



# Innovating for Employment Success Project and its impact on Internationally Trained Professionals

**- FINAL FUNDER REPORT –**

*December 2016*

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*This project is made possible through funding from the Government of Canada and the Province of British Columbia*

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## Acknowledgements

Innovating for Employment Success was made possible by the significant contributions of many partners and individuals who enthusiastically gave of their time, expertise and wisdom to explore a new approach to tackling the ongoing challenge of internationally-trained professionals not finding work in Canada commensurate with their skills, knowledge and experience.

First of all, I would like to acknowledge the contributions of the project's Design Thinking trainers, Envisioning Labs. Oscar Malpica, the Managing Director of Envisioning Labs, first brought the idea to MOSAIC, and was key to the project's successful implementation.

I would also like to salute the internationally-trained professionals who were part of the project. Their willingness to try something new and their determination to succeed in Canada were an inspiration to all of us.

Also key to the success of the project were the Case Managers at the thirteen participating Employment Services Centres in Metro Vancouver who referred individuals to the program and the six employer partners who identified challenges for participants to tackle – Seaspan Ltd., Zaber Technologies, the City of Vancouver's Engineering Department and Equal Opportunity Employment Program, Sinclair Dental and Camp Pacific.

Marina Gherman as the Project Coordinator made this project happen and created a supportive learning environment for the participants.

Natasha Bailey did the qualitative research and wrote this report. Her fine analytical skills and rigorous methodology were invaluable to the project. Quantitative research analysis was carried out by Allyson Rayner. The Research Advisory Committee made the project stronger, generating many useful ideas and suggestions. Many thanks to Committee members, Sandra Colunga, John Dube, Susanna Gurr and Yolande Pottie-Sherman.

I would also like to thank and acknowledge the support of our funder, the BC Ministry of Social Development and Social Innovation. We are grateful not only for its financial support but also for its guidance during the project.

I hope this project inspires others to build on what we learned and to continue to work towards creating in British Columbia more opportunities for internationally-trained professionals to fully utilize their considerable talents.

Joan Andersen  
Director of Employment and Language Services  
MOSAIC



## 1 Executive Summary

In 2014, MOSAIC proposed a Research and Innovation demonstration project to the BC Ministry of Social Development and Social Innovation that aimed to tackle the pervasive labour market transition penalty for internationally trained professionals (ITPs). This penalty causes a low return to ITPs for foreign work experience and qualifications resulting in employment that does not match pre-arrival skills and experience and some would contend, the brain abuse of professional newcomers.

True to its stated organizational value of service innovation, MOSAIC wanted to explore the potential for Design Thinking (DT) to help ITPs achieve employment that was commensurate to the jobs they had before they came to Canada. MOSAIC hypothesized that Design Thinking's proven success in solving "wicked problems" similar to the ITP transition penalty could be just the remedy to fast track participants' employment readiness, the development of needed workplace skills, and commensurate labour market attachment. This hypothesis formed the main aim for the *Innovating for Employment Success (IES)* project:

*Fuller and Martin (2012: 147) assert that "the average return to non-Canadian experience has now declined to essentially zero."*

*To explore the impact of learning and implementing Design Thinking methodology to a real life business problem on: internationally trained professionals' career transitions, and their ability to secure full employment in an occupation that draws upon the skills and qualifications they obtained in their respective countries of origin.*

Increasingly part of business school curriculums and gaining traction in a range of sectors such as IT, sustainability and more, Design Thinking is "a human-centred innovation process that emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping and concurrent business analysis, which ultimately influences innovation and business strategy" (Lockwood, 2009). Multi-disciplinary teams usually collaborate to enhance implementation of such methods as user interviews, point of view analogy, ranking, user-driven prototypes and user observation.

Companies such as Apple and Sony employ Design Thinking. Thus, even gaining an understanding of the methodology alone could theoretically enhance an ITP's attraction to a potential employer, but the chance to learn and use the methodology within professionally and culturally diverse teams held the potential to foster a range of other impacts for ITPs, such as: partly overcoming the barrier of Canadian work experience; developing communication, initiative, innovation and leadership skills, and addressing a range of employment readiness facets.

*"It's a very interesting add on... certainly now in the current WorkBC model [there are] not a lot of specialized services for ITPs...[IES] is Canadian work experience in a professional environment. Getting that first professional job is one of the biggest hurdles. [ITPs] can get survival jobs but it doesn't help further your career [such as] an engineer working on an engineering project" (Key Informant No. 2).*

MOSAIC also wondered about the potential of a project such as IES to enhance the services that the Employment Program of British Columbia (EPBC) provides to ITPs.

## 1.1 Design and Development of IES

Initially, MOSAIC worked with a researcher and the Design Thinking training partner, Envisioning Labs, to design a research and evaluation process, and basic curriculum for a Design Thinking training program (hereafter called the *Innovation Program*) targeted to the needs of ITPs. The research design selected was an experiment with random allocation to a test and control group whereby the test group would receive the Innovation Program while the control would not. However, both groups would be eligible for, and attend, regular case managed services at their local WorkBC Employment Services Centres (ESC).

The research design included pre- and post-test administration of two instruments to measure development of workplace skills and employment readiness: 1) the Management Development Questionnaire (MDQn – Alan Cameron, 2004), and 2) the Employment Readiness Scale (ERS – Valerie G. Ward Consulting, 2016). A baseline survey was also administered to explore demographic variables and a construct called Job Search Self-efficacy was added to further track changes in job search skills. At six months after the intervention, a follow-up survey was administered to check employment outcomes, additional employment service usage and to re-measure job search self-efficacy. A final follow-up at 12 months checked once more for employment outcomes, job search self-efficacy and perceived employment barriers. MOSAIC decided that the sample size for the project would be 80 ITPs recruited through partner ESCs.

In addition, the research and evaluation was also to include gathering of qualitative data such as trainer feedback, participant training feedback, and in-depth interviews with 10 participants at six-month follow-up about their experience of IES. Five key informants were also to be interviewed to offer insight about the service and policy impact of IES.

*“[The] discussions were very useful...in Canada having discussion, having feedback, I have not this experience from my background. [I learned] we have not to be afraid from having discussions, have to talk about everything at first” (Participant 4).*

The Innovation Program itself was designed as a four-week, full-day, real life simulation of the Canadian workplace where participants would learn experientially about Design Thinking, while at the same time learning and practicing Canadian workplace skills. They were to function as consultants and were treated as such by the trainers and employer partners. They were to be assigned to Innovation Teams and matched to a problem from an employer partner that they would work together, using Design Thinking, to solve. Throughout the innovation process, participants would connect with employers to inform and present on their solution design. The table below gives a brief summary of the Innovation Program.

**Table 1.1 The Innovation Program**

Module	Length	Content
The Canadian Workplace	1 week	<ul style="list-style-type: none"> <li>• Workplace communication</li> <li>• Presentation skills</li> <li>• Teamwork skills</li> </ul>
Design Thinking	2 weeks	<ul style="list-style-type: none"> <li>• Design Thinking approach</li> <li>• Design Thinking methods</li> <li>• Meetings with employers (x 2)</li> <li>• Solution design and presentation to employers about solutions</li> </ul>
Next Steps	1 week	<ul style="list-style-type: none"> <li>• Applying design thinking skills to job search</li> <li>• Leveraging/highlighting the skills developed for job search</li> <li>• Strengthening job search tools and strategies</li> </ul>

MOSAIC consulted with employers, ITP clients and other ESCs to glean interest. It developed a detailed proposal for the Ministry of Social Development and Social Innovation, incorporating an activities breakdown and monitoring framework for the project. MOSAIC developed inclusion criteria for participants as well as all the data collection tools for the project.

## 1.2 Implementation of IES

The demonstration project was implemented from February 2015 to December 2016, including the research elements. MOSAIC developed marketing collateral for the project and ensured the development of a detailed curriculum for the Innovation Program. MOSAIC hired a Program Co-ordinator who began the process of reaching out to ESCs to inform them about the project and, once interested, to train them to inform potential clients about the project and administer the inclusion criteria checklist. She also, with Envisioning Labs, began to reach out to potential employer partners. Ultimately, 13 ESCs assisted with recruitment for the project.<sup>1</sup> These six employer partners, providing eight problems, participated:

*“I think that [Design Thinking and IES] could be successful for businesses as a way to solve certain problems, i.e. expand into a market that certain participants come from. One of our students was from Vietnam and understood this market better than anyone I have ever met” (Employer Participant No. 2).*

- Seaspan Ltd.

<sup>1</sup> These ESCs were: Burnaby, Coquitlam, Delta, New Westminster, North Vancouver, Port Coquitlam, Richmond and Whalley and in Vancouver: City Centre, Downtown Eastside, Vancouver Northwest, Vancouver South and Westside.

- Zaber Technologies
- City of Vancouver, Department of Engineering
- City of Vancouver, Equal Opportunity Employment Program
- Sinclair Dental
- Camp Pacific

Rolling recruitment of participants took place from April 2015 to the start of the first Innovation Program in August. In all, there were two training cohorts of 20 participants each (one in August and one in September). Participants were divided into one of eight Innovation Teams (N= 5 participants) and matched to problems. The long recruitment period was necessary to achieve the sample size. A challenge was that, as the training period approached, some participants indicated that they could not proceed because they had found employment resulting in the Co-ordinator having to replace those individuals. Just prior to the first Innovation Program, participants were randomly allocated to the test and control groups. The strategy included occupational matching so that the test and control groups would have a similar occupational profile. The hope was that this strategy would control for other variables that could have an effect on program impact.

Due to the experimental design and the inclusion criteria (which did not target specific occupations), it was not always possible to match participants to problems that were directly related to their professional skills. For instance, in one team there were quite a few engineers and this team was matched to a marketing problem. Nevertheless, the hope was that participants could employ their cultural intelligence, communication, initiative and analytical skills to the solution design.

The types of problems innovation teams worked to solve included: development of a new internet file structure; fostering diversity dialogue and learning transfer in an organization; enhancing promotional material, improving the front desk customer service experience, and promotion of internal training for employees.

The figure outlines the flow of the Design Thinking process used to generate an employer solution.

**Figure 1.1 Solution Design Process**

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. <b>Introduction to Design Thinking definition and theory</b> – What is human-centred design?</li> <li>2. <b>Discover Phase:</b> <ol style="list-style-type: none"> <li>a. Learning how to use essential Design Thinking tools, such as job to be done (metrics for client outcomes), outcome expectations, value quotient (desired/undesired outcomes)</li> <li>b. Carrying out interviews with employers/background research using the techniques</li> </ol> </li> <li>3. <b>Interpretation Phase:</b> learning how to interpret information through telling stories, searching for meaning and framing opportunities</li> </ol> |
|---|

4. **Ideation Phase:**
  - a. Using methods such as Hit Matrix, Brainwriting or Idea Harvesting to come up with a range of solutions
  - b. Emails/phone calls to employers to validate ideas
5. **Experimentation Phase:**
  - a. Using such techniques as Fail Fast Prototyping and Minimum Viable Product to come up with prototypes to solve problems
6. **Presentation Phase:**
  - a. Preparing a compelling presentation for the employer about the solution, using storytelling techniques
  - b. Presenting to employers

Parallel to the recruitment and delivery described above, the researcher completed a number of activities. In July, baseline surveys and pre-test were administered. During the training, feedback forms were collected from trainers and participants about process and learning outcomes indicators. In October, the post-test was administered and the researcher interviewed employers about their involvement in the program. In March and April of 2016, the researcher carried out six-month follow-up, as well as participant and key informant interviews. Finally, over September and October of 2016 the researcher carried out a 12-month follow-up.

*The most frequently noted features [for participants to recommend the program to other ITPs] were exposure to Canadian employers, and the opportunity to work in a multicultural setting that would prepare them for diverse Canadian workplaces.*

Key findings relevant to the design and implementation of IES are that there was high program fidelity, appropriateness and adoption, with employers and participants identifying high satisfaction with it. Management was robust. All training outcomes were met and all employer and ITP participants indicated they would participate in a similar project again. The main design and implementation challenges identified included: better matching of employers and participants; ensuring that all content, particularly Week Four, was sufficiently advanced for ITPs; a revision of marketing collateral, and a longer amount of time spent on the solution design process with more frequent and lengthier exposure to employers.

### 1.3 IES Participants

Eighty-two ITPs were recruited for IES. Primarily, they had been in Canada for less than two years, had an average of eight years of pre-arrival experience and were heavily represented by the engineering, accounting, HR and business development professions. The points below summarize the participant profile.

- 68.4% of participants were aged 30 to 50 years

- 57% were from the skilled workers class while 18% identified themselves as family class newcomers.
- 52.5% of participants had been in Canada for less than two years
- 54.9% had held senior positions: Executive Director (12.2%), Senior Manager (13.4%), and Manager (29.3%)
- 48.5% of participants held a Bachelor's Degree while 46.3% indicated that they were educated to Masters level
- The main occupational groups represented by participants included: business, finance and administration (34%); education, law, social and government services (22%) and natural and applied science and related occupations (20%)
- The main occupations represented by participants included: engineers (N=23, nine civil), business development professionals (N=8), HR professionals (N=8) and accountants (N=7)

Thirty-seven participants completed the IES program with only three drop-outs from the training, primarily due to labour market attachment. Sixty-eight participants (32 control, 36 test) completed the six-month follow-up. At 12 months, the same number of participants completed the survey (35 control, 33 test).

