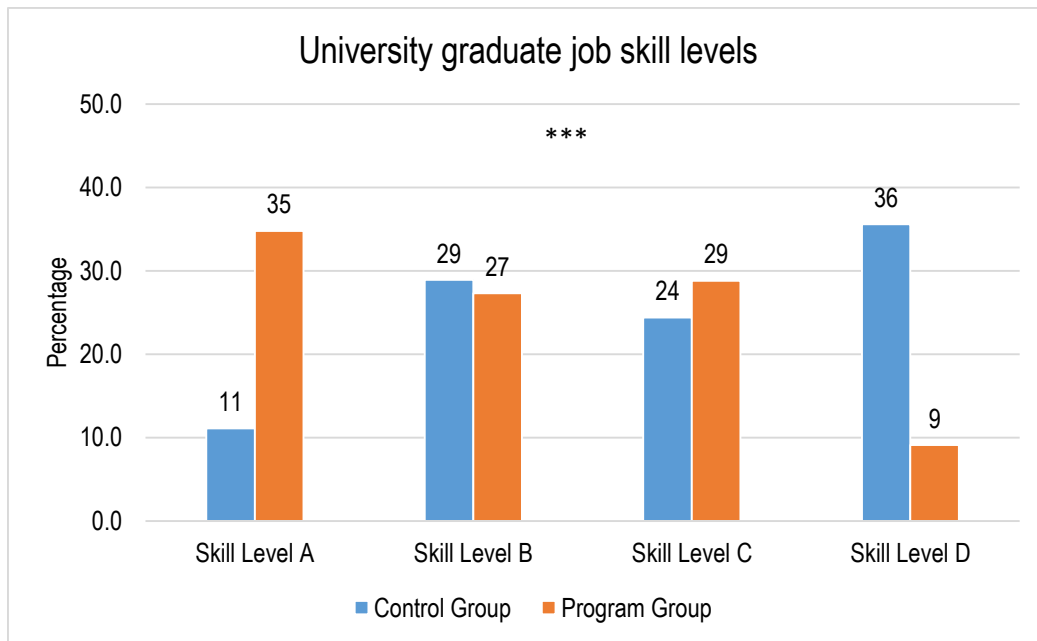
**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Since almost half of research participants were university educated, many of them immigrants, the program had the important effect of reducing over-qualification among this group, and moving many of them into jobs appropriate for their educational levels. Indeed, among university graduates in the program group who had worked since baseline, 35 per cent had level A jobs and only 9 per cent had level D jobs. In contrast, only 11 per cent of employed control group members with university degrees had level A jobs and a full 36 per cent had level D jobs (Figure 7).<sup>8</sup>

<sup>8</sup> Figure 7 shows outcomes for a portion of the overall population (i.e., university graduates who had worked since baseline). Thus percentage point differences between program and control members shown here do not reflect impacts of the FWSP on the overall population, which can be found in Table 9.



**Figure 7 Occupational skill levels among university graduates with jobs**



**Source:** SRDC 12-month follow-up surveys. There are 69 and 94 observations in the control and program groups, respectively. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

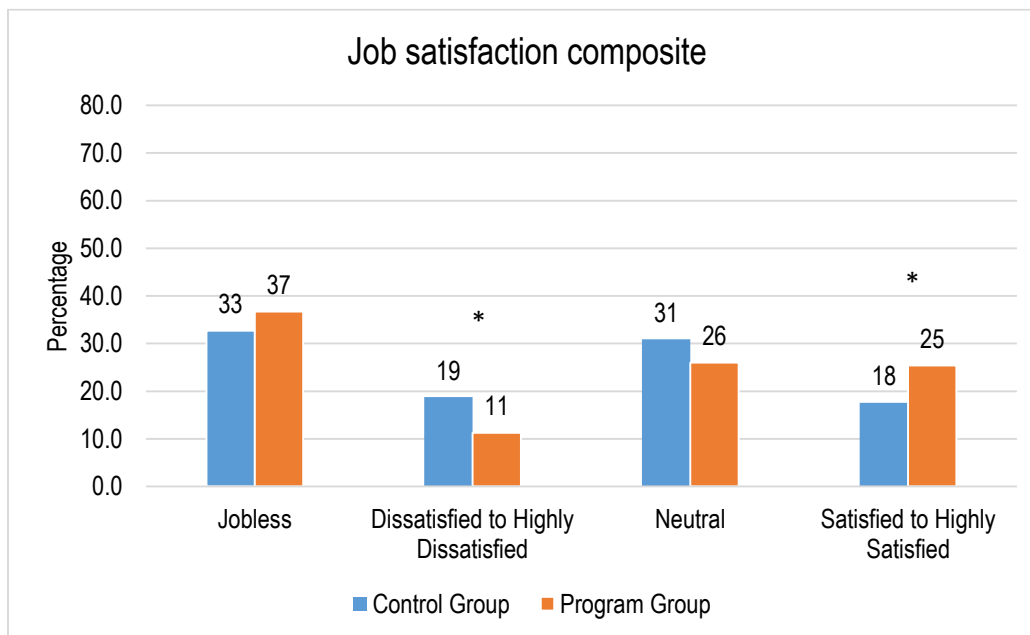
## Impacts on job satisfaction

Besides wage and occupation, another indicator of job quality is participants' satisfaction with different aspects of their jobs, including their 1) pay, 2) job security, 3) opportunities for career growth and promotion, 4) support from supervisor/manager, 5) decision-making latitude, 6) opportunities to use skills and experience, and 7) opportunities to develop new skills. These seven survey measures were combined into a scale, and a scale score was calculated for each participant who had a job during the 12-month period since baseline.

Significant impacts are evident for this composite job satisfaction measure (Figure 8). Twenty-five per cent of program participants were satisfied or highly satisfied with their jobs, compared to 18 per cent of control group members – a 7 percentage point impact. Similarly, 19 per cent of control group were dissatisfied or highly dissatisfied with their jobs, compared to 11 per cent of program participants – an 8 percentage point impact.

Impacts on the full range of job satisfaction measures are illustrated in Appendix F. These results indicate that compared to program participants, a significantly higher proportion of control group members are dissatisfied or highly dissatisfied with their pay, opportunities to use their skill and experience, job security, support from their supervisors, and opportunities for skill development. This is consistent with the narrative suggested above that fewer control group members are working at jobs commensurate with their levels of education and skill.

**Figure 8** Impacts on job satisfaction composite measure at 12 months



**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Impacts on health and well-being

In addition to its impact on participant jobs, the FWSP also had a positive impact on general health and well-being. While the rate of perceived activity limitations due to poor mental health appeared to increase among control group members from baseline to follow-up, it stayed relatively stable among program group members. Those who said their activities at work, at home, or during recreation were sometimes or often limited by poor mental health rose by 14 percentage points (from 27 per cent at baseline to 41 per cent at 12 months) in the control group, but by only 3 percentage points in the program group (from 28 per cent at baseline to 31 per cent at follow-up), for a net positive impact of 11 percentage points. There was a similar trend for perceived activity limitations due to physical health issues, though it failed to attain statistical significance (Table 10).

In addition, overall life satisfaction increased from baseline to follow-up among program group members, while remaining relatively unchanged in the control group. Again though, the impact failed to achieve statistical significance.

The positive health impacts of the FWSP may have been linked to program participants feeling more in control with respect their future career path, more satisfied with their jobs, and more secure in their attachment to the labour market as a result of being more likely to work in higher-wage, more skills-commensurate occupations.