*“Before IES I had a good experience about how to work with different nationalities and cultures, after IES I feel very confident about how to work with different cultures. I learned about the body language, identify the culture differences and working well with any team” (Participant No. 8).*

## 1.4 Impact of the IES Program

It is clear that participation by the test group in IES predicted a more rapid preparation for the Canadian labour market compared to those in regular EPBC case managed services evidenced by a significant impact on a range of essential employment readiness skills such as career decision-making, self-efficacy, outcome expectancy and job maintenance. IES test participants were more likely than control to be fully ready for employment at post-test. This training also resulted in measurable improvements in relation to a range of critical labour market skills such as innovation, use of initiative and communication. The model also shows potential in terms of test participants' belief in themselves that they can plan and carry out a job search in Canada, judging from positive trends in test group data related to job search self-efficacy.

The bullets below summarize the impact of IES:

- The Innovation Program training was predictive of **employment readiness** (test group 3.6 times more likely to experience a positive change)
- 46% of test group increased their readiness compared to 19% of the control group
- In relation to the sub-scales measured through the employment readiness construct more test group participants than control moved from insufficient to sufficient in the following: **social support, job search, outcome expectancy and self-efficacy.**

- In terms of job search self-efficacy, measured from baseline to 12 months post the training using a job search self-efficacy scale<sup>2</sup>, test group participants experienced a greater average increase compared to control for the following items: **resumes, information interviews, making a sales pitch, planning a job search schedule, finding out where job openings exist, using a variety of sources to find good job opportunities and searching for and finding good job opportunities.**
- In terms of overall job search self-efficacy from baseline to 12-month follow-up, **the test group's average score increased by 5.06 compared to an increase of 3.97 for those participants in control.** This represents a slightly greater change by the test than that experienced by the control group.
- Training was predictive of an increase in **innovation skills**
- There was no measurable improvement for test group participants in the leadership skills measured.
- There was a trend towards a minor increase in individual mean change scores for test group participants in relation to the **communication and initiative skills** measured compared to a decrease for the control group. For instance, on average, a test group participant's score for initiative skills increased by 0.63 whereas for a control group participant they decreased by -0.24.
- Of the participants who completed 12-month follow-up (N=68), 48% of those in test were in full-time employment, compared to 40% of those in control.
- At 12-months post the intervention, 33% of the test group were in **commensurate employment** compared to 29% of the control group.
- The training was not found to be predictive of full-time commensurate employment although there are positive trends in test group data.

Of note is the qualitative unintended outcome of the development of **teamwork skills** that emerged from evaluation data. While the test group experienced a negative mean individual change for this set of skills as measured through the MDQn, the majority of participants qualitatively identified the importance of learning teamwork skills and the value of being able to work in multicultural teams. They suggested that this outcome could be further emphasized in future programs. The negative change in teamwork scores could indicate a subject effect whereby participants initially scored themselves highly in relation to this competence and then came to learn through an intervention that there was much that they did not know, resulting in a more accurate assessment at post-test.

## 1.5 Conclusions

The research suggests that the IES model can address the transition penalty experienced by ITPs by facilitating more rapid improvement of: employment readiness; workplace innovation,

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<sup>2</sup> The job search self-efficacy scale should not be confused with the job search sub-scale that is assessed as part of employment readiness. In this research "job search self-efficacy" refers to an additional measure used to assess the potential impact of the training on this set of skills in greater detail than that offered through the assessment of job search skills in the employment readiness measure – the ERS.

initiative, and communication skills; culturally and professionally diverse networks, and job search self-efficacy.

The key labour market challenge that participants experienced and one that the program, in part, was meant to address was the need for Canadian work experience. The role of the current IES model in addressing this challenge is limited, but could potentially be strengthened through involving participants and employers who represent occupations and sectors where demand outstrips supply. It could also be strengthened through increased exposure to employers, an aspect which was supported by employers themselves.

*“Any program that gives direct exposure to employers is better than a generic job search club...this simulated work environment can serve to overcome the need for Canadian work experience”  
(Key Informant No. 1).*

The main conclusions from this research are not generalizable to the general population of ITPs due to the small sample size and the distribution of professions represented. However, we can see meaningful directions for many of the outcomes tracked for this demonstration project, suggesting that the model has promise and could merit further investigation of the impact of a fine-tuned model on a larger number of ITPs.

A fine-tuned model may result in an impact on commensurate employment. Alternatively, given the heavy transition penalties faced by the ITPs the follow-up period may have been too short to realize the commensurate employment outcome. Additionally, there may have been a delay effect due to test participants deciding, as a result of confidence gained and the opportunities to use their professional skills, to hold out until they found a commensurate job. Test group participants would also have delayed their job searches for a month to participate in the Innovation Program.

The key lessons learned from the design and delivery of the IES program are related to: enhancement of participant and employer matching; increased exposure to employers; ensuring that the job search skills fostered are at an even more advanced level than what was offered; reviewing how individuals are assisted to ensure that the use of professional and workplace skills developed are spotlighted and leveraged in their job searches; a more intentional emphasis on the improvement of teamwork skills, and a re-design of marketing collateral.

Key informants perceived that the IES program was aligned to EPBC services and could fit existing billables, but that it cuts across service categories and likely could not be implemented in every ESC. The factors that need to be considered in implementing the program at the ESC level are: existing competences in delivering employment services to newcomers, and sufficient local demand for the program. Interestingly, it was suggested there may be a potential fit between the IES model and the new version of Skills Connect.

In summary, it would appear that the IES model and this research further illuminates the potential to enhance ITP services within the EPBC and more generally in BC. It also presents a model that has the potential to foster rapid improvement of skills required for labour market attachment in Canada. Additionally, the research highlights the continuing, persistent barrier of Canadian experience for ITPs and ways in which to enrich the model to address this facet of the ITP transition penalty.

## 1.6 Recommendations

The main recommendations emerging from this research are to:

- Fine-tune the model to incorporate a demand-led approach, potentially targeting one or two of the in-demand occupations heavily represented in this research and increasing the frequency of employer connections throughout the innovation process. Carry out follow-up to track employment outcomes at 18 months.
- Explore the level of occupational diversity necessary for innovation teams to facilitate better matching of participants to employers, i.e. engineers working with employers who have engineering problems. Potentially, explore if occupational diversity could entail professionals and non-professionals, but in similar occupational groups, or different types of engineers.
- Target employers who have innovation as part of their business strategy and are in need of employees in targeted occupations.
- Fine tune training content to strengthen the development of teamwork, communication, initiative, risk-taking and adaptability skills. For instance, rather than separating the Canadian Workplace and Design Thinking modules, pursue the Design Thinking to look for opportunities to develop the named skills and then take time out of the Design Thinking content to “dive” into activities relevant to skills development. Thus, the Design Thinking phase would be lengthened with a potential increase in the initial stages of the process, reinforcing participative safety and the opportunity to learn and demonstrate Cultural Intelligence (CQ).
- Re-design the marketing collateral to reflect the problems and benefits perceived by stakeholders to be more relevant for employers and participants.
- Revise Week Four of the model to ensure the job search skills offered are very advanced, that participants demonstrate how they have applied innovation thinking to their job search plans, and have prepared a portfolio to validate how they used their professional skills within the IES program.
- To build on this work, design a Phase II of the IES program involving a larger sample, with an emphasis on implementation, to examine the impact of a fine-tuned IES model on the employment readiness, workplace skills and commensurate employment rates for targeted occupations within a geographical area where there is sufficient local demand.

- Consider how the content and delivery of the model could address identified barriers for those participants who still did not have commensurate employment at 12-month follow-up. These barriers include being: over 40, of visible minority status and/or being in country for more than two years.

## 2 Introduction

From February 2015 to July 2016, MOSAIC implemented a demonstration project called *Innovating for Employment Success (hereafter called the IES program)*. Funded by the BC Ministry of Social Development and Social Innovation (Research and Innovation), it tested whether or not training internationally trained professionals (ITPs) in Design Thinking could reduce the lengthy labour market transitions they face in British Columbia, and help them to attach to jobs that were matched to their pre-arrival skills and experience. The training component of this demonstration project was called the “Innovation Program.”

It was proposed that project involvement would allow participants to spotlight their professional skills in the Canadian context, which could then be leveraged in future job searches. It also proposed enhancement of competencies valued in the Canadian labour market, and improvement of participant employment readiness.

Design Thinking is “a human-centred innovation process that emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping and concurrent business analysis, which ultimately influences innovation and business strategy” (Lockwood, 2009). Multi-disciplinary teams usually collaborate to enhance implementation of such methods as user interviews, point of view analogy, ranking, user-driven prototypes and user observation.

Using an experimental design accompanied by an implementation evaluation approach, this research explored the impact of a Design Thinking training intervention on the employment readiness, workplace skills and labour market outcomes of a randomly allocated test group of 40 participants compared with a control group of 40 participants. A baseline survey, pre- and post-test usage of validated instruments, and two follow-up surveys ensured tracking of project outcomes and comparison between the test and control groups.

Training evaluation forms and in-depth interviews with some test group participants (N=10) elicited reflection on the acceptability, appropriateness, adoption and fidelity of the training model. Interviews with the MOSAIC Director leading on the project, partner employers and five key informants offered further insights as to the aforementioned facets as well as the feasibility and sustainability of the model. The latter two facets were considered in terms of the model’s potential to enhance Employment Program of British Columbia (EPBC) services delivered through the 73 WorkBC Centres throughout the province.

This research contributes to a field of study endeavouring to understand and find innovative solutions for the persistent employment barriers faced by ITPs, such as the Canadian experience double-bind, inadequate labour market bridging capital and slow acquisition of human capital necessary for labour market integration in Canada.

## 2.1 Aim and Objectives

The aim of the demonstration project was:

*To explore the impact of learning and implementing Design Thinking methodology to a real life business problem on: internationally trained professionals' career transitions, and their ability to secure full employment in an occupation that draws upon the skills and qualifications they obtained in their respective countries of origin.*

The objectives were to:

1. Pilot and document a Design Thinking training model with 40 internationally trained professionals.
2. Support 40 participants to work in multi-disciplinary teams to successfully apply Design Thinking methodology to a real-life business problem presented by eight employer sponsors.
3. Ensure that test group participants demonstrate ability to secure full employment in the Canadian labour market.
4. Document measurable improvements in the test group participants in relation to the development of skills for innovation, oral communication, leadership and initiative.
5. Ensure that by six months post the intervention a percentage of test group participants gain full employment in roles that are commensurate with the skills and qualifications obtained in their respective countries of origin.<sup>3</sup>

## 2.2 Methodology

The research methodology entailed:

1. Ethical approval by a third party private provider and review of all research instruments and consent form for compliance with the Commission on Accredited Rehabilitation Providers (CARF) quality standards and MOSAIC internal policy (accredited by CARF).
2. Recruitment of 82 internationally trained professionals eligible for case management in the EPBC who were randomly allocated to test and control groups with matching so the composition of the groups would be similar in terms of professional profile.
3. Administration of a baseline survey to all 82 participants to measure demographic variables and current perceived barriers to employment.

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<sup>3</sup> The contract with the Ministry of Social Development and Social Innovation was amended to include a 12-month as well as a 6 month follow-up.

4. Pre- and post-test administration to test and control groups of the Employment Readiness Scale (ERS) and the Management Development Questionnaire (MDQn) to track project outcomes related to employment readiness and also workplace skills (communication, innovation, leadership, teamwork and initiative).
5. Administration of a follow-up survey at six months and again at 12 months to all 82 participants to track employment outcomes, EPBC service usage from commencement of case management and job search self-efficacy items (each follow-up was completed by 68 participants).
6. Training feedback forms completed by test group participants and instructors after each training module and at program end.
7. In-depth interviews with 10 test group participants to gain qualitative feedback on their experience of the training, its impact and suggestions for improvement.
8. Interviews with five key informants to gain insight on strategic service and policy implications relevant to the project model.
9. Interviews with the six employer partners who provided business problems for participants to devise solutions for as part of the Design Thinking training.

Using an implementation approach, a detailed monitoring framework was designed for the project incorporating indicators that sought to assess the model's acceptability, adoption, appropriateness, feasibility, fidelity, cost and sustainability and management (See Peters et al, 2013). See the appendices for the monitoring framework with results.

### 2.2.1 Inclusion Criteria and Recruitment

Participants were recruited through Case Managers at 13 participating WorkBC Centres in Metro Vancouver.<sup>4</sup> The following criteria were employed to assess if someone was eligible for the project:

1. Demonstration of advanced language skills, evidenced by a Canadian Language Benchmark (CLB) of level 6 or higher
2. Educated to university degree level
3. Obtained their highest level of education relevant to their profession outside of Canada
4. Were employed in their field prior to arrival in Canada for at least 12 months
5. Were unemployed or underemployed (working 20 hours or less per week)
6. Could commit to the duration of the program
7. Were looking for full-time employment or self-employment aligned to their skills and education as soon as possible
8. Not looking to further upgrade their education or seek professional accreditation prior

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<sup>4</sup> These ESCs were: Burnaby, Coquitlam, Delta, New Westminster, North Vancouver, Port Coquitlam, Richmond and Whalley and in Vancouver: City Centre, Downtown Eastside, Vancouver Northwest, Vancouver South and Westside.

to gaining employment

9. Would be able to commit to full-time employment if they secured it or self-employment as evidenced by answering “yes” to the statement “If I got a full-time job starting in the next 4 weeks I could commit to it.”