**Table 10 Impacts on health and life satisfaction at 12 months**

Characteristics	Control group		Program group		Impacts	Standard errors
	Baseline	Follow-up	Baseline	Follow-up		
<b>Mental Health Problems</b>						
Never	55.15	44.24	58.86	51.43	3.48	(6.12)
Rarely	18.18	15.15	13.14	17.14	7.03	(5.23)
<b>Never or Rarely</b>	<b>73.33</b>	<b>59.39</b>	<b>72.00</b>	<b>68.57</b>	<b>10.51</b> **	(6.97)
Sometimes	22.42	32.12	22.86	26.29	-6.27	(5.67)
Often	4.24	8.48	5.14	5.14	-4.24	(3.05)
<b>Sometimes or Often</b>	<b>26.66</b>	<b>40.60</b>	<b>28.00</b>	<b>31.43</b>	<b>-10.51</b> **	(6.97)
<b>Physical Health Problems</b>						
Never	56.36	41.82	62.29	52.00	4.26	(5.9)
Rarely	19.39	19.39	13.14	16.57	3.43	(5.8)
<b>Never or Rarely</b>	<b>75.75</b>	<b>61.21</b>	<b>75.43</b>	<b>68.57</b>	<b>7.69</b>	(7.11)
Sometimes	20.61	28.48	21.14	24.57	-4.45	(5.8)
Often	3.64	10.30	3.43	6.86	-3.24	(3.0)
<b>Sometimes or Often</b>	<b>24.25</b>	<b>38.78</b>	<b>24.57</b>	<b>31.43</b>	<b>-7.69</b>	(7.11)
<b>Life Satisfaction (10 point scale)</b>	<b>6.01</b>	<b>6.12</b>	<b>6.16</b>	<b>6.68</b>	<b>0.41</b>	(0.26)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Subgroup impacts and targeting implications

As detailed in the sections above, impacts of the FWSP on the overall population were largely positive along a number of dimensions, from career adaptability and skill use, to training, wages, job skill levels, and job satisfaction, as well as health and well-being. We next investigate whether these impacts were attained by the whole population, or whether they were driven by key subgroups.

### Education subgroups

Table 9 showed that impacts on job skill level applied largely to university graduates, moving them from unskilled level D jobs to highly skilled level A jobs. In order to examine whether other impacts are driven primarily by university graduates, we divide the population into three groups according to educational attainment.

As illustrated in Table 11, the three education subgroups also differ broadly in other demographic characteristics:

- More than 80 per cent of university graduates in our sample were immigrants, and over 50 per cent were recent immigrants. In contrast, the majority of college graduates and those with high school or less were Canadian-born.
- 55 to 65 per cent of university graduates were above the study median in the three assessed Essential Skills (numeracy, document use, and reading) at baseline. The majority of college graduates were also above the median in document use and reading, though 53 per cent had below median numeracy. The majority of those with high school or less were below median in all three areas.
- The three groups didn't differ much in terms of recent work experience. Roughly one-third of each group had worked more than two of the three years prior to entering the study, while about one-third of university graduates and those with high school or less- and about one-quarter of college graduates – had not worked at all during the three-year period.

**Table 11 Educational attainment subgroups**

	Educational attainment		
	University graduates (n=171)	College graduates (n=96)	High school or less (n=82)
<b>Immigrant status (%)</b>			
Recent immigrant (in Canada 5 years or less at baseline)	54.0	16.2	18.0
Established immigrant	36.5	30.8	19.8
Canadian born	9.5	53.0	62.2
<b>Numeracy score – baseline (%)</b>			
Above population median	65.2	46.7	25.7
Below population median	34.8	53.3	74.3
<b>Document use score – baseline (%)</b>			
Above population median	59.1	58.6	25.9
Below population median	40.9	41.4	74.1
<b>Reading score – baseline (%)</b>			
Above population median	55.0	54.3	37.3
Below population median	45.0	45.7	62.7
<b>Work experience, three years prior to baseline (%)</b>			
Worked more than two years	33.8	31.0	32.7
Worked up to 2 years	32.9	45.7	35.5
Did not work at all	33.3	23.3	31.8

**Source:** SRDC baseline surveys and Essential Skills assessments.

The first column of Table 12 recaps key impact measures for the overall population, taken from other tables throughout this report, while the next three columns show the corresponding impacts for each of the three subgroups.

The results show that several key impacts – such as career adaptability, skill use, training, and health – are distributed broadly among the subgroups, and that those with less education are just as likely as university graduates to benefit in these areas.<sup>9</sup>

On the employment side, however, FWSP impacts appear to be largely confined to university graduates. For example, the overall program impact on high-wage (more than 20 dollars per hour) jobs was driven entirely by university graduates. The impact among university graduates was

<sup>9</sup> Note that in some cases, subgroup impacts are large but imprecisely estimated (and thus not statistically significant) as a result of small sample sizes.

14 percentage points, meaning that university graduates in the program group were 14 percentage points more likely than university graduates in the control group to get high-wage jobs.

Impacts of similar magnitude are observed for job skill levels among university graduates, where those in the program group are 17 percentage points more likely to get high skilled level A jobs and 17 percentage points less likely to get unskilled level D jobs.

**These results tell a story of the FWSP moving university graduates, the majority of whom were recent immigrants, away from low paid unskilled work into high-wage jobs commensurate with their levels of education.**

In contrast, the impacts on high-wage jobs among college graduates and those with high school or less were close to zero. In fact, even though college graduates in the program group were 14 percentage points less likely than college graduates in the control group to be in unskilled level D jobs, they were also 25 percentage points *more* likely to have been jobless for the entire 12-month period from baseline to follow-up.

Similarly, the FWSP appears to have moved those with high school or less away from level C jobs into even less skilled level D jobs (program group 20 percentage points less likely than controls to have a level C job, and 15 percentage points more likely to have a level D job).

**Thus the story for those without university credentials, the majority of who were Canadian born, is more mixed – positive impacts on career adaptability, skill use, training, and health, but negative or no impacts on employment, at least within the time frame of the study.**

It is important to note that these results are based on small samples, and so should be interpreted as suggestive rather than definitive. In addition, the positive trends on the training side for both college graduates and those with high school or less suggest that a portion of the negative impacts on employment observed over the 12-month period were a product of opportunity costs associated with the FWSP and further post-FWSP training. If so, the negative employment trends observed in these groups may begin to reverse over time.

In general, the subgroup analysis suggests that the FWSP may be especially well-suited for skilled recent immigrants who enter the program with some human capital resources (e.g., university degrees, relatively high Essential Skills), but who have had difficulty leveraging their credentials and skills into work in their field, or difficulty identifying alternative career paths in a related field.

On the other hand, those who come in with not only limited work experience but also fewer educational credentials and lower levels of Essential Skills may need a more direct demand side intervention to supplement the career path finding and skill upgrading offered by the FWSP.

**Table 12 Main impacts – Overall population and education subgroups**

	Overall impact	Educational attainment			
		University graduates	College	High school or less	
<b>Career Adaptability (%)</b>					
Improved on all four scales	9.90*	4.56	8.22		16.70
<b>Skill Use (%)</b>					
Do math every day	10.10*	5.39	-2.14	†	26.20**
Read or use books every day	12.90**	15.30*	18.50		2.33
<b>Training Rate and Intensity (%)</b>					
Have taken education or training (excluding career planning and job search) since baseline	0.84	-5.86	5.48		13.10
Intensive training	6.20*	5.90	5.78		5.75
<b>Employment and Wage (%)</b>					
Jobless	4.00	-6.06	††	25.10**	† -0.78
Low wage current job – Quintile 1 (\$11/hour or less)	-2.02	-3.67		-3.51	1.10
Quintile 2 (More than \$11 to \$12.5/hour)	2.41	3.01		0.45	1.69
Quintile 3 (More than \$12.5 to \$15/hour)	-8.13***	-6.95*		-11.80*	-3.44
Quintile 4 (More than \$15 to \$20/hour)	-2.31	-2.70		2.21	-10.30
High-wage current job (more than \$20/hour)	5.80*	13.70***	†††	-1.95	-0.58
<b>Employment and Training (%)</b>					
Jobless and have trained	6.92*	5.63		4.86	4.48
High-wage current job, and have trained	4.44**	6.00*		6.82	0.00
<b>Occupation (%)</b>					
Management occupations	3.39**	5.32**		0.00	2.27
Occupation with Skill Level A (university required)	9.32***	17.20***	†††	-3.51	† 2.27
Occupation with Skill Level B	-1.80	0.31		-5.66	2.79
Occupation with Skill Level C	-2.00	4.27		-0.40	-19.53*
Occupation with Skill Level D (unskilled)	-9.47**	-16.80***		-13.80	†† 15.30
<b>Health (%)</b>					
Never or rarely limited by mental health problems	10.51**	9.89		9.82	11.40
Number of observations – Control	174	73		60	37
Number of observations – Program	183	98		36	45