Of note is that criterion eight above was intended to rule out ITPs in regulated professions who wanted to work in their field in Canada, but had not gone through the accreditation process, as the program model did not seek to address the licensure barriers many newcomers face. Thus, eligible participants from regulated professions were to be: a) already accredited and able to work in their field in Canada, or b) seeking to work in commensurate employment that did not require licensure.

### 2.2.2 Research Questions

Research and evaluation activities sought to collect data that could answer the following questions:

1. What role can “Design Thinking” as delivered through the Innovation Program play in addressing the “transition penalty” or lengthy delays professionally trained immigrants who are newcomers to Canada typically encounter in transitioning to work that is commensurate with their education, skills and experience?
2. What impact does learning and implementing Design Thinking have on internationally trained professionals’ ability to secure employment in an occupation that draws upon the skills and qualifications they obtained in their respective countries of origin?
3. What effects did participation in the “Design Thinking” as delivered through the Innovation Program have on the participant’s employment readiness and workplace competencies?
4. What lessons have been learned from the design and delivery of the Innovation Program?
5. Is “Design Thinking” as delivered through the Innovation Program sustainable for long-term delivery through the EPBC or other programs?
6. What factors need to be considered in implementing the Innovation Program at the WorkBC ESC level?

### 2.2.3 Research Instruments

The following instruments were employed for quantitative assessment:

1. *The Employment Readiness Scale – ERS (Valerie G. Ward Consulting, 2016)* – an online assessment tool deemed valid for program planning and evaluation measuring the extent to which clients are employment ready in relation to three interrelated goals: self-sufficiency in five employment dimensions; understanding the challenges/

barriers they face, and coping with those barriers by drawing on four sources of support. The scale was created for use in employment services funded through the LMMA and was proven to predict in 79.2% of cases that clients sufficient in all domains would be employed within 12 weeks of taking the ERS.

2. *The Management Development Questionnaire(n) (MDQn, Alan Cameron, 2004 Hogrefe Publishing Ltd.)* The MDQn is a valid and reliable self-perception measure of a range of competences considered to be important for professionals and managers in today's workplace. It measures five meta-management competences: managing change; planning and organizing; interpersonal skills; results orientation and leadership. High and low scores in relation to the competences measured can be interpreted both positively and negatively. However, for this project an increase in scores related to innovation, communication, leadership and initiative was related to project outcomes. Although not originally scoped in the design, teamwork scores were also included in the analysis due to an emphasis in qualitative training evaluation feedback about gains in teamwork skills.
3. *Job Search Self-Efficacy Scale (Zikic and Sacs, 2009)*. A validated scale to measure how confident an individual is in planning and carrying out a range of job search activities. The reliability estimate for the scale is 0.89. This scale was not originally proposed to measure project outcomes, but was included in order to gather more detail on the potential impact of the project in relation to this construct.

#### 2.2.4 Data Analysis

Quantitative data was analyzed using the Statistical Package for the Social Sciences (SPSS). Regression tests were chosen to test the predictive nature of the training on the growth of ERS and MDQn constructs.

Controls undertaken to measure the effects of the program and limit other effects included:

- Random assignment based on profession, and
- Where numbers were sufficient for statistical analysis, regression analyses included a range of demographic variables (e.g. gender, years in Canada, etc.) to control for the possible effects of those characteristics.

For the qualitative analysis, responses to individual questions asked of each research participant group in semi-structured interviews were content analyzed to assess the frequency with which similar responses emerged. Then, the researcher looked across responses within the data from each research group to identify themes.

#### 2.2.4.1 MDQn and Job-Search Self-Efficacy Regression Analysis

A series of linear regressions were used to test the effectiveness of the training program. A linear regression allows us to determine if the variable-in-question varies predictably/reliably based upon certain other variables. The regressions for the MDQn and the job search self-efficacy measures were done on the *change score* (from pre- to post-) for each participant:  $\text{delta} = \text{group} + [\text{baseline} + \text{gender} + \text{years in Canada} + \text{years of experience} + \text{sector}]$ .

This model tests whether or not membership in the training test group is predictive of the degree of change (from pre- to post-) that participants experienced. Our hypothesis was that those in the test group would experience a greater increase (from pre- to post-) than those in the control group who did not receive the training. We used these regressions to understand: if we implement the IES training again, can we expect a better than average increase in MDQn scores or job search self-efficacy scores for those who complete the training?

#### 2.2.4.2 ERS and Commensurate Employment Regression Analysis

A series of logistic regressions were also used to test the effectiveness of the training program. A logistic regression allows us to determine if a binary variable (yes/no) can be predicted based on other variables.

- The binary variable for the overarching ERS readiness construct was whether or not participants became more ready for employment; those who were already fully ready at the pre measure were removed from the test as they had already hit the 'ceiling' for readiness.
- The binary variable for the ERS sub-constructs was whether or not participants moved from "not ready" to "ready"; those who were already "ready" at the outset of training were removed from the test as they had already hit the 'ceiling' for readiness.
- The binary variable for the 6 month and 12-month follow up job attainment test was whether or not participants attained full-time, commensurate employment; nobody was removed from this test, as none of the participants had full-time, commensurate employment at the outset of the training.

Our hypothesis was that participants in the test group would be more ready for employment and have been more likely than control to obtain fully-time, commensurate employment.

### 2.2.5 Limitations

The key research limitations were:

- Due to small numbers, it was not always possible to carry out linear regressions on all variables. There could be other significant relationships, not found in this study that might be validated with a larger sample size.
- As with all pre- and post-test control group research, the baseline surveys and pre-tests with instruments may have had an impact on results, i.e. a subject effect where participants report expected results or score themselves highly on a set of skills at pre-test because they are not truly aware of their competency before an intervention, and then afterwards have a more realistic assessment.
- The intervention itself, could have had a delay effect on test participant employment.
- The results are not generalizable to all ITPs, given the small sample size and the over representation of particular occupations within the sample.

## 2.3 Context Review

The labour market issue addressed by this demonstration project was the “brain abuse” and skills atrophy experienced by skilled immigrants to Canada and British Columbia manifesting in underemployment and over-qualification for their labour market attachments (Bauder 2003). This issue is well-documented in the research literature (Bonikowska, 2011; Chen, 2010; Fuller and Martin, 2012; Gilmore, 2009). Also well-documented are the labour market barriers that skilled immigrants face including lack of recognition of foreign credentials and work experience; lack of English fluency; ethno-cultural discrimination, and acculturative stress (Bailey, 2014).

It is also well-known that these barriers result in a “transition penalty” or lengthy delays in professional immigrant career transitions while they work to accrue the necessary human and social capital required for attachment (Fang et al, 2009). Fuller and Martin (2012: 147) assert that “the average return to non-Canadian experience has now declined to essentially zero.” This transition penalty results in deleterious health effects for immigrants due to loss of income and social status (Elez, 2014).

This labour market issue is already being responded to at policy level in British Columbia through the designation of immigrants as a Specialized Population within the Employment Program of British Columbia and through the Skills Connect for Immigrants Program (SCIP). The extent to which SCIP’s successor, Career Paths for Skilled Immigrants (CPSI) fully addresses ITP needs remains to be seen. A 2013 evaluation of SCIP found that the program had “shifted away from the original “bridging to commensurate employment” mandate and

towards more of a focus on securing employment” attesting to the challenge of assisting ITPs to achieve the former (MNPLLP, 2013).

Recent research, including an evaluation of the EPBC, suggests that more targeted services are required for ITPs (Bailey, 2014; Ferrence and Company, 2016) and that eligibility requirements limit employment services’ capacity to respond to this group. The recent EPBC evaluation also highlighted unexploited opportunities in terms of employer engagement.

The purpose of this pilot was to test if enhancing EPBC service provision with an innovation thinking intervention would have an impact on the ability of internationally trained professionals to secure full employment in roles more aligned to their foreign education and work experience. It sought to explore if the acquisition and application of innovative techniques to a real time business problem for employer partners in the project made it possible for participants to work at higher levels in Canada than if they had engaged in traditional EPBC case managed services alone.

## 2.4 Labour Market Context

This section briefly paints the labour market conditions facing ITPs focusing on the occupations most frequently represented in the research samples. Key points include:

- According to Statistics Canada, regardless of when immigrants land in Canada, there is a higher proportion of individuals who are over-qualified for their jobs than Canadian-born individuals. In 2008, 42% of immigrant workers aged 25 to 54 were overqualified for their work compared to 28% of Canadian born workers.
- The Western Settlement Outcomes Survey from June 2013 found that half of the immigrants in British Columbia found it difficult to find a job in BC that made use of their qualifications.
- The vast majority of newcomers to Canada are university educated (Houle and Ysaad, 2010). Unfortunately, recognition of this education and experience is low. In BC only 19% of newcomers had, had their foreign credentials recognized while only 36% had, had their foreign work experience recognized (Ibid). These rates were lower than in Ontario and Alberta.

The next two sections consider the labour market situation for the occupational groups most frequently represented by IES research participants.

### 2.4.1 Engineering Occupational Outlook

Five engineering specialties are listed among BC's top occupations. The table below sets out those specialties and the number of projected job openings to 2024.

**Table 2.1 Job Openings for Engineers in BC to 2024<sup>5</sup>**

Specialty	Number of Opening to 2024
Civil Engineering	3,700
Electrical Engineering	2,100
Mechanical Engineering	1,900
Power Engineering	1,500
Software Engineering	1,900

Engineers must be licensed through the APEGBC and can obtain a range of different licenses: Professional Engineer, Engineering License, Limited License, and Engineer in Training. The licensure process requires one year of Canadian work experience.

While acquiring Canadian licensure as a Professional Engineer (P.Eng.) is a requirement of many engineering jobs, newcomers to Canada can acquire their one-year of Canadian experience without a license as long as they are supervised by a P.Eng.

Many newcomers experience the double-bind of not being able to gain a year of Canadian experience without previous work experience in Canada. In the most recent analysis of education-job match rates for internationally educated immigrants the rate for engineers was 19%.<sup>6</sup> One source estimates that the engineering licensing process can take up to seven years.<sup>7</sup> Post 2017, the Asia Pacific Gateway Skills Table, BC Labour Market Information forecasts that all of the engineering specialties in the table above will be experiencing a tightness ranking of "4." This score is the highest on a scale from one to four and indicates that there will be excess demand and limited supply with below normal unemployment.<sup>8</sup> Thus, employers will need to depend on internationally trained engineers to address skills shortages.

<sup>5</sup> Taken from [www.workbc.ca](http://www.workbc.ca).

<sup>6</sup> <http://www.statcan.gc.ca/pub/75-001-x/2010102/tables-tableaux/11121/tbl003-eng.htm>

<sup>7</sup> <http://canadianimmigrant.ca/slider/how-international-engineering-graduates-become-licensed-to-practise-in-canada>

<sup>8</sup> [http://www.lmionline.ca/wp-content/uploads/2015/12/APG-2015\\_EGTT-BC\\_occupations-list-moderate-DEC2015.pdf](http://www.lmionline.ca/wp-content/uploads/2015/12/APG-2015_EGTT-BC_occupations-list-moderate-DEC2015.pdf)

## 2.4.2 Business and Human Resources (HR) Professionals and Accounting Occupational Outlook

Business and HR managers and professionals, and accountants are listed amongst BC's top occupations. Projected openings to 2024 are set out in the table below.

**Table 2.2 Job Openings in H.R. and Accountancy in BC to 2024**

Job	Number of Openings to 2024
H.R. Managers	2,900
Auditors and Accountants	11,700
HR Professionals	2,200
Professional Occupations in Business Management and Consulting	3,400
Business Development Officers, Marketing Researchers and Consultants	2,400

No license is required for HR professionals in BC, although the Certified Human Resources Professional designation is advantageous. Accountants must have a Chartered Professional Accountants designation. In 2006, the education-job match rate for those internationally trained in accounting was 24%.<sup>9</sup> For those educated in HR management and services the rate was 8%.<sup>10</sup>

A recent Ontario study about internationally trained HR professionals found that their key employment barrier was lack of recognition of international work experience and credentials, despite respondents' higher educational attainment relative to their Canadian-educated counterparts.<sup>11</sup>

## 2.5 Summary of Literature Review

A comprehensive review of the literature to inform data analysis revealed the following themes (See detailed literature review in the appendices).

### 2.5.1 Potential to Address the ITP Transition Penalty through Human Capital Development

Design Thinking has the potential to address “wicked problems” or “problems so persistent, pervasive and slippery that they seem insoluble ... [that] shift disconcertingly with every attempt to solve them” (Neumeier, 2009). The transition penalty faced by ITPs would appear to be a wicked problem that Design Thinking could conceivably tackle.

<sup>9</sup> <http://www.statcan.gc.ca/pub/75-001-x/2010102/tables-tableaux/11121/tbl003-eng.htm>

<sup>10</sup> <http://www.statcan.gc.ca/pub/81-595-m/2010084/tbl/tbl18-eng.htm>

<sup>11</sup> [http://www.hrpa.ca/AboutHRPA/Documents/history/HRIEPRReport\\_ENG\\_Final.pdf](http://www.hrpa.ca/AboutHRPA/Documents/history/HRIEPRReport_ENG_Final.pdf)

Knowledge and ability to carry out Design Thinking processes and the adjunct skills developed through the implementation of it (innovation, risk-taking, fast learning, client-centredness) are desired in the labour market, as evidenced by the number of business schools teaching it and sectors employing it (Borja de Mozota, 2009). Design Thinking involves groups of individuals working together to solve problems and relies on group diversity to optimize results (West, 2014). Cultural diversity supports innovation (Lu et al., 2013), but should be carefully managed, especially in the early phases, to support collaborative creativity and participative safety (Winckler and Bouncken, 2011).

ITPs are posited to display high cultural intelligence (CQ), or the ability to shape and adapt to different cultures (Malik et al., 2014). CQ is a composite of knowledge and skills desired in the workplace that a Design Thinking process could allow participants to demonstrate and articulate to future employers. Design Thinking has the potential to foster skills, such as communication, innovation, initiative and leadership, that ITPs need to enhance or spotlight to assist their labour market integration.

### **2.5.2 A Route to Employment Readiness**

This project utilizes the Employment Readiness Scale as a tool to measure change in employment readiness for ITPs at pre- and post-test of the intervention (Valerie G. Ward Consulting Ltd/ Service Growth Consultants Ltd, 2002). The ERS conceives employment readiness as completion of three interrelated goals.

One aspect of employment readiness is self-sufficiency in relation to career decision-making, job search, and job maintenance (Valerie G. Ward Consulting Ltd/Service Growth Consultants Ltd. (2002). Because Design Thinking is an experiential learning process and the IES program was designed as a real life simulation of the Canadian workplace, the literature suggests it could allow for deep learning resulting in rapid internalization of Canadian workplace codes of conduct (OECD, 2009). Thus, the process could support eventual job maintenance. Due to structural barriers, lack of commitment to finding a career that is aligned to pre-arrival skills and experience is common to newcomers (Bailey, 2014). Groups of ITPs at different stages of their job searches using their professional skills to design solutions could support the development of employer networks, which ITPs lack (Rai, 2013), and supporting career decision-making for commensurate employment.

Another aspect of employment readiness is awareness of the challenges that need to be addressed for labour market attachment. A key challenge for newcomers is language proficiency and potentially, intercultural communication (Rai, 2013). Since Design Thinking relies on effective oral communication in culturally diverse groups it could create participant awareness of the gaps in their interpersonal communication skills gaps and foster improvement in those skills.

Employment readiness also relies on self-efficacy, and the development of social supports and networks. The potential of IES to develop cultural knowledge may result in improved self-efficacy as a connection between the two was found in the literature (Guerrero and Rothstein, 2012). Development of communities of support are seen to be an essential function of employment services (Elez, 2014) and a cohort-based intervention like IES could have an impact on culturally diverse peer network development.

The following relationships between employment readiness and the skills measured through the project were found in the literature and were explored in the data analysis:

- The extent to which IES participants may already have comparatively higher scores for innovation, risk-taking and flexibility.
- Whether or not there is a relationship between innovation skills measured and the three employment readiness goals measured through the ERS.
- Whether or not there is a relationship between oral communication and job search sufficiency, and job seeking activities.
- The extent to which there might be a difference between engagement in job seeking activities related to network development between the test and control groups.

### 3 Design and Delivery of the IES “Innovation Program”

This chapter sets out the training model and evaluation results pertinent to the implementation of the Innovation Program and its role in addressing the transition penalties faced by ITPs in the Canadian labour market.

#### 3.1 Research Participants

As previously indicated, 82 ITPs were recruited through Case Managers at participating ESCs. The following summarizes the demographic profile of the participants:

- 68.4% of participants were aged 30 to 50 years.
- 57% were from the skilled workers class while 18% identified themselves as family class newcomers.
- 52.5% of participants had been in Canada for less than two years.
- 54.9% had held senior positions: Executive Director (12.2%), Senior Manager (13.4%), and Manager (29.3%).
- 48.5% of participants held a Bachelors Degree while 46.3% indicated that they were educated to Masters level.
- Rates of participant engagement in foreign credential and work experience recognition included: credential recognition (36.6%), education upgrade (37.8%), and professional accreditation (41.5%).
- Most participants did not identify as a visible minority (76.8%), while 96.3% identified English as their second language. The average CLB level of participants was seven.
- The employment services most frequently used by participants were Skills Connect for Immigrants (58.5%) and English language training (46.3%).
- Participants had, on average, been employed in their field for eight years prior to arrival in Canada.
- The main occupational groups represented by participants included: business, finance and administration (34%); education, law, social and government services (22%) and natural and applied science and related occupations (20%).
- The main occupations represented by participants included: engineers (N=23, nine civil), business development professionals (N=8), HR professionals (N=8) and accountants (N=7).
- Of note, is that all 23 engineers were seeking occupations with the title engineer in them. However, only nine of those indicated that they had received or were in the

process of receiving AEPGBC designation. Three of the 11 engineers in the test group had gone through or were in the middle of the licensure process.

- The profile above shows that most participants were in Canada two years or less, and were mostly engineers, business development professionals, HR professionals and accountants.

### 3.2 The Innovation Program

Test group participants engaged in a four-week *Innovation Program* consisting of three modules. The 40 participants were assigned to eight innovation teams of five individuals each. During the Design Thinking module, each team worked with one of six employers to design a solution to a real-life business problem presented by the employer (two of the employers presented with two problems each). The Design Thinking module was led by the training partner for the program, Envisioning Labs. The table below contains an outline of the program. Training took place over two cohorts of 20 participants each. A total of 37 participants completed the training.

**Table 3.1 The Innovation Program**

Module	Length	Content
The Canadian Workplace	1 week	<ul style="list-style-type: none"> <li>• Workplace communication</li> <li>• Presentation skills</li> <li>• Teamwork skills</li> </ul>
Design Thinking	2 weeks	<ul style="list-style-type: none"> <li>• Design Thinking approach</li> <li>• Design Thinking methods</li> <li>• Meetings with employers (x 2)</li> <li>• Solution design and presentation to employers about solutions</li> </ul>
Next Steps	1 week	<ul style="list-style-type: none"> <li>• Applying design thinking skills to job search</li> <li>• Leveraging/highlighting the skills developed for job search</li> <li>• Strengthening job search tools and strategies</li> </ul>

Participating employer partners were as follows:

- Seaspans Ltd. (large employer)
- Zaber Technologies (small employer)
- City of Vancouver, Engineering (large employer)
- City of Vancouver, Equal Opportunity Employment Program (large employer)
- Sinclair Dental (medium employer)
- Camp Pacific (small employer)

The types of problems innovation teams worked to solve included: development of a new internet file structure; fostering diversity dialogue and learning transfer in an organization; enhancing promotional material; improving the front desk customer service experience, and promotion of

*"I think that it could be successful for businesses as a way to solve certain problems, i.e. expand into a market that certain participants come from. One of our students was from Vietnam and understood this market better than anyone I have ever met" (Employer Participant no. 2).*

internal training for employees. Due to random allocation to the test group and employer self-selection of the problem they wanted solved, matching of participants to teams and problems sometimes presented a challenge. Participants from certain occupations could not always be matched to problems that required their professional skills. For instance, one team worked on a marketing problem, but had a number of engineers in the group.

Employers committed five hours per staff person for engagement with innovation teams. The solution design process which teams implemented in Weeks Two and Three of the Innovation Program is set out in the figure below.

**Figure 3.1 Solution Design Process**

1. **Introduction to Design Thinking definition and theory:** What is human-centred design?
2. **Discover Phase:**
  - a. Learning how to use essential Design Thinking tools such as, Job to be Done (metrics for client outcomes), Outcome Expectations, Value Quotient (desired/undesired outcomes)
  - b. Carrying out interviews with employers/background research using the techniques
3. **Interpretation Phase:** learning how to interpret information through telling stories, searching for meaning and framing opportunities
4. **Ideation Phase:**
  - a. Using methods such as Hit Matrix, Brainwriting or Idea Harvesting to come up with a range of solutions
  - b. Emails/phone calls to employers to validate ideas
5. **Experimentation Phase:**
  - a. Using such techniques as Fail Fast Prototyping and Minimum Viable Product to come up with prototypes to solve problems
6. **Presentation Phase:**
  - a. Preparing a compelling presentation for the employer about the solution, using storytelling techniques
  - b. Presenting to employers

### 3.3 Training Delivery Evaluation Results

This section offers key results from the training evaluation data collected about the three Innovation Program modules. For each module, participants were asked to complete Likert-type items to assess the extent to which training outcomes had been attained, as well as to offer qualitative feedback about the module. Trainers were asked in session feedback forms to reflect on adherence to proposed training curriculum, what methods worked and what did not work and any adjustments to future training approach. All this data was analyzed for themes.

*Having [to work] with the different person, different culture such a good experience for me in Canada. When you work in some kind of workplace you will work with different culture...different background...here I have the chance to work with different culture and different race and it was so important for me.. I tried to learn lots of from this kind of experience... I learn how to do it with the different person, [the] demotivated person in a team, how to do brainstorm... delegation work in the team. [I] like all kind of this experience (Participant No. 10).*

Results indicate that all training outcomes were met. Detailed results are set out in the table below.

**Table 3.2 Module Evaluation Results**

<p><b>The Canadian Workplace</b></p>	<ul style="list-style-type: none"> <li>• Mid-range or above scores for all items measured in participant evaluations indicating that learning outcomes were attained and the Trainer was effective.</li> <li>• Highest mean scores were for these items: understand key presentation skills (4.45), level of understanding of Canadian workplace communication (4.39), and my ability to use the workplace communication skills learned (4.29).</li> <li>• Lowest mean scores were for these items: change in presentation skills (3.83), change in ability to operate effectively in a team in the workplace (3.87), and change in ability to resolve workplace conflict (3.92).</li> <li>• Opportunities to practice teamwork skills were both the main value of and suggestion for improvement for this module.</li> <li>• For some participants, the content level was perceived to be too low given their English level and previous professional work experience, particularly in Test 1.</li> <li>• Some participants suggested more industry case studies and more “real life” exposure to employers and situations, e.g. through role plays and presentations.</li> <li>• Participant presentations running over time was a challenge.</li> </ul>
<p><b>Innovation Thinking</b></p>	<ul style="list-style-type: none"> <li>• Mid-range or above scores for all items measured in participant evaluations indicating that learning outcomes were attained and Trainers were effective.</li> <li>• Highest means scores were for these items: basic understanding of the reasons for and applications of Design Thinking (4.53), by end of module ready to present solutions to employers (4.50) and understanding of the process of ideation (4.44).</li> <li>• Lowest mean scores were for these items: ability to conduct online searches (3.78), confidence in ability to implement one or more: Fail Fast Prototyping, Minimum Viable Product (3.97), and ability to extract a job definition/problem statement for a solution design (4.03).</li> </ul>

	<ul style="list-style-type: none"> <li>• The pace of this module was too fast, and how to work in teams needed more emphasis despite some changes being made to training methodology from Test 1 to Test 2 to address these issues.</li> <li>• Some feedback about the need for more time to learn DT concepts and terminology and that more attention be given up front to breaking down the process flow for DT from start to finish.</li> <li>• The role of the Trainer in checking-in and encouraging participants on a daily basis was important.</li> <li>• Generally, participants fed back that more contact with employers would be valuable.</li> <li>• In Test 1, some participants were not always clear about the role of and instructions for activities.</li> <li>• In Test 2, language barriers were perceived as a significant challenge to training delivery by Trainers, as well as a lack of commitment to the program from some participants (e.g. lack of participation in class, showing up late or not at all).</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>• For the majority of participants, mid-range or above scores for all items measured in participant evaluations indicating that learning outcomes were attained and trainer was effective</li> <li>• Highest mean score of four items measured was for I can describe what I have learned and accomplished as a result of my participation in the IES program (4.24).</li> <li>• Lowest mean score was for the item useful to my career transition in Canada (3.81).</li> <li>• Varied qualitative feedback from participants, with some indicating it was repetitive and they did not need it, or that the content was not advanced enough. This feedback resulted in more one-to-one work to tailor training content in Test 2, which was perceived as valuable by Test 2 cohort.</li> <li>• Some participants recommended that industry case studies and/or employer contact could be useful during this module while others would have preferred that the DT module was extended into this week.</li> <li>• The Trainer noted lack of commitment to the program by some of the Test 2 participants.</li> </ul>

The main trends emerging from the results that point to a need for change include: the need for more industry and employer contact throughout the program; ensuring that program content is appropriate for professionals, and adjusting the pace and content of Design Thinking elements to the language levels of participants.

The table below sets out the mean scores for the Likert-type items measured in the final evaluation form given to participants to evaluate the overall delivery of the Innovation Training Program (five-point scale).