**Source:** SRDC baseline and 12-month follow-up surveys. Statistically significant impacts are denoted with asterisks: \* = 10%, \*\* = 5%, \*\*\* = 1%. Significant differences between adjacent subgroups (university vs. college, and college vs. high school) are denoted with daggers: † = 10%, †† = 5%, ††† = 1%.

## Skills Enhancement vs. Portfolio only

The FWSP program model being evaluated here included two major components:

- i) **Portfolio development**, which took place over two weeks, with approximately 60 classroom hours designed to help participants to identify and document their Essential Skills, research skill requirements related to their target occupations, and build a realistic career action plan based on the match between *assessed* skill levels and *required* occupational skill levels; and
- ii) **Skills Enhancement**, which offered individually tailored skill upgrading using occupationally relevant learning materials for those whose skills are below the levels needed for their target occupations.

A previous report (Palameta, Dowie, Nguyen, & Gyarmati, 2017) detailing the implementation of the FWSP found that 12 week impacts on career adaptability were similar for those who did only the Portfolio portion of the program and those who also did Skills Enhancement, but that impacts on Essential Skills scores were, as expected, larger for the latter group.

At 12 months, there is little evidence for a clear pattern of differences in program impacts between these two subgroups. There are positive impacts of similar magnitude for both subgroups on most measures, including career adaptability, skill use, wages, and occupational skill level. The only difference is that Skills Enhancement was more likely to have an impact on further training (Appendix G).

These results suggest that even a two-week intervention based on career pathfinding and portfolio building can offer significant benefits to those who don't need skill upgrading. However, caution should be applied to these results, since the matching procedure we used to estimate these impacts did not result in fully balanced groups.<sup>10</sup>

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<sup>10</sup> These impacts pertain to subgroups that are defined on the basis of events that occurred after random assignment (i.e., type of FWSP training received). In order to minimize possible selection bias, propensity score matching was used to create weighted control groups to match as much as possible each of the program subgroups on a full range of baseline characteristics. The differences between the outcomes of a particular subgroup and its matched control group can be thus considered as *quasi-experimental impacts*. The technical details on the propensity score matching are described more fully in Appendix H.



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## Appendix A: Participant characteristics at baseline

**Table 13** Baseline characteristics of those who responded to the 12-month survey

Characteristics	Control group	Program group	Difference	Standard errors
<b>Gender (%)</b>				
Female	66.1	63.4	-2.7	(5.1)
Male	33.9	36.6	2.7	(5.1)
<b>Age (%)</b>				
15-19	0.6	2.8	2.2	(1.4)
20-24	3.5	6.7	3.2	(2.4)
25-29	11.1	8.4	-2.7	(3.2)
30-34	11.1	11.2	0.1	(3.4)
35-39	13.5	14.0	0.5	(3.7)
40-44	15.8	12.3	-3.5	(3.7)
45-49	19.3	18.4	-0.9	(4.2)
50-54	12.3	13.4	1.1	(3.6)
55-59	7.6	10.1	2.5	(3.0)
60-65	5.3	2.8	-2.5	(2.1)
<b>Minority (%)</b>				
Immigrant	61.3	69.9	8.7 *	(5.0)
Recent Immigrant (in Canada 5 years or less at baseline)	33.5	38.8	5.3	(5.1)
Aboriginal	2.3	2.2	-0.1	(1.6)
<b>Number of barriers to find employment or to keep a job (%)</b>				
1	30.1	27.9	-2.2	(5.0)
2	25.8	36.0	10.3 **	(5.0)
3	24.5	22.7	-1.9	(4.6)
4 or more	19.6	13.4	-6.3	(4.0)
<b>Household Structure</b>				
Marital Status (%)				
Married	59.2	59.0	-0.2	(5.2)
Common Law	4.0	1.6	-2.4	(1.7)
Single never married	24.7	29.0	4.2	(4.7)
Separated	4.6	7.1	2.5	(2.5)
Divorced	5.7	2.2	-3.6 *	(2.0)
Widowed	1.7	1.1	-0.6	(1.2)
Presence of Children (%)	45.4	50.8	5.4	(5.3)
Presence of Young Children (%)	16.6	17.7	1.1	(4.1)
Number of Children	0.8	0.9	0.2	(0.1)
Number of Adults (including the participant)	2.1	2.2	0.1	(0.1)
Presence of another employed adult (%)	17.4	18.2	0.8	(4.1)

Characteristics	Control group	Program group	Difference	Standard errors
<b>Highest Level of Education</b>				
Less than a high school diploma	6.3	3.8	-2.5	(2.3)
A high school diploma or equivalent	12.1	19.2	7.2 *	(3.8)
Trade/vocational or apprenticeship dipl./cert.	5.2	3.8	-1.3	(2.2)
Community college or CEGEP dipl./cert.	24.7	13.2	-11.5 ***	(4.1)
University degree – Bachelor level or equivalent	25.9	35.2	9.3 *	(4.9)
University degree – Masters level or higher	15.5	17.6	2.1	(3.9)
Other diploma, degree, or certificate	10.3	7.1	-3.2	(3.0)
<b>Household Income</b>				
Less than \$10,000	22.6	20.0	-2.6	(4.5)
\$10,000 to less than \$20,000	18.5	19.4	1.0	(4.3)
\$20,000 to less than \$30,000	16.7	9.4	-7.3 **	(3.6)
\$30,000 to less than \$40,000	6.5	11.2	4.6	(3.1)
\$40,000 to less than \$50,000	7.1	8.2	1.1	(2.9)
\$50,000 to less than \$60,000	8.3	5.9	-2.5	(2.8)
\$60,000 to less than \$70,000	6.0	8.2	2.3	(2.8)
\$70,000 to less than \$80,000	6.0	4.7	-1.2	(2.4)
\$80,000 to less than \$90,000	1.2	4.7	3.5 *	(1.8)
\$90,000 or more	7.1	8.2	1.1	(2.9)
<b>Employment Status (%)</b>				
Not Working, and looking for work	82.2	87.8	5.7	(3.8)
Not Working, but starting a job soon	2.9	2.2	-0.7	(1.7)
Currently working part-time (less than 20 hours / week)	14.9	9.9	-5.0	(3.5)
Ever Employed	87.2	84.4	-2.8	(3.8)
<b>Average Months Worked in the past 3 years</b>	15.8	15.7	-0.2	(1.5)
<b>Benefit Usage (%)</b>				
Receiving EI at Baseline	14.5	14.8	0.3	(3.7)
Receiving IA at Baseline	19.1	18.0	-1.0	(4.1)
<b>Essential Skills Assessments</b>				
Average Document Use Score	254.6	252.6	-2.0	(5.4)
Average Reading Score	257.2	255.0	-2.1	(4.8)
Average Numeracy Score	270.8	263.5	-7.3	(6.7)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Appendix B: Career adaptability impacts