**Table 3.3 Participant Scores on Innovation Training Delivery**

Item	Mean
Extent to which program met expectations	3.47
Could successfully employ the innovation methods learned in the workplace	4.11
Team successfully collaborated to develop business solution	4.11
Was not comfortable speaking up in my innovation team (reverse scored)	2.06
Each member’s perspective was used to generate solution	4.00
My culture of origin knowledge contributed positively	4.25
Satisfaction with simulated work environment	4.03
Satisfaction with delivery of IES Program generally	4.28

The table above shows that the program met participant expectations and that participants were generally satisfied with the program.

The next sections describe themes relevant to delivery that emerge from the qualitative data collected through the final evaluation forms, in-depth participant interviews and employer interviews.

*“I [have a] Latin American background... to be friendly with people [I got to] show my Latin American side... people [were] eager to talk to me, answer my questions” (Participant No. 5).*

**3.3.1 The Importance of Working in Multicultural Teams**

Many participants indicated in final evaluation forms that the reason the program met expectations was the focus on teamwork within multicultural teams. They recommended an increased emphasis on teamwork in subsequent programs. This theme was backed up in some in-depth participant interviews:

*Having [to work] with the different person, different culture such a good experience for me in Canada. When you work in some kind of workplace you will work with different culture...different background...here I have the chance to work with different culture and different race and it was so important for me.. I tried to learn lots of from this kind of experience... I learn how to do it with the different person, [the] demotivated person in a team, how to do brainstorm... delegation work in the team. [I] like all kind of this experience (Participant No. 10).*

Some participants reflected on the impact of culture on teamwork in their final evaluations, with most of the participants who were interviewed indicating that their cultural background was useful to their work in their Innovation Teams, “I [have a] Latin American background...

to be friendly with people [I got to] show my Latin American side... people [were] eager to talk to me, answer my questions” (Participant No. 5).

Many participants and Trainers described teamwork as the main challenge to program delivery. In Test 1, some teams faced challenges working together, because the program did not include how to develop a terms of reference or allow sufficient time to engage in group norming. In Test 2, there was still some indication that further emphasis could be given to developing teamwork skills through participants working in their Innovation Teams from commencement of the program.

### **3.3.2 Increased Employer Contact**

Both participants and employers indicated that program delivery would benefit from increased employer contact, and this was the main suggestion for improvement from participants. The main suggestion for program improvement from employers was more contact/context with employers (i.e. one extra meeting/conference call with employers) as well as a longer timeline for learning DT and gathering information from all relevant sources to support ideas *“Half [of the recommendations] were helpful in the context of attainable...some of the others were far fetched and would have required more context in terms of how they landed there in terms of buy in from an employer”* (Employer Partner No.3).

From the participant perspective, evaluation data showed that increased employer contact would have been helpful in solution design, but also in terms of being able to demonstrate their skills to employers and getting to know Canadian companies and workplaces. Some thought that they would have more time actually being onsite in the workplace. One participant said, “[I] got almost nothing from that exposure” (Participant No. 1).

### **3.3.3 Increase in Design Thinking Content and Module Length**

Many employers and participants suggested more time be spent on the pure Design Thinking curriculum. An increase in time dedicated to the approach was perceived by employers to benefit the robustness of solutions designed. For participants, both language levels and perceived length of time necessary to really understand the approach were challenges to learning, *“it is a good methodology, but maybe the timeframe is not so suitable...sometimes we feel very confused [and] Design Thinking is not so very new to me”* (Participant No. 3).

### 3.3.4 High Satisfaction with Program Delivery

Both employers and participants indicated high satisfaction with program delivery evidenced by a mean score of 4.28 from participants, all six employers indicating that they would participate in the program again, and all employers and participants interviewed saying they would recommend the program to another employer or newcomer in their situation.

The features most often named by employers as a basis for making a recommendation were the value of the business solution provided, and employers availing themselves of diverse perspectives on a problem, whether those perspectives were related to cultural diversity or professional diversity, *“I think that it could be successful for businesses as a way to solve certain problems, i.e. expand into a market that certain participants come from. One of our students was from Vietnam and understood this market better than anyone I have ever met”* (Employer Participant No. 2).

The features that participant interviewees emphasized in recommending the program to another newcomer were: interaction with newcomers from other cultures, exposure to Canadian employers and learning about workplace culture.

### 3.3.5 Rethink the “Next Steps” Module

There was considerable variation in feedback about the third training module both from evaluation form data and interviews with participants. The main feedback was that further attention be given to content to ensure that it was not duplicative of services received through WorkBC centres, *“In the 4<sup>th</sup> week [we were] collecting the old information...it seemed that we lose something that we learned in the process of the program”* (Participant No. 4). One recommendation to improve Week Four was to use a coach approach for individual job searching *“to keep that higher level throughout the whole thing”* (MOSAIC staff).

Some of the test group participants interviewed reflected that the content in Week Four was more advanced than what would traditionally be received in a WorkBC setting.

## 3.4 Marketing and Recruitment

This section presents results from participant, employer, key informant and MOSAIC Director interviews about marketing and recruitment.

### 3.4.1 Participant Recruitment and Marketing

The main trends in qualitative data about participant recruitment were:

- Better matching of participants/groups to employers so that participants could optimize the opportunity to spotlight their skills through the solution design, although some stakeholders wondered if matching would compromise the methodological requirement for multi-disciplinary perspectives.
- Concerns about a lengthy recruitment process to gather sufficient numbers for a cohort-based program and the resources that, that necessitates. A key challenge was that the recruitment period was lengthy in order to ensure target numbers for participants was reached, which meant that in some instances participants found jobs before the program started and a replacement had to be found.

The main comments about participant marketing material were that there was too much text on the collateral and that, “the benefits named are not the real benefits [of the program]” (Key Informant No. 4). The main feedback from participants was that it was not clear to them how much exposure to employers they were going to have, with some indicating that they thought there would be much more contact, including actually being situated in the employers’ workplaces.

*“[What interested me] was [that it was a] slightly newer, fresher way of looking at things. Normally most of the practices...so far as transitional thinking, say ‘work on resumes, that will get you a job.’ It [IES] was going deeper and through a process, was I think, was trying to form the way people think. [I] think that’s more effective” (Key Informant No. 3).*

### 3.4.2 Employer Recruitment and Marketing

Some key informants had the perception that it was more likely that large employers in the Lower Mainland would be interested in a project like IES and indicated it might be challenging to recruit small to medium size employers who represent the bulk of employers in British Columbia. Another key informant reported the opposite:

*“Low level organizations [would be] very willing to be participants but won’t give the newcomers the experience they need to be successful in that experience [there are] only so many large companies and head offices that you can tap into Vancouver, the lower mainland [gives] very clear picture of what organizations are suited to this process to work over the long-term” (Key Informant No. 1).*

Some key informants recommended that strategic employer recruitment would prioritize relationship building, targeting organizations that were facing tightness in relation to specific occupations and/or had innovation as part of their corporate strategy. One key informant mentioned that awareness-raising with employers about labour market trends would be important for uptake of the IES program if it was positioned as one that could address skills

shortages, “The more you can gently elevate an amber flag, we are over here, you might need us...its awareness, communication, being proactive for a labour market that is going to need you” (Key Informant No. 4).

Key informants’ main feedback about employer marketing collateral was that there was too much text and that it did not identify the most relevant problems for employers that Design Thinking could help to solve. Challenges perceived to be more relevant were: market expansion, productivity issues and/or finding and keeping employees.

In terms of positioning the IES program, the main attractors and benefits of the program named by employers included exposure to the Design Thinking methodology, supporting newcomers and contact with newcomer talent that could benefit individual organizations should they have positions available.

### 3.5 Project Management

Generally, data related to management of the project was positive. Employers gave no critical feedback about management and the majority of participants interviewed gave positive feedback about project co-ordination. Key success factors reported for project co-ordination included: effective referral relationships built with partner WorkBC Centres, the social media community built for the project and the positive relationships between the co-ordinator and the participants. Also highlighted by MOSAIC staff was a “Lessons Learned” meeting held in between cohort one and two trainings to troubleshoot and make adjustments to support alignment to training objectives and outcomes.

The main recommendations for future projects included scenario forecasting at project commencement to address potential challenges and more time in between cohorts to allow for recruitment.

### 3.6 The Potential Role of the Innovating for Employment Success Model

This section presents quantitative results about the barriers that IES participants perceived were resulting in delayed transition to the Canadian labour market. Also considered are the employment challenges that test group interviewees perceived were addressed by the IES program. The section also presents qualitative results from MOSAIC staff and Key Informant interviews about the perceived rationale, context and credibility of IES in meeting ITP’s employment needs. These results explore the perceived role of the IES program as a newcomer employment service.

*“[The main challenge is] local experience – I think that’s quite difficult for people like me. I was a professional before coming here for 15 years...the background make me harder to find a job...I don’t think the IES helped me much on that...if IES can provide some working cultures...to work in some Canadian companies...even shorter it might help” (Participant No. 7).*

### 3.6.1 Employment Barriers

The IES baseline survey tracked participants’ perceived employment barriers. The table below shows that the top three barriers for the whole sample were not enough or no job experience in Canada (80.5%), not having connections in the job market (74.4%) and my job experiences from outside Canada are not accepted (46.3%).

**Table 3.4 Employment Barriers of IES Research Participants**

Barriers	Control %	Test %	Total
Language problems	17 (40.1%)	10 (25%)	27 (33%)
Not knowing how to find a job	12 (28.6%)	4 (10%)	16 (19.5%)
My qualifications from outside Canada are not accepted	16 (38.1%)	13 (32.5%)	29 (35.4%)
My job experiences from outside Canada are not accepted	17 (40.5%)	21 (52.5%)	38 (46.3%)
Not enough or no job experience in Canada	33 (78.6%)	33 (82.5%)	66 (80.5%)
Not having connections in the job market	34 (81%)	27 (67.5%)	61 (74.4%)
Discrimination	3 (7.1%)	6 (15%)	9 (11%)
Transportation problems	4 (9.5%)	2 (5%)	6 (7.3%)

Compared to the control group, test group participants indicated more frequently that they were experiencing the barrier of my job experiences from outside Canada are not accepted. Of note is that the test group indicated less frequently than control that they were experiencing the barriers of language problems and not knowing how to find a job.

The test group participants interviewed were asked to reflect on the employment challenges, if any, that IES was most effective at helping them with. The main challenge that IES was perceived to help with was networking or making connections, “Networking...sending resumes doesn’t work. Someone in the IES program helped me to find an important connection in BC Hydro” (Participant No. 4).

A few participants highlighted lack of confidence as a challenge that IES had helped to address. One participant described, “It was more inside [on an] emotional level...For my case it was that because I was a very successful person...on an emotional level when nobody recognizes you, you actually collapse inside, you cannot send good resumes...the remedy for that is being in teams working with other people to remain yourself [a] high level of energy” (Participant No. 2).

A few participants highlighted the limitations of IES in addressing what they perceived to be their main barrier, which was not having Canadian experience. As one participant, who is an accountant, said, “[The main challenge is] local experience – I think that’s quite difficult for people like me. I was a professional before coming here for 15 years...the background make me harder to find a job...I don’t think the IES helped me much on that...if IES can provide

some working cultures...to work in some Canadian companies...even shorter it might help” (Participant No. 7).

### 3.6.2 Perceived Need and Likelihood that IES Model could Address Need

In order to further explore the potential role of a program such as IES in addressing the transitional penalties experienced by ITPs, Key Informants were asked what they perceived as the rationale and context for the program as well as how credible they thought the model was. This section presents the themes emerging from that data.

#### 3.6.2.1 A Need for Canadian Workplace Skills and Peer Support

Most of the Key Informants noted how the model addressed a need for Canadian workplace skills:

*“[What interested me] was [that it was a] slightly newer, fresher way of looking at things. Normally most of the practices...so far as transitional thinking, say ‘work on resumes, that will get you a job.’ It [IES] was going deeper and through a process, was I think, was trying to form the way people think. [I] think that’s more effective” (Key Informant No. 3).*

Some noted the need for a cohort-based approach in order to enhance learning and provide peer support and networks for ITPs. One Key Informant noted the value of a cohort approach to service outcome measurement:

*“When we rely on an individualized approach – we lost some of our ability to measure...there is so much diversity in service...the more you dilute that with an individual need...you run the risk of not being able to measure the success of your program...when [a cohort approach is used] now we are being able to extract something...compare apples to apples...speak to funders [have] consistency, [have a] broader application” (Key Informant No. 5).*

##### 3.6.2.1.1 Innovative, Direct Exposure to Employers

Some key informants indicated that they felt they could not speak to credibility for ITPs without knowing the documented outcomes of the program. For some of the other Key Informants, credibility of the program in relation to ITPs was described in terms of

*“The more you can gently elevate an amber flag [for employers], we are over here, you might need us...its awareness, communication, being proactive for a labour market that is going to need you” (Key Informant No. 4).*

direct exposure to Canadian employers, “Any program that gives direct exposure to employers is better than a generic job search club...this simulated work environment can serve to overcome the need for Canadian work experience” (Key Informant No. 1).