**Table 14** Impacts on career adaptability at 12 months

	Control group		Program group		Impacts	Standard errors
	Baseline	Follow-up	Baseline	Follow-up		
<b>Career Planning (5-point scale)</b>	3.11	3.50	3.22	3.63	0.01	(0.11)
a. I have not really decided what my career objectives should be yet	2.78	2.59	2.85	2.56	-0.11	(0.15)
b. I have a strategy for achieving my career goals	3.10	3.51	3.23	3.67	0.03	(0.13)
c. I know what I need to do to reach my career goals	3.01	3.59	3.28	3.76	-0.11	(0.14)
<b>Career Decision Making Self Efficacy (5-point scale)</b>	3.15	3.42	3.30	3.64	0.08	(0.09)
a. Accurately assess how well your abilities are suited for the kind of work you want to do	3.16	3.60	3.23	3.60	-0.07	(0.12)
b. Find information about occupations you are interested in	3.30	3.59	3.41	3.84	0.13	(0.12)
c. Find out the employment trends for an occupation over the next ten years	2.77	3.10	2.90	3.49	0.26 *	(0.14)
d. Find out about the average yearly earnings of people in an occupation	3.03	3.31	3.16	3.63	0.18	(0.13)
e. Talk with a person already employed in the field you are interested in	3.04	3.34	3.28	3.63	0.04	(0.14)
f. Find information about education or training programs in the field you are interested in	3.44	3.70	3.57	3.87	0.05	(0.12)
g. Select one occupation from a list of potential occupations you are considering	3.26	3.63	3.47	3.77	-0.08	(0.12)
h. Select one education or training program from a list of potential programs you are considering	3.27	3.58	3.45	3.80	0.03	(0.13)
i. Choose a career that will fit your abilities and interests	3.32	3.58	3.60	3.72	-0.14	(0.13)
j. Identify employers, firms, institutions relevant to your career possibilities	3.13	3.32	3.29	3.63	0.15	(0.13)
k. Change jobs if you did not like your job	3.02	3.04	3.06	3.35	0.27 **	(0.13)
l. Determine the steps to take if you are having trouble with an aspect of your job	3.10	3.30	3.18	3.52	0.14	(0.12)
m. Identify some reasonable occupation or career alternatives if you are unable to get your first choice	3.06	3.28	3.21	3.51	0.08	(0.12)

	Control group		Program group		Impacts	Standard errors
	Baseline	Follow-up	Baseline	Follow-up		
<b>Job Search Clarity (5-point scale)</b>	3.21	3.55	3.26	3.75	0.15 *	(0.09)
a. I have a clear idea of the type of job I want	3.56	3.71	3.63	3.94	0.16	(0.11)
b. I have very clear job search objectives	3.09	3.55	3.14	3.73	0.13	(0.12)
c. I have a clear idea of the type of company I want to work for	3.13	3.58	3.20	3.74	0.09	(0.13)
d. It is not very clear to me where I should be looking for a job	2.94	2.64	2.93	2.43	-0.21	(0.14)
<b>Job Search Self-Efficacy (5-point scale)</b>	2.79	3.16	2.95	3.40	0.08	(0.08)
a. Use social networks to obtain job leads	2.91	3.22	3.00	3.35	0.04	(0.12)
b. Prepare resumes that will get you interviews	2.93	3.40	3.07	3.52	-0.02	(0.12)
c. Impress interviewers during employment interviews	2.75	3.26	2.87	3.54	0.16	(0.11)
d. Make "cold calls" that will get you a job interview	2.29	2.57	2.32	2.82	0.22 *	(0.13)
e. Conduct information interviews to find out about careers and jobs that you are interested in pursuing	2.57	2.98	2.77	3.31	0.13	(0.12)
f. Communicate your skills and experience in a way that will attract the interest of employers	2.76	3.16	2.84	3.52	0.27 **	(0.11)
g. Plan and organize a weekly job search schedule	2.93	3.20	3.07	3.48	0.13	(0.12)
h. Find out where job openings exist	2.88	3.21	3.20	3.52	-0.01	(0.11)
i. Use a variety of sources to find job opportunities	3.05	3.39	3.25	3.51	-0.07	(0.11)
j. Search for and find good job opportunities	2.80	3.25	3.07	3.47	-0.06	(0.12)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows:

\* = 10%, \*\* = 5%, \*\*\* = 1%.

## Appendix C: Skill use impacts

**Table 15** Impacts on frequency of skill use at 12 months

Characteristics	Control group		Program group		Impacts	Standard errors
	Baseline	Follow-up	Baseline	Follow-up		
<b>a. Do math (such as for household budgets, bills, etc.) (6-point scale)</b>	<b>4.30</b>	<b>4.43</b>	<b>4.25</b>	<b>4.71</b>	<b>0.33</b> **	<b>(0.15)</b>
Never (%)	0.60	1.20	3.43	2.28	-1.75	(1.73)
Rarely (%)	12.70	13.30	11.48	6.91	-5.17	(4.03)
Less than once a week (%)	12.70	7.88	14.91	8.62	-1.47	(4.62)
Once a week (%)	24.70	21.09	18.29	17.15	2.47	(6.03)
A few times a week (%)	29.50	32.51	30.84	29.70	-4.15	(6.68)
Every day (%)	19.90	24.12	21.16	35.48	10.10	*(5.35)
<b>b. Write notes, letters, or e-mails? (6-point scale)</b>	<b>5.01</b>	<b>5.00</b>	<b>5.14</b>	<b>5.28</b>	<b>0.15</b>	<b>(0.14)</b>
Never (%)	2.41	0.60	0.57	1.14	2.38	*(1.44)
Rarely (%)	3.01	6.02	6.86	1.72	-8.15	*** (3.09)
Less than once a week (%)	9.64	6.03	4.00	4.00	3.61	(3.55)
Once a week (%)	6.02	10.84	5.71	9.14	-1.39	(3.98)
A few times a week (%)	33.70	33.10	31.97	29.12	-2.25	(6.52)
Every day (%)	45.20	43.39	50.88	54.88	5.81	(5.96)
<b>c. Read or use information from books (6-point scale)</b>	<b>4.59</b>	<b>4.39</b>	<b>4.66</b>	<b>4.85</b>	<b>0.39</b> **	<b>(0.16)</b>
Never (%)	3.01	2.41	1.71	2.28	1.17	(2.20)
Rarely (%)	8.43	12.65	13.14	6.86	-10.50	*** (3.67)
Less than once a week (%)	15.70	14.50	8.61	8.61	1.20	(4.67)
Once a week (%)	7.23	13.86	9.72	14.87	-1.48	(4.51)
A few times a week (%)	30.70	27.09	27.41	20.56	-3.24	(6.16)
Every day (%)	34.90	29.48	39.39	46.87	12.90	** (5.77)

Characteristics	Control group		Program group		Impacts	Standard errors
	Baseline	Follow-up	Baseline	Follow-up		
<b>d. Use a library or visit a bookstore? (6-point scale)</b>	<b>3.13</b>	<b>3.08</b>	<b>3.50</b>	<b>3.39</b>	<b>-0.07</b>	<b>(0.15)</b>
Never (%)	6.02	7.83	3.42	2.28	-2.95	(2.84)
Rarely (%)	26.50	24.09	25.71	24.57	1.27	(5.60)
Less than once a week (%)	34.90	34.90	21.10	31.40	10.30	(6.48)
Once a week (%)	17.50	21.11	21.17	21.74	-3.04	(5.81)
A few times a week (%)	11.40	8.99	24.00	13.71	-7.88 *	(4.48)
Every day (%)	3.61	3.01	4.57	6.29	2.32	(2.86)

**Source:** SRDC baseline and 12-month follow-up surveys. There are 174 and 183 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows:

\* = 10%, \*\* = 5%, \*\*\* = 1%.

## Appendix D: Employment, training, and wage impacts

**Table 16** Impacts on training and wage distribution at 12 months, separating those who had worked since baseline but were not working at the time of the survey (previous job), and those with a job at the time of the survey (current job)

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
Trained	14.50	21.42	6.92 *	(4.14)
Did not train	16.40	13.60	-2.80	(3.87)
<b>Previous job (%)</b>				
\$11/hour or less	9.70	11.30	1.60	(3.32)
Trained	3.03	2.83	-0.21	(1.83)
Did not train	6.67	8.48	1.81	(2.86)
More than \$11 to \$12.5/hour	5.45	4.52	-0.94	(2.37)
Trained	3.64	2.83	-0.81	(1.92)
Did not train	1.82	1.70	-0.12	(1.43)
More than \$12.5 to \$15/hour	6.06	5.65	-0.41	(2.55)
Trained	3.64	1.70	-1.94	(1.76)
Did not train	2.42	3.95	1.53	(1.90)
More than \$15 to \$20/hour	4.85	5.65	0.80	(2.42)
Trained	1.82	2.26	0.44	(1.53)
Did not train	3.03	3.39	0.36	(1.91)
More than \$20/hour	3.64	2.83	-0.81	(1.92)
Trained	0.61	1.13	0.52	(1.00)
Did not train	3.03	1.69	-1.34	(1.65)
<b>Current job (%)</b>				
\$11/hour or less	4.85	2.83	-2.02	(2.09)
Trained	2.42	1.69	-0.73	(1.55)
Did not train	2.42	1.13	-1.29	(1.44)



	Control group	Program group	Impacts	Standard errors
More than \$11 to \$12.5/hour	6.06	8.47	2.41	(2.81)
Trained	3.03	2.26	-0.77	(1.75)
Did not train	3.03	5.65	2.62	(2.20)
More than \$12.5 to \$15/hour	11.50	3.37	-8.13	*** (2.84)
Trained	6.06	1.13	-4.93	** (2.03)
Did not train	5.45	2.26	-3.19	(2.10)
More than \$15 to \$20/hour	9.09	6.78	-2.31	(2.94)
Trained	3.64	1.70	-1.94	(1.76)
Did not train	5.45	4.52	-0.94	(2.37)
More than \$20/hour	6.06	11.86	5.80	* (3.07)
Trained	1.21	5.65	4.44	** (1.94)
Did not train	4.24	6.21	1.97	(2.41)

**Source:** SRDC 12-month follow-up surveys. The number of respondents reporting training status (161 and 172 in the control and program groups, respectively) is slightly less than those reporting wage (165 and 177, respectively). The small numbers of those who reported wage but are missing training status are not shown in the table. Statistical significance is denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Appendix E: National Occupational Classification (NOC) occupational education and training entry requirements

### Skill level A

- University degree (bachelor's, master's or doctorate)

### Skill level B

- Two to three years of post-secondary education at community college, institute of technology or CÉGEP  
*or*
- Two to five years of apprenticeship training  
*or*
- Three to four years of secondary school and more than two years of on-the-job training, occupation-specific training courses or specific work experience
- Occupations with supervisory responsibilities are also assigned to skill level B
- Occupations with significant health and safety responsibilities (e.g., fire fighters, police officers and licensed practical nurses) are assigned to skill level B

### Skill level C

- Completion of secondary school and some short-duration courses or training specific to the occupation  
*or*
- Some secondary school education, with up to two years of on-the-job training, training courses or specific work experience

### Skill level D

- Short work demonstration or on-the-job training  
*or*
- No formal educational requirements

Skill level is referenced in the code for all occupations with the exception of management occupations. For all non-management occupations the second digit of the numerical code corresponds to skill level. Skill levels are identified as follows: level A – 0 or 1; level B – 2 or 3; level C – 4 or 5; and level D – 6 or 7.

**Source:** Introduction to the National Occupational Classification (NOC) 2011.

<http://www5.hrsdc.gc.ca/NOC/English/NOC/2011/Introduction.aspx>

## Appendix F: Job satisfaction impacts

**Table 17** Impacts on individual job satisfaction measures at 12 months

	Control group	Program group	Impacts	Standard errors
<b>Jobless (%)</b>	32.70	36.70	4.00	(5.16)
<b>Previous or current job (%)</b>				
<b>Your pay (%)</b>				
Dissatisfied to Highly Dissatisfied (score <= 3)	32.10	23.71	-8.39 *	(4.86)
Neutral (3 < score < 5)	12.10	14.10	2.00	(3.66)
Satisfied to Highly Satisfied (5 <= score <= 7)	23.00	24.83	1.83	(4.63)
<b>The opportunities to use your skills and experience (%)</b>				
Dissatisfied to Highly Dissatisfied	26.70	15.90	-10.80 **	(4.41)
Neutral	13.30	12.96	-0.34	(3.67)
Satisfied to Highly Satisfied	27.30	33.93	6.63	(4.98)
<b>The opportunities to use your own initiative to make decisions (%)</b>				
Dissatisfied to Highly Dissatisfied	23.60	19.17	-4.43	(4.45)
Neutral	15.80	10.21	-5.59	(3.64)
Satisfied to Highly Satisfied	27.90	33.35	5.45	(4.99)
<b>Your job security (%)</b>				
Dissatisfied to Highly Dissatisfied	35.20	23.80	-11.40 **	(4.92)
Neutral	8.48	11.29	2.81	(3.23)
Satisfied to Highly Satisfied	23.60	27.65	4.05	(4.73)
<b>Support from your supervisor or manager (%)</b>				
Dissatisfied to Highly Dissatisfied	21.20	11.85	-9.35 **	(4.02)
Neutral	9.70	10.74	1.04	(3.28)
Satisfied to Highly Satisfied	36.40	40.15	3.75	(5.27)
<b>The opportunities for career growth and promotion (%)</b>				
Dissatisfied to Highly Dissatisfied	30.90	27.67	-3.23	(4.94)
Neutral	14.50	11.82	-2.68	(3.68)
Satisfied to Highly Satisfied	21.80	23.15	1.35	(4.53)

	Control group	Program group	Impacts		Standard errors
<b>The opportunities for learning new things and developing your abilities (%)</b>					
Dissatisfied to Highly Dissatisfied	24.20	15.21	-8.99	**	(4.31)
Neutral	10.30	12.99	2.69		(3.47)
Satisfied to Highly Satisfied	32.70	34.44	1.74		(5.12)
<b>All in all, how satisfied would you say you are with your job? (%)</b>					
Dissatisfied to Highly Dissatisfied	24.20	15.21	-8.99	**	(4.31)
Neutral	10.90	13.55	2.65		(3.55)
Satisfied to Highly Satisfied	32.10	33.88	1.78		(5.10)

**Source:** SRDC 12-month follow-up surveys. There are 165 and 177 observations in the control and program groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

## Appendix G: Subgroup impacts among Skills Enhancement and Portfolio only participants

**Table 18 Main impacts – Overall population and program subgroups**

	Overall impact	Program subgroups	
		Portfolio only	Skills Enhancement
<b>Career Adaptability (%)</b>			
Improved on all four scale	9.90*	9.72	12.00*
<b>Skill Use (%)</b>			
Do math every day	10.10*	12.30*	7.41
Read or use books every day	12.90**	11.30	14.10*
<b>Training Rate and Intensity since baseline (%)</b>			
Have taken education or training (excluding career planning and job search)	0.84	-15.70**	10.40
Intensive training	6.20*	0.58	9.74*
<b>Employment and Wage (%)</b>			
Jobless	4.00	2.07	7.01
Low wage current job – Quintile 1 (\$11/hour or less)	-2.02	-2.27	-2.37
Quintile 2 (More than \$11 to \$12.5/hour)	2.41	4.63	1.66
Quintile 3 (More than \$12.5 to \$15/hour)	-8.13***	-4.78	-11.30***
Quintile 4 (More than \$15 to \$20/hour)	-2.31	-7.03	0.00
High-wage current job (more than \$20/hour)	5.80*	5.06	4.94
<b>Employment and Training (%)</b>			
Jobless and have trained	6.92*	-1.57	†† 13.60**
High-wage current job, and have trained	4.44**	2.50	4.87**
<b>Occupation (%)</b>			
Management occupations	3.39**	6.25**	† 1.05
Occupation with Skill Level A (university required)	9.32***	10.10**	8.70**
Occupation with Skill Level B	-1.80	5.04	-7.19
Occupation with Skill Level C	-2.00	-10.90*	2.79
Occupation with Skill Level D	-9.47**	-7.39	-10.00**
<b>Health (%)</b>			
Never or rarely limited by mental health problems	10.51**	14.50*	7.39
Number of observations – Control	174	174	174
Number of observations – Program	183	53	99