For some of those interviewed credibility also seemed to stem from the sophistication or innovation in the approach used, “[Service providers are] trying to make a meaningful difference, [are] frustrated by traditional means of integration...good to try new methods, tweak old methods. There is room in this market. Canada needs to be seen as a progressive nation [in terms of the] services and supports it provides newcomers to Canada...owe it to ourselves to continue to innovate” (Key Informant No. 5).

### 3.6.2.2 Build Credibility with Employers over Time

In terms of employer credibility, the responses of Key Informants mainly emphasized how the program could only build credibility with employers through successive programs by offering them the chance to experience international talent firsthand and in doing so, helping them to see a “tangible, practical value...if you can demonstrate a low cost, no cost workforce development solution” (Key Informant No. 2).

MOSAIC staff indicated the tension of adjusting the program model to meet employer needs at the expense of the Design Thinking methodology, “I guess if you wanted to get into more homogeneous cohorts and have them work at engineering companies [you could adjust it to meet employer needs), but then we have the fundamentals that this DT works better when you have people who have diverse backgrounds.”

## 3.7 Key Findings

The following sets out the key learning points in relation to the design and delivery of the IES program:

- Participants were generally quite new to Canada (53% in Canada two years or less), had an average of eight years pre-arrival work experience and were likely to be engineers, business development, accounting, or HR professionals.
- The program could benefit from increased exposure to employers and industry, both to enhance the Design Thinking solutions and meet participant expectations.
- An unintended outcome was the enhancement of teamwork skills. However, evaluation data also showed that there could be more emphasis on these skills in future programs.
- It would appear that the program offered participants the opportunity to display their cultural intelligence, evidenced by a participant mean score of 4.25 for “my culture of origin knowledge contributed positively.”

- For the most part, participants experienced participative safety in their Innovation Teams, shown by a mean score of 2.0 for “was not comfortable speaking up in my innovation team.”
- Matching of participants to employers and industries could be enhanced in future programs through: targeting employers who are facing tightness in relation to specific occupations, and who have a demonstrated commitment to innovation.
- The main changes suggested for future program content were: more emphasis on teamwork tailored to the team working ability of individual teams; more time dedicated to Design Thinking, and a rethink of the “Next Steps” module to ensure it does not duplicate current EPBC service provision.
- The project management was robust with some recommendations: a larger space for training delivery; enhanced screening of participants, particularly in relation to language ability; dedicated time to scenario forecasting for program implementation, and a re-design of employer and participant marketing materials emphasizing more relevant problems and benefits.
- The primary role of the IES program articulated through the data is to: facilitate the development of local social capital and ITP networks, provide an innovative way of making connections in the job market and develop Canadian workplace skills. The role of the program in addressing the barrier of no Canadian experience is limited, despite this being the challenge most frequently identified by participants.

The table below presents the Design and Delivery findings that are relevant to initial stated outcomes for the program as per the proposal for funding and indicates strong program results for each of the outcomes.

**Table 3.5 IES Program Design and Delivery Results**

<b>Outcomes</b>	<b>Program Results</b>
1. At least 80% of participants complete Design Thinking training	• 37 out of 40 (92.5%) of participants completed the training
2. 100% of employers indicate that they would be willing to participate in a similar project again	• All six employer partners indicated they would be willing to participate in IES again
3. No of test group participants who agree that they collaborated successfully to develop business solutions	• 32 out of 40 participants agreed or strongly agreed to this statement (mean score 4.11)
4. No of test group participants who agreed that the group harnessed the perspective of each member of their Innovation Team to generate their business solution	• 30 out of 40 participants agreed or strongly agreed to this statement (mean score of 4.00)
5. No of participants who agree that they would be able to successfully employ the Design Training methods they learned within the workplace	• 31 out of 40 agreed or strongly agreed to this statement (mean score of 4.09)

## 3.8 Discussion

This section compares the research results against themes and relationships identified in the literature review and the implications of that discussion for the role, design and delivery of IES.

### 3.8.1 The Role of Design Thinking in Addressing the ITP Transition Penalty

What does this demonstration project tell us about the function of Design Thinking in addressing the transition penalties faced by ITPs in the Canadian labour market? This section considers the potential role emerging from the data. Whether or not the project fulfilled that role will be considered in the next chapter.

The literature suggests that workplace diversity is key to innovation competence, and that diverse workplaces require employees who display cultural intelligence (CQ) (Malik et al. 2014). Some authors contend that newcomers have existing CQ and identity capital that they can use to their advantage in diverse settings (ibid.; Ho and Bauder, 2012). Given that Design Thinking, by necessity, involves heterogeneous groups both culturally and professionally, it was posited to offer participants the opportunity to both learn and spotlight skills for working in diverse groups. The data from this project, in particular from participants themselves, was that a key role of the IES program was to allow them the opportunity to work in multicultural groups to ready them for the Canadian workplace, which was perceived to be a diverse setting. Thus, participants perceived that IES would give them essential human capital for labour market attachment.

A key barrier to labour market integration for newcomers is a lack of local social capital, including social networks that can aid attachment (Zikic et al, 2010; Rai, 2013). The literature review suggested the potential for Design Thinking to help participants develop networks with each other through their Innovation Teams, potentially resulting in the transfer of local capital. The findings bear out this role for the IES program as many participants interviewed articulated the importance of the peer support and networking that took place through the program.

Another key barrier cited in the literature is the lack of employer connections for newcomers. Both participants and other stakeholders interviewed, indicated the potential for a Design Thinking engagement to foster these real life connections.

Finally, the literature contends that early concentrated intervention with specialized populations is essential for one-stop employment services and that a Design Thinking intervention could offer that to ITPs. Most IES research participants had been in Canada for

two years or less, and key informants highlighted the role of IES in facilitating a targeted approach that would allow for the accrual of Canadian workplace skills in a more profound way.

Relevant to this section of the discussion is the extent to which the IES program was perceived as acceptable or agreeable. Findings suggest that it was highly acceptable given that all employers were willing to participate in a similar program again, key informants thought it had credibility, and most participants thought that they would and could employ Design Thinking Skills within their current or future workplaces.

Thus, the potential role of IES as perceived by stakeholders is as a credible model for providing early, concentrated support to develop human and social capital necessary for labour market attachment, including workplace skills, peer network development and employer connections.

### **3.8.2 Evaluation of Design and Delivery**

This section considers how the data shows the program addressed key program evaluation areas: fidelity, adoption and appropriateness.

#### **3.8.2.1 Fidelity**

If a program has fidelity it was delivered as laid out in the original proposal and was considered to be of high quality. Relevant research results show that fidelity of the IES program was high. There were high levels of satisfaction with program delivery by both participants and employers, the program met initial expectations and learning outcomes were met. Proposed training outlines were adhered to and the project was managed such that milestones and activities took place as originally proposed.

Relevant to quality of delivery, the Conference Board of Canada (2010) notes the challenge of fostering participative safety in diverse groups. West (2014) suggests initial intensive management of diversity can help in the early stages of the innovation process. Results showed that participants experienced participative safety. However, the MDQn results showed decreasing teamwork mean scores for the test group between pre- and post-test and evaluation feedback emphasized the need to enhance teamwork. In particular, recommendations were made after the first intake to ensure that Innovation Teams were prepared by being given the targeted foundational teamwork skills needed for an innovation process.

Participants and employers alike suggested that more time be focused on the Design Thinking approach. The first week of the Innovation Program was adapted to further emphasize teamwork skills necessary for innovation during Cohort Two training in such a way that the

original learning outcomes could still be met. The results suggest that the program could be further enhanced to facilitate the specific teamwork skills needed to engage in a Design Thinking process and succeed in the Canadian workplace. For instance, participants could begin to work in their Innovation Teams immediately and the employer discovery and brainstorming phases could be lengthened. Week One learning outcomes and relevant content could be seeded throughout the whole program versus confined to one week. Doing so could result in a measurable positive impact on teamwork skills in future programs, which would appear to be, although unintended, a valuable outcome for the program, both for participants and in the labour market.

Stakeholders also recommended that the marketing materials for the program be revised to better reflect the problems and benefits that were most relevant for employers and newcomers. For employers, the most relevant problems were perceived to be breaking into new markets, solving workforce development issues and productivity. Qualitative findings suggest that there could be better matching of participants to employers and problems. Key Informants suggested that employers facing tightness for specific occupations and who are committed to innovation be targeted. This targeting would further support program feasibility, for instance, by targeting employers who need engineers, HR professionals, business development professionals and accountants. In other words, future programs could incorporate a demand led approach.

Of interest, is the qualitative finding that Week Four of the Innovation Program was duplicative, given the quantitative data that will be reported on in the next chapter demonstrates the greater increase in confidence for the test group for many of the job search self-efficacy items measured. The latter would suggest that Week Four may have offered a more advanced set of job search skills than those available to the control group. Future programs could ensure this element was further differentiated from other WorkBC services. What is not clear is how participants were able to leverage the use of their professional skills in their job searches, pointing to a potential need to review how Week Four sets this leveraging up. Tweaking employer and participant matching through a demand-led approach might also facilitate this leveraging and support program feasibility.

### **3.8.2.2 Adoption and Appropriateness**

Adoption refers to whether or not there was sufficient uptake for the program. Results show high adoption for the program with 37 of 40 test group participants completing the program. Only one of the three participants who withdrew did so because they did not think that the program was going to meet their needs.

If a program is appropriate it is perceived to fit the target population and the organization/s implementing it. In the case of the IES, the research considered the program's fit to MOSAIC and within the EPBC model. Results show that the program was perceived to fit MOSAIC's organizational strategy. They also showed that IES was perceived to fit within the EPBC model. Further detail on how IES fits within the EPBC will be discussed in Section 6.4 below.

In terms of the target group, results demonstrated that the intervention was perceived to fit the target population and address the need for more targeted services for ITPs in British Columbia.

## 4 Impact of *Innovating for Employment Success*

This chapter sets out quantitative and qualitative data relevant to the impact of the IES program on participant employment readiness, workplace competencies and labour market attachment.

### 4.1 Impact on Employment Readiness

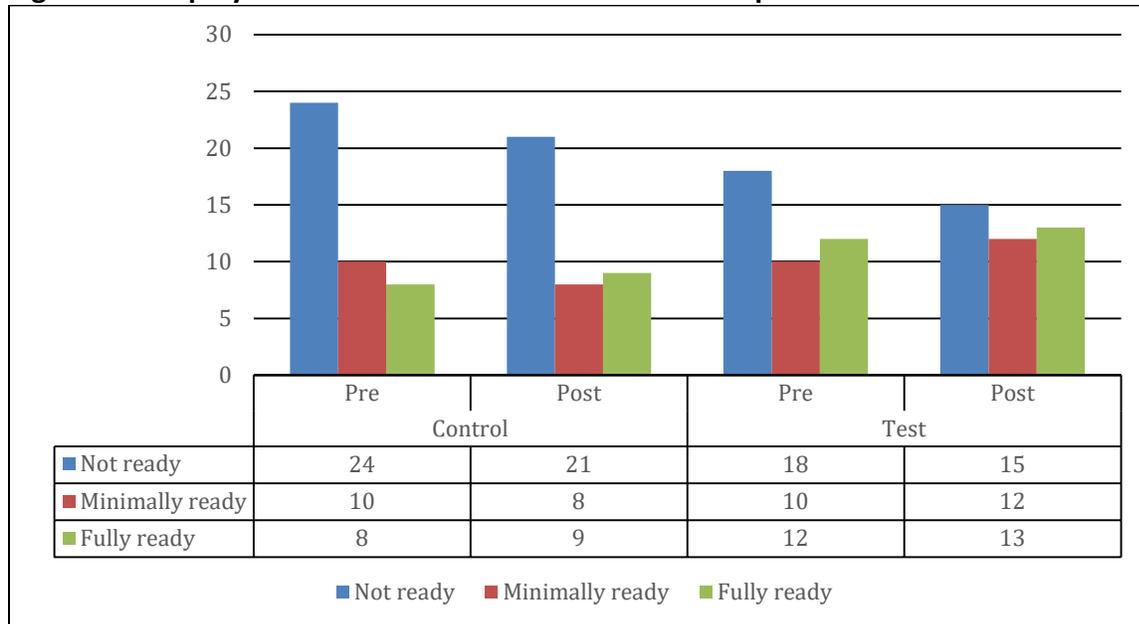
This section details pre- and post-test results from the Employment Readiness Scale and job search self-efficacy and networking measures, as well as any qualitative data relevant to the impact of IES on participant employment readiness. Quantitative and qualitative data analysis shows that IES had a positive impact on Employment Readiness.

#### 4.1.1 Employment Readiness Scale (ERS) Results

When employment readiness was measured just after the end of the Innovation Program, more test group participants compared to control were found to be minimally ready or fully ready for employment.

The figure below shows the employment readiness of control and test group participants, pre- and post-test.

**Figure 4.1 Employment Readiness of IES Research Participants**



The table below shows the number of participants in both the test and control groups whose ERS scores increased and decreased (“Fully ready” scores for both groups were removed). Forty-six percent of the test group increased their employment readiness while only 19% in the control group increased theirs.

**Table 4.1 Changes in ERS Scores for IES Research Participants**

	Control	Test
An increase of two levels	2	2
An increase of one level	4	11
No change	23	12
A decrease of one level	2	3
Total	31	28

Logistic regression was used to determine whether or not being in the test group was predictive of experiencing a positive change in a participant’s ERS score. The test was significant ( $p=.0.03$ ) with the group effect coefficient equal to 1.284, ab SE of 0.592; this means that the test group was 3.611 times more likely to experience a positive change in their ERS score.