**Source:** SRDC baseline and 12-month follow-up surveys. Statistically significant impacts are denoted with asterisks: \* = 10%, \*\* = 5%, \*\*\* = 1%. Significant differences between Portfolio and Skill Enhancement groups are denoted with daggers: † = 10%, †† = 5%, ††† = 1%.

## Appendix H: Propensity score matching

The high response rates for the 12-month survey allowed us to examine the impact of Portfolio and Skills Enhancement components of the program separately. Control group members were different, in terms of observable characteristics, when compared to either program group members who went through some or all parts of the Portfolio component without starting Skills Enhancement, or those who went on to Skills Enhancement. As shown in Table 19, the Portfolio group was more likely to be young, immigrant males with fewer barriers to employment, and higher career related self-efficacy (average of career decision-making self-efficacy and job search self-efficacy) at baseline, compared to control group members. Table 20 shows that there were fewer significant differences between Skills Enhancement participants and control group members, though there were non-significant trends towards differences in several characteristics, including household income and presence of children.

The rationale for using propensity score matching here was similar to that used for the 12-week analysis done by Palameta, Dowie, Nguyen, and Gyarmati (2017). Because the control group differs from each of the two program subgroups (i.e., Portfolio only and Skills Enhancement), subgroup impact estimates could be biased. Thus, the goal was to create from the control group two sets of individuals: one matching program group members who only started and/or completed Portfolio, and the other matching program group members who went on to Skills Enhancement. The matching procedure was designed to reduce observed individual differences that may give rise to biased impact estimates.

To create these matched comparison groups, inverse probability weighting method was used to reweight the control group members in such a way that their distributions of baseline characteristics matched as much as possible the distributions of the two program subgroups. We used a multinomial logit model to simultaneously estimate how likely program participants were on the one hand to do Portfolio only, and on the other hand to start Skills Enhancement. This means that each control group member was given three propensity scores: a propensity to participate in Portfolio development only, a propensity score associated with Skills Enhancement participation, and as well a propensity score associated with the likelihood of refusing to take any part of the training. All three propensity scores sum to one, and illustrate how likely control group members would have been to engage with each part of the program had they been offered the training.

**Table 19 Actual baseline characteristics at 12 months – Control and Portfolio groups**

	Control group	Portfolio only	Difference		Standard errors
<b>College site (%)</b>					
Douglas	44.8	56.6	11.8		(7.8)
Conestoga and CAN	55.2	43.4	-11.8		(7.8)
<b>Age (%)</b>					
30 or younger	16.7	35.9	19.2	***	(6.3)
31-40	24.1	16.9	-7.2		(6.6)
41-50	37.9	24.5	-13.4	*	(7.5)
51+	21.3	22.7	1.4		(6.5)
<b>Gender (%)</b>					
Female	66.1	52.8	-13.3	*	(7.6)
Male	33.9	47.2	13.3	*	(7.6)
<b>Marital status (%)</b>					
Married/Common law	63.2	62.2	-1.0		(7.6)
Sing, divorce, separated, or widowed	36.8	37.8	1.0		(7.6)
<b>Have children (%)</b>					
No	54.6	62.3	7.7		(7.8)
Yes	45.4	37.7	-7.7		(7.8)
<b>Immigration status (%)</b>					
Recent immigrants	33.3	43.4	10.1		(7.5)
Established immigrants	28.2	35.9	7.7		(7.2)
Non-immigrants	38.5	20.7	-17.8	**	(7.4)
<b>Education (%)</b>					
High school or less	18.4	28.3	9.9		(6.4)
Postsecondary education or other degrees	81.6	71.7	-9.9		(6.4)
<b>Household income (%)</b>					
Under \$20,000	39.7	32.1	-7.6		(7.6)
\$20,001 - \$40,000	25.9	34.0	8.1		(7.0)
\$40,001+	34.5	34.0	-0.5		(7.5)
<b>Employment status (past 3 years) (%)</b>					
Did not work	27.6	37.7	10.1		(7.2)
Worked for up to 18 months	28.7	18.8	-9.9		(6.9)
Worked for more than 18 months	43.7	43.4	-0.3		(7.8)

	Control group	Portfolio only	Difference		Standard errors
<b>Barriers to employment (%)</b>					
0-1	34.5	45.3	10.8		(7.6)
2	24.1	35.8	11.7	*	(6.9)
3+	41.4	18.9	-22.5	***	(7.4)
<b>Had job interviews in past 12 months (%)</b>					
No	39.1	51.0	11.9		(7.7)
Yes	60.9	49.0	-11.9		(7.7)
<b>Have physical or mental limitations (%)</b>					
No	63.8	67.9	4.1		(7.5)
Yes	36.2	32.1	-4.1		(7.5)
<b>Average scores</b>					
Career related self-efficacy	3.0	3.2	0.2	**	(0.1)
Essential skills	260.9	254.1	-6.8		(7.1)
Attitude towards learning	4.0	4.0	0.0		(0.1)
Frequency of practices of literacy skills	4.3	4.2	-0.1		(0.2)
Future orientation	3.5	3.5	0.0		(0.1)
Social network availability	3.3	3.3	0.0		(0.1)
<b>Propensity to complete Portfolio only (%)</b>	28.4	38.1	9.7	***	(2.3)

**Source:** SRDC baseline surveys. There are 174 and 53 observations in the control and Portfolio groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.



**Table 20 Actual baseline characteristics at 12 months – Control and Skills Enhancement groups**

	Control group	Skills Enhancement	Difference	Standard errors
<b>College site (%)</b>				
Douglas	44.8	38.4	-6.4	(6.2)
Conestoga and CAN	55.2	61.6	6.4	(6.2)
<b>Age (%)</b>				
30 or younger	16.7	11.1	-5.6	(4.5)
31-40	24.1	28.2	4.1	(5.5)
41-50	37.9	36.3	-1.6	(6.1)
51+	21.3	24.3	3.0	(5.3)
<b>Gender (%)</b>				
Female	66.1	67.7	1.6	(6.0)
Male	33.9	32.3	-1.6	(6.0)
<b>Marital status (%)</b>				
Married/Common law	63.2	58.6	-4.6	(6.1)
Sing, divorce, separated, or widowed	36.8	41.4	4.6	(6.1)
<b>Have children (%)</b>				
No	54.6	44.4	-10.2	(6.3)
Yes	45.4	55.6	10.2	(6.3)
<b>Immigration status (%)</b>				
Recent immigrants	33.3	34.3	1.0	(6.0)
Established immigrants	28.2	28.3	0.1	(5.7)
Non-immigrants	38.5	37.4	-1.1	(6.1)
<b>Education (%)</b>				
High school or less	18.4	20.2	1.8	(5.0)
Postsecondary education or other degrees	81.6	79.8	-1.8	(5.0)
<b>Household income (%)</b>				
Under \$20,000	39.7	35.4	-4.3	(6.1)
\$20,001 - \$40,000	25.9	21.3	-4.7	(5.4)
\$40,001+	34.5	43.5	9.0	(6.1)
<b>Employment status (past 3 years) (%)</b>				
Did not work	27.6	24.3	-3.3	(5.6)
Worked for up to 18 months	28.7	30.3	1.6	(5.8)
Worked for more than 18 months	43.7	45.5	1.8	(6.3)

	Control group	Skills Enhancement	Difference	Standard errors
<b>Barriers to employment (%)</b>				
0-1	34.5	28.3	-6.2	(5.9)
2	24.1	30.3	6.2	(5.6)
3+	41.4	41.4	0.0	(6.2)
<b>Received job offers in past 12 months (%)</b>				
No	63.8	66.7	2.9	(6.0)
Yes	36.2	33.3	-2.9	(6.0)
<b>Had job interviews in past 12 months (%)</b>				
No	39.1	43.5	4.4	(6.2)
Yes	60.9	56.6	-4.4	(6.2)
<b>Have physical or mental limitations (%)</b>				
No	63.8	60.6	-3.2	(6.1)
Yes	36.2	39.4	3.2	(6.1)
<b>Average scale scores</b>				
Career self-efficacy	3.0	3.0	0.1	(0.1)
Essential skills	260.9	263.9	3.0	(5.4)
Attitude towards learning	4.0	4.1	0.1	(0.1)
Frequency of practices of literacy skills	4.3	4.5	0.3	** (0.1)
Future orientation	3.5	3.5	0.1	(0.1)
Social network availability	3.3	3.3	0.0	(0.1)
<b>Propensity to start Skills Enhancement (%)</b>	55.6	58.8	3.2	* (1.6)

**Source:** SRDC baseline surveys. There are 174 and 99 observations in the control and Skills Enhancement groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

Two weights were created for each member of the control group based on their propensity scores for Portfolio and Skills Enhancement participation.<sup>11</sup> To create a comparison group for program group members who did Portfolio only, weights were assigned to control group members based on their likelihoods of participating in Portfolio development without starting Skills Enhancement. Similarly, to create a comparison group for Skills Enhancement participants, another set of weights were assigned to control group members based on their likelihoods of entering Skills Enhancement.

Essentially, the same control group members were used to estimate impacts of Portfolio only and Skills Enhancement, but their outcomes were weighted differently based on the matching described above. For each outcome, comparing the weighted/matched control group average to the actual Portfolio (or Skills Enhancement) group average allows us to estimate the impact of Portfolio (or Skills Enhancement) on that outcome, as any biases arising from observable individual differences would have been reduced as much as possible.

Figures 9 and 10 show that though before matching the distribution of propensity scores for the control group differed from that of the Portfolio and Skills Enhancement groups, respectively, after matching the weighted propensity score distributions of the control group closely resembled those of the two program subgroups.<sup>12</sup>

Tables 21 and 22 present the baseline characteristics of the Portfolio only and Skills Enhancement subgroups respectively after matching. Though several differences that were present before matching (shown in Tables 19 and 20) were reduced by the matching procedure, others were not.

In particular, for the Portfolio only group, comparing Tables 19 and 21 shows that while the matching procedure reduced differences in gender composition, immigrant status, and career adaptability, it failed to negate the significant age difference and amplified the difference in recent work history. Thus, though propensity score matching improved the balance between the control group and Portfolio only group, the two groups were not completely balanced even after matching.<sup>13</sup> As a result, there may be potential bias arising from observable differences between program subgroups and matched control groups, and the subgroup impacts reported in Table 18 (Appendix G) should be treated with caution.

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<sup>11</sup> The weights are created based on the following formulas:

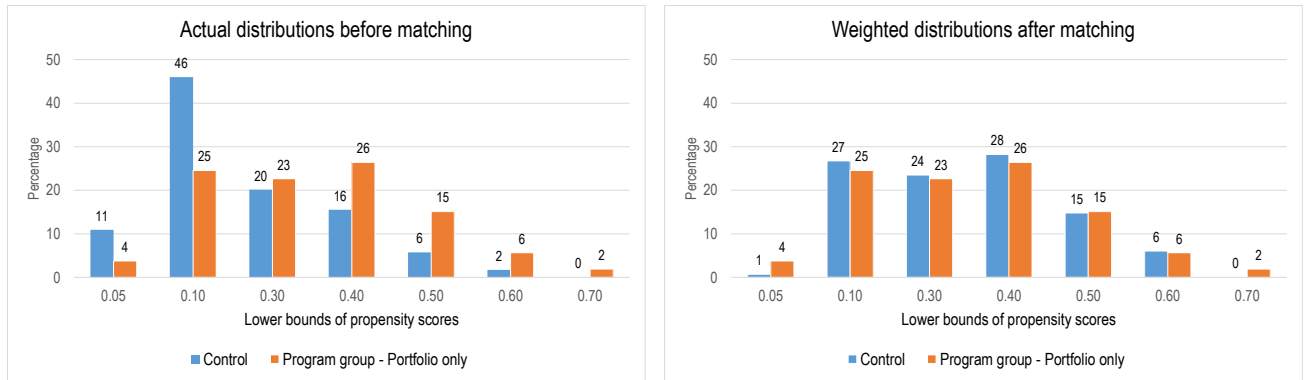
$$\text{Weight for comparison with Portfolio only group} = \frac{\text{Propensity score associated with Portfolio only}}{1 - \text{Propensity score associated with Portfolio only}}$$

$$\text{Weight for comparison with Skills Enhancement group} = \frac{\text{Propensity score associated with SE participation}}{1 - \text{Propensity score associated with SE participation}}$$

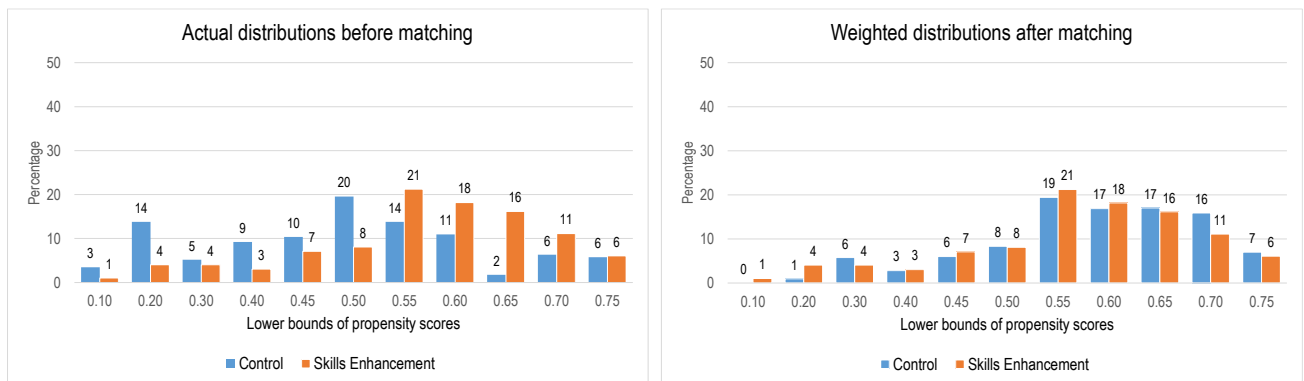
<sup>12</sup> Figures 9 and 10 also illustrate that common support – one of the two statistical properties required for matching – is satisfied.

<sup>13</sup> This shows that the balancing property – the other statistical property required for matching – is only partially satisfied.