The ERS also measures sufficiency in relation to a number of sub-scales. The table below shows the number of participants in test and control who moved from insufficient to sufficient for each of the sub-scales.

**Table 4.2 ERS Sub-scales IES Research Participants**

ERS subscales						
		Control		Test		# of participants moving from Not Sufficient to Sufficient
		Pre	Post	Pre	Post	
Career decision-making	Not Sufficient	21	12	13	9	Control: 8
	Sufficient	21	26	27	30	Test: 5
Skills enhancement	Not Sufficient	10	10	6	5	Control: 4
	Sufficient	32	28	34	34	Test: 3
Job search	Not Sufficient	24	21	22	16	Control: 8
	Sufficient	18	17	18	23	Test: 11
Career management	Not Sufficient	26	21	19	18	Control: 7
	Sufficient	16	17	21	21	Test: 6
Self-efficacy	Not Sufficient	11	15	9	9	Control: 0
	Sufficient	31	23	31	30	Test: 5
Outcome expectancy	Not Sufficient	10	13	10	9	Control: 2
	Sufficient	32	25	30	30	Test: 4
Social support	Not Sufficient	22	24	20	16	Control: 4
	Sufficient	20	14	20	23	Test: 7
Work history	Not Sufficient	13	14	11	16	Control: 3
	Sufficient	29	24	29	23	Test: 3
Job maintenance	Not Sufficient	12	14	4	7	Control: 3
	Sufficient	30	24	36	32	Test: 1

The table above shows that higher numbers of participants in the test group moved from not sufficient to sufficient in the following sub-scales: job search, self-efficacy, outcome expectancy and social support. Regression analyses indicated that the training was not predictive of moving from not sufficient to sufficient for any of the ERS sub-scales.

## 4.2 Impact on Job Search Self-Efficacy and Networking

An additional job search self-efficacy scale was used to measure, track and assess the impact of IES. The table below sets out the baseline and follow-up results for these measures, including the mean degree of change for each participant from baseline to 12 months.

**Table 4.3 Job Search Self-Efficacy Levels of IES Research Participants (Individual Items)**

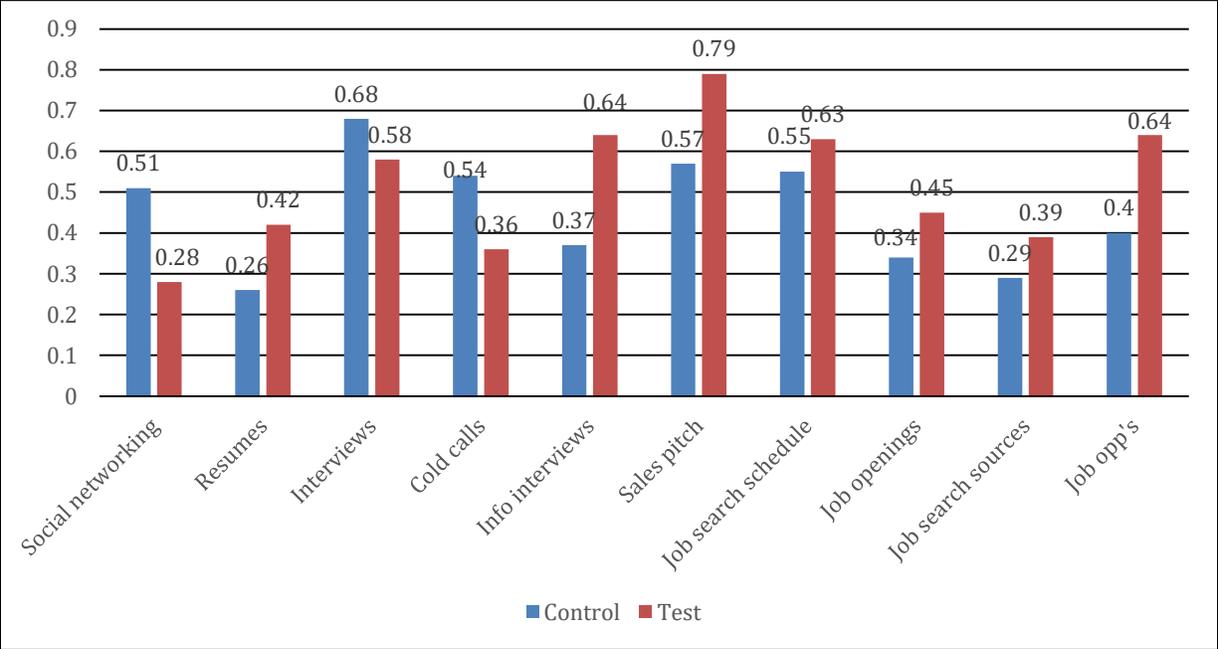
Skill	Timeframe	Control	Test
Social Networks	Baseline	3.29	3.31
	6 months	3.41	3.56
	12 months	3.8	3.64
	Change	0.51	0.28
Resumes	Baseline	3.62	3.4
	6 months	3.59	3.97
	12 months	3.83	3.79
	Change	0.26	0.42
Interviews	Baseline	3.22	3.23
	6 months	3.56	3.68
	12 months	3.83	3.73
	Change	0.68	0.58
Cold calls	Baseline	2.36	2.48
	6 months	2.69	2.62
	12 months	2.74	2.73
	Change	0.54	0.36
Information interviews	Baseline	3.14	2.8
	6 months	3.5	3.18
	12 months	3.51	3.42
	Change	0.37	0.64
Sales pitch	Baseline	2.74	2.73
	6 months	3	3.29
	12 months	3.2	3.42
	Change	0.57	0.79
Plan and organize a weekly job search schedule	Baseline	3.13	3.23
	6 months	3.25	3.68
	12 months	3.71	3.79
	Change	0.55	0.63
Find out where job openings exist	Baseline	3.45	3.6
	6 months	3.53	3.91
	12 months	3.71	4.03
	Change	0.34	0.45
Use a variety of sources to find job opportunities	Baseline	3.5	3.63
	6 months	3.78	3.88
	12 months	3.71	3.97
	Change	0.29	0.39
Search for and find good job opportunities	Baseline	3.29	3.2
	6 months	3.72	3.65
	12 months	3.6	3.85
	Change	0.4	0.64

The table above shows that the test group experienced a greater average increase in confidence for the following sub-scales: resumes, information interviews, sales pitch, planning a job search schedule, finding out where job openings exist, using a variety of sources to find job opportunities and searching for and finding good job opportunities.

*“The program gave me many motivation in different ways...just the confidence in myself and ideas like interviewing structure and resume” (Participant No. 9).*

The figure below compares the test and control groups in relation to the mean degree of change in confidence for each individual for each of the items set out in Table 4.3, from baseline to 12-month follow-up.

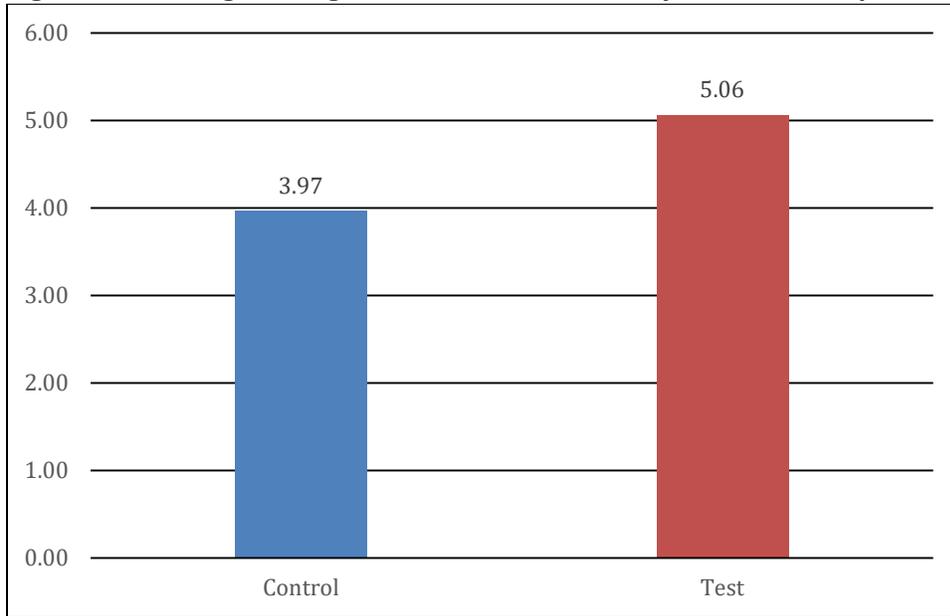
**Figure 4.2 Comparison Test and Control Job Search Self-efficacy (Individual Items)**



The figure above shows that the test group experienced a greater average increase than control for seven out of the 10 items measured through the scale.

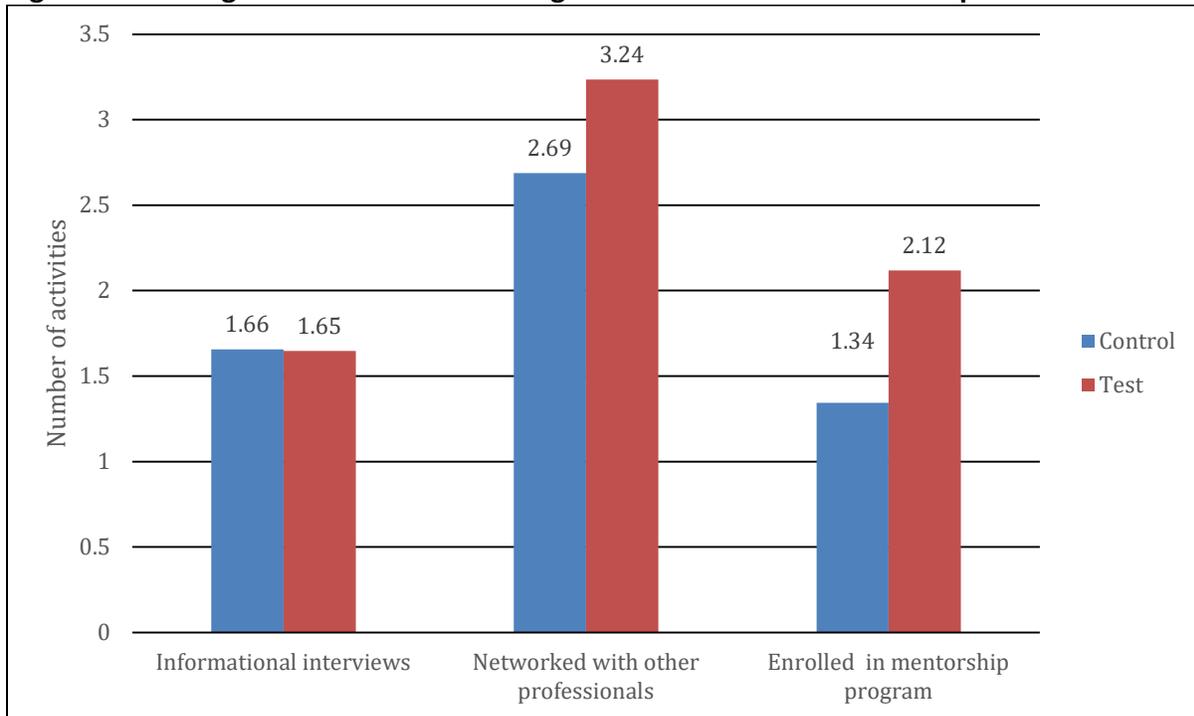
Regression analyses showed no significant impact of the IES training on job search self-efficacy overall or individual job search self-efficacy items. However, the figure below shows that from baseline to 12-month follow-up, the test group experienced a slightly greater average change in total score for job search self-efficacy compared to control.

**Figure 4.3 Average Change Job-Search Self-Efficacy for IES Participants**



Since networking is perceived to be such a significant job search activity for ITPs, the research measured the number of networking activities that participants had engaged in up to six-month follow-up. The figure below shows baseline and follow-up results in relation to the networking frequency measures that were tracked at follow-up.

**Figure 4.4 Average Number of Networking Activities IES Research Participants**



The above graph shows a positive trend in terms of the impact of the IES training on networking activities.

#### 4.2.1 Qualitative Data

In terms of the job search facets of employment readiness described in the literature review, two main impacts of the program on employment readiness were described in some participant interviews. The first was of a general increase in self-confidence or motivation for job searching, “Just that the program gave me many motivation in different ways...just the confidence in myself and ideas like interviewing structure and resume” (Participant No. 9).

The second impact was on networking. Some participants also mentioned they had enhanced networking, particularly with those who participated in their Innovation Training program, “I understood that networking is a very complicated process it is not just being in contact with one person...it was good result for me...that you have to be in different people and in different process with different relationships, it is not so easy” (Participant No. 4).

Participants interviewed were asked to detail how the skills taught during IES were useful or not useful to their job search in Canada. Four of the participants indicated that they had applied the Design Thinking to their job search, “[I have] mostly tried the analysis of the situation, what are my problems what do I need to resolve [using] post-its, how can I solve it...putting it altogether on a plan to get a job” (Participant No. 5). Only one participant reported that a potential employer had noted their participation in the IES program and asked about it. Some participants said that program participation was articulated in one line in their resume.