**Figure 9 Propensity to complete part or all of Portfolio only**



**Figure 10 Propensity to start Skills Enhancement**



**Table 21 Weighted baseline characteristics after matching – Control and Portfolio**

Characteristics	Control group	Portfolio only	Differences	Standard errors
<b>College site (%)</b>				
Douglas	44.9	56.6	11.7	(8.3)
Conestoga and CAN	55.1	43.4	-11.7	(8.3)
<b>Age (%)</b>				
30 or younger	17.7	35.9	18.2	** (7.6)
31-40	25.5	17.0	-8.5	(6.6)
41-50	33.6	24.5	-9.1	(7.4)
51+	23.3	22.7	-0.6	(7.1)
<b>Gender (%)</b>				
Female	53.6	52.8	-0.8	(8.4)
Male	46.4	47.2	0.8	(8.4)
<b>Marital status (%)</b>				
Married/Common law	73.9	62.3	-11.6	(7.7)
Sing, divorce, separated, or widowed	26.1	37.7	11.6	(7.7)
<b>Have children (%)</b>				
No	68.3	62.3	-6.0	(7.9)
Yes	31.7	37.7	6.0	(7.9)
<b>Immigration status (%)</b>				
Recent immigrants	40.2	43.4	3.2	(8.3)
Established immigrants	35.7	35.9	0.2	(8.1)
Non-immigrants	24.2	20.8	-3.4	(6.7)
<b>Education (%)</b>				
High school or less	19.3	28.3	9.0	(7.3)
Postsecondary education or other degrees	80.7	71.7	-9.0	(7.3)
<b>Household income (%)</b>				
Under \$20,000	28.9	32.1	3.2	(7.7)
\$20,001 - \$40,000	36.5	33.9	-2.6	(8.1)
\$40,001+	34.6	34.0	-0.6	(7.9)
<b>Employment status (past 3 years) (%)</b>				
Did not work	21.9	37.7	15.8	** (7.7)
Worked for up to 18 months	28.5	18.8	-9.7	(6.9)
Worked for more than 18 months	49.5	43.4	-6.1	(8.3)

Characteristics	Control group	Portfolio only	Differences	Standard errors
<b>Barriers to employment (%)</b>				
0-1	33.0	45.3	12.3	(8.1)
2	28.6	35.9	7.3	(8.0)
3+	38.4	18.9	-19.5	*** (7.1)
<b>Had job interviews in past 12 months (%)</b>				
No	39.7	51.0	11.3	(8.3)
Yes	60.3	49.0	-11.3	(8.3)
<b>Have physical or mental limitations (%)</b>				
No	66.6	67.9	1.3	(7.9)
Yes	33.4	32.1	-1.3	(7.9)
<b>Average scale scores</b>				
Career self-efficacy	3.1	3.2	0.1	(0.1)
Essential skills	259.8	254.1	-5.7	(8.8)
Attitude towards learning	4.0	4.0	0.0	(0.1)
Frequency of practices of literacy skills	4.1	4.2	0.1	(0.2)
Future orientation	3.5	3.5	0.0	(0.1)
Social network availability	3.4	3.3	-0.1	(0.1)
<b>Propensity to only have Portfolio Development (%)</b>	39.1	38.1	-1.0	(2.5)

**Source:** SRDC baseline surveys. There are 174 and 53 observations in the control and Portfolio groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.

**Table 22 Weighted baseline characteristics after matching – Control and Skills Enhancement**

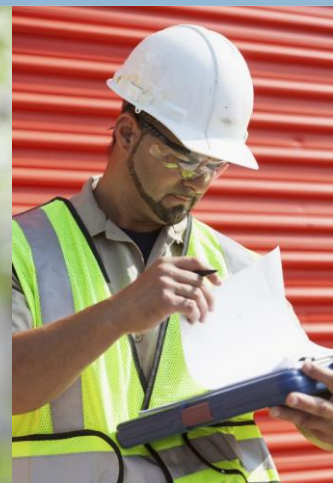
	Control group	Skills Enhancement	Differences	Standard errors
<b>College site (%)</b>				
Douglas	41.7	38.4	-3.4	(6.5)
Conestoga and CAN	58.3	61.7	3.4	(6.5)
<b>Age (%)</b>				
30 or younger	17.3	11.1	-6.2	(4.5)
31-40	23.4	28.3	4.9	(5.8)
41-50	41.2	36.4	-4.8	(6.5)
51+	18.1	24.2	6.1	(5.4)
<b>Gender (%)</b>				
Female	73.2	67.7	-5.5	(5.9)
Male	26.8	32.3	5.5	(5.9)
<b>Marital status (%)</b>				
Married/Common law	57.0	58.6	1.6	(6.6)
Sing, divorce, separated, or widowed	43.0	41.4	-1.6	(6.6)
<b>Have children (%)</b>				
No	46.7	44.4	-2.3	(6.6)
Yes	53.3	55.6	2.3	(6.6)
<b>Immigration status (%)</b>				
Recent immigrants	28.7	34.4	5.7	(6.0)
Established immigrants	22.9	28.3	5.4	(5.7)
Non-immigrants	48.5	37.4	-11.1	*(6.6)
<b>Education (%)</b>				
High school or less	19.3	20.2	0.9	(5.3)
Postsecondary education or other degrees	80.7	79.8	-0.9	(5.3)
<b>Household income (%)</b>				
Under \$20,000	46.4	35.4	-11.0	*(6.5)
\$20,001 - \$40,000	18.8	21.2	2.4	(5.1)
\$40,001+	34.8	43.5	8.7	(6.5)
<b>Employment status (past 3 years) (%)</b>				
Did not work	31.2	24.2	-7.0	(6.0)
Worked for up to 18 months	26.3	30.3	4.0	(6.0)
Worked for more than 18 months	42.5	45.5	3.0	(6.6)

	Control group	Skills Enhancement	Differences	Standard errors
<b>Barriers to employment (%)</b>				
0-1	33.7	28.3	-5.4	(6.1)
2	21.4	30.3	8.9	(5.8)
3+	44.9	41.4	-3.5	(6.6)
<b>Received job offers in past 12 months (%)</b>				
No	65.5	66.6	1.1	(6.3)
Yes	34.5	33.4	-1.1	(6.3)
<b>Had job interviews in past 12 months (%)</b>				
No	38.2	43.4	5.2	(6.5)
Yes	61.8	56.6	-5.2	(6.5)
<b>Have physical or mental limitations (%)</b>				
No	59.4	60.6	1.2	(6.6)
Yes	40.6	39.4	-1.2	(6.6)
<b>Average scale scores</b>				
Career self-efficacy	2.9	3.1	0.1	(0.1)
Essential skills	259.8	263.9	4.1	(5.7)
Attitude towards learning	4.0	4.1	0.1	(0.1)
Frequency of practices of literacy skills	4.4	4.5	0.2	(0.1)
Future orientation	3.5	3.5	0.1	(0.1)
Social network availability	3.2	3.3	0.0	(0.1)
<b>Propensity to start Skills Enhancement (%)</b>	61.2	58.8	-2.4	(1.6)

**Source:** SRDC baseline surveys. There are 174 and 99 observations in the control and Skills Enhancement groups, respectively. Statistically significant differences are denoted as follows: \* = 10%, \*\* = 5%, \*\*\* = 1%.







Ottawa



Toronto



Vancouver

#### Ottawa

55 Murray Street, Suite 400  
Ottawa, Ontario  
K1N 5M3

#### Toronto

481 University Avenue, Suite 705  
Toronto, Ontario  
M5G 2E9

#### Vancouver

789 West Pender Street, Suite 440  
Vancouver, British Columbia  
V6C 1H2

55, rue Murray, bureau 400  
Ottawa (Ontario)  
K1N 5M3

481, avenue University, bureau 705  
Toronto (Ontario)  
M5G 2E9

789, rue Pender Ouest, bureau 440  
Vancouver (Colombie-Britannique)  
V6C 1H2

[www.srdc.org](http://www.srdc.org)

1 866 896 7732

[info@srdc.org](mailto:info@srdc.org)