##### 4.2.1.1 Case Study – Participant No 4

Participant No. 4’s case study can illuminate further the qualitative impact of IES on employment readiness.

Participant 4 moved to Canada from Iran. Prior to arrival around two years ago, this participant was working as an electrical engineer and had 20 years of work experience. He was motivated to participate in the IES program because he had tried other events and workshops to support his to-date unsuccessful job search and wanted new skills and techniques to support his search for employment. This participant found the program very useful, particularly the opportunity to learn about a Canadian company, “I understood all the companies have their own challenges...taught me lots of information about companies.”

In terms of the impact on job search skills, this participant described the way in which the program, “helped me to be more detailed and search in new ways...I understood that networking is a very complicate process, it is not just about being in contact with one person...you have to be in different people and in different process with different relationships.” He also described the impact on workplace skills in terms of the communication that needed to take place in his Innovation Team, “[The] discussions were very useful...in Canada having discussion, having feedback, I have not this experience from my background. [I learned] we have not to be afraid from having discussions, have to talk about everything at first.”

This participant also felt that the main employment challenge that IES helped with was networking. At follow-up he had not yet found a job, although he did report that someone in the IES group had helped him to find an important connection in his field that he is still in contact with and who is continuing to help him with his search. He described that the IES program did not address his main challenge which is lack of Canadian work experience. His main suggestion for improving the program was longer exposure to employers in his field to “help me move closer to the employer.”

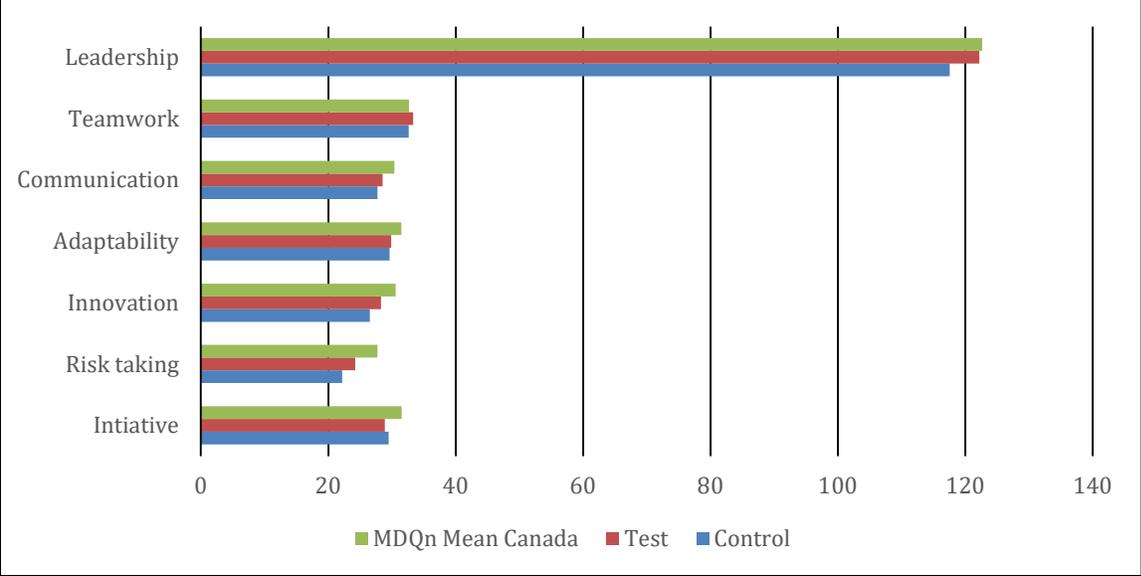
### **4.3 Impact on Workplace Skills**

This section sets out the quantitative and qualitative data relevant to the workplace skills outcomes tracked through the research: innovation, leadership, communication and initiative. Also set out are results relevant to workplace skills such as risk-taking and adaptability since these are considered by the literature to be valuable skills for newcomers to demonstrate in the workplace. Further, results for teamwork skills are also considered since this was an unintended program outcome that emerged through training evaluation data.

#### **4.3.1 Management Development Questionnaire Results (MDQn)**

In order to understand if the program had an impact on workplace skills, participants completed the MDQn before and after the training. The figure below shows the mean pre-test scores of the research participants for each of the competencies measured through the MDQn, compared to the Canadian mean.

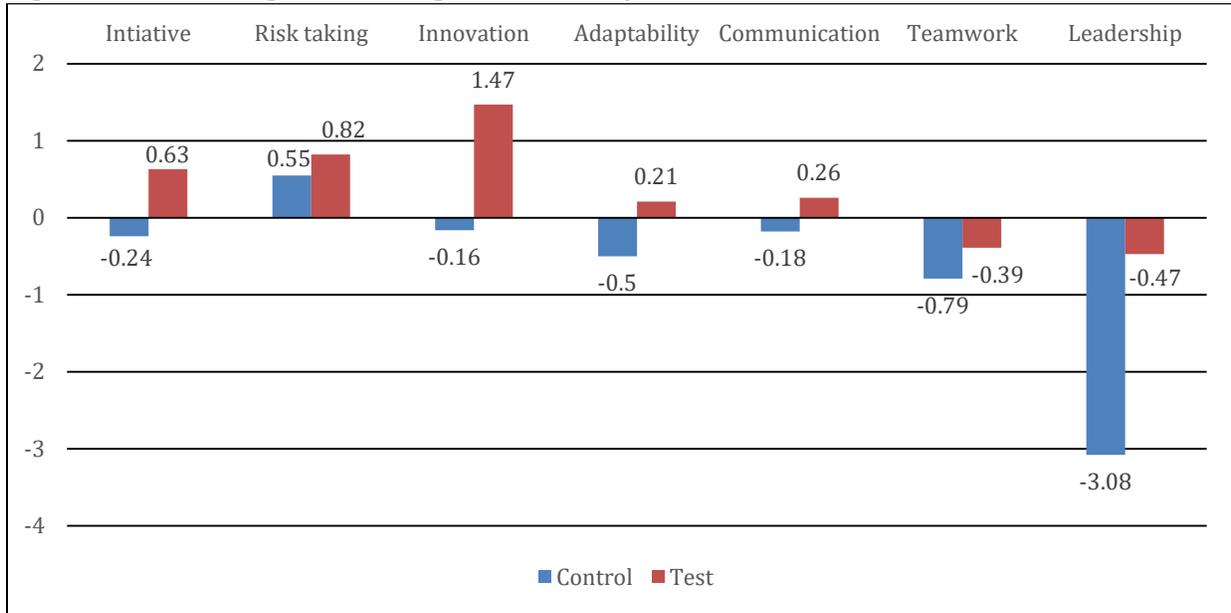
**Figure 4.5 Comparison MDQn Mean Pre-test Scores IES Participants to Canadian Mean**



The figure above shows that, except for teamwork, pre-test scores for the control and test groups were lower than the MDQn means for Canada.<sup>12</sup> The figure below shows the mean degree of change for participants in the test and control groups in relation to each MDQn competency assessed.

<sup>12</sup> Project outcomes do not include the adaptability and teamwork scores. However, these were chosen for analysis as a result of findings from the literature review (for adaptability) and the training evaluation data (teamwork).

**Figure 4.6 Mean Degree of Change MDQn Competencies**



The figure above shows a trend for the scores of those in the test group to increase slightly in relation to each competence, while scores for those in the control decreased. The highest increases in the test group were in relation to innovation (1.47), risk-taking (0.82) and initiative (0.63).

Regression tests were chosen to test the predictive nature of the training on the growth of MDQn competencies (See detailed tables in the appendices). These tests adjust/control for demographic variables and determine predictive value.

*“Before IES I had a good experience about how to work with different nationalities and cultures, after IES I feel very confident about how to work with different cultures. I learned about the body language, identify the culture differences and working well with any team” (Participant No. 8).*

After adjusting for baseline, the training was found to have impacted innovation. On average, those with training scored 1.9 units higher (See detailed regression tables in the appendices). After adjusting for sex, age, years in Canada, education, sector, and years since last job, training also impacted innovation. On average, those with training scored 1.5 units higher.

For almost all of the MDQn constructs (Initiative, Risk taking, Innovation, Adaptability, Teamwork, and Leadership), the baseline score was a significant predictor of degree of change. Those with higher baseline scores were, on average, likely to experience less of a change score (if not negative), regardless of whether or not they received training (see detailed table in appendices).

In other words, those who had a lower baseline score were, on average, likely to experience a higher change score, regardless of whether or not they received training.

Since the literature review proposed a potential relationship between some skills fostered through Design Thinking and employment readiness and job seeking, a series of linear regressions were conducted to determine the relationship between:

- The aggregate ERS measure and the Innovation and Creativity MDQn subscale
- The number of job seeking activities a participant undertakes and the Communication MDQn subscale
- The number of job seeking and networking activities and the Job Search ERS subscale

Analyses showed no significance for any of the relationships set out above.

#### **4.3.1.1 Qualitative Data**

Participant interviews were analyzed to explore the extent to which participants emphasized any of the workplace skills tracked through the MDQn. Reported impacts varied. The main impact described was learning how to work and communicate within teams of people from different backgrounds and cultures, “Before IES I had a good experience about how to work with different nationalities and cultures, after IES I feel very confident about how to work with different cultures. I learned about the body language, identify the culture differences and working well with any team” (Participant No. 8).

The majority of participants interviewed did say that they would use the Design Thinking methodology in their current or future workplaces.

#### **4.3.1.2 Case Study – Participant No. 9**

This case study from Participant No. 9 further illuminates the qualitative impact of IES on workplace skills, as well as job search self-efficacy.

Participant 9 moved to Canada from Korea. Prior to her arrival four years ago, she worked as an Education Counselor. She was attracted to the program because it offered “real company skills, making the presentation, giving them their solution...[and] co-operation with people from different countries.” She found the program very useful, “I am so satisfied with the service the program provided.”

Participant 9 described the impact of the program on job search skills in terms of, “[It] gave me motivation in many ways, just the confidence in myself and ideas like interview structure and resume.” Specifically, the presentation skills learned during the program she attributed directly to attaining employment. At follow-up, she was working as a Student Counsellor at a

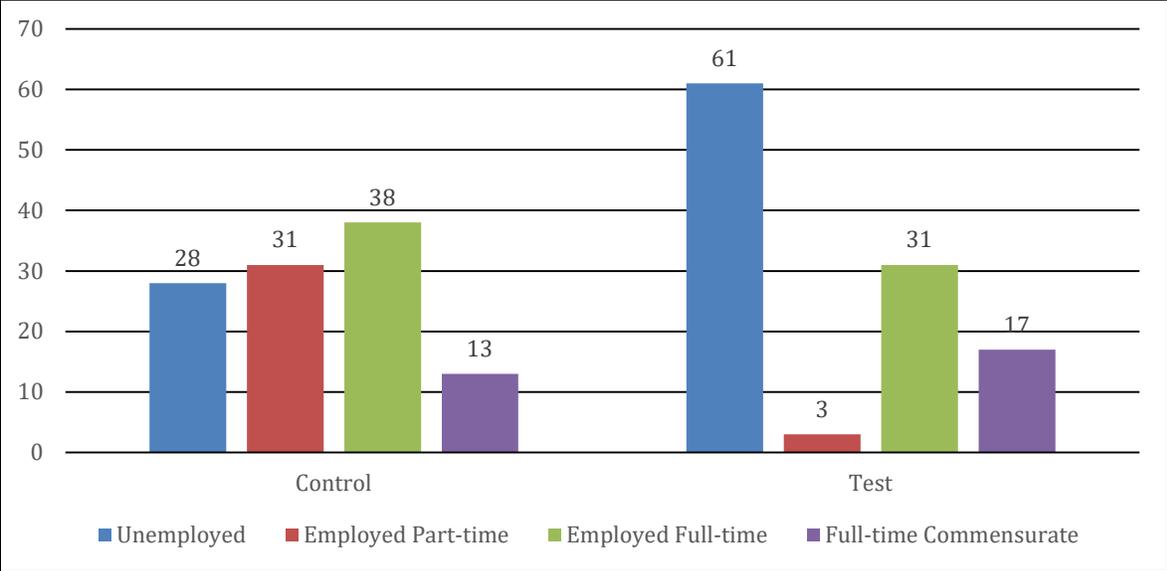
language school. She also described the impact of Design Thinking on her job search in terms of allowing her to make more complex connections between her experience and skills when looking for work.

This participant also described an impact on workplace skills. She reported that the program helped her to develop greater cross-cultural awareness and soft skills for the workplace, which she also thought were the main employment challenges that the program was most effective at helping her with. She described using the teamwork skills gained through the IES program in her current workplace, “[In my workplace], I am the only Korean person so I learn from IES about teamwork, really was motivated by team members at the time, I think I am a good team member.”

#### 4.4 Labour Market Outcomes

The follow-up surveys measured whether or not IES participants had attached to the labour market and if so, if they were in full-time employment that matched their pre-arrival skills and experience. The figure below shows the follow-up employment outcomes at six months.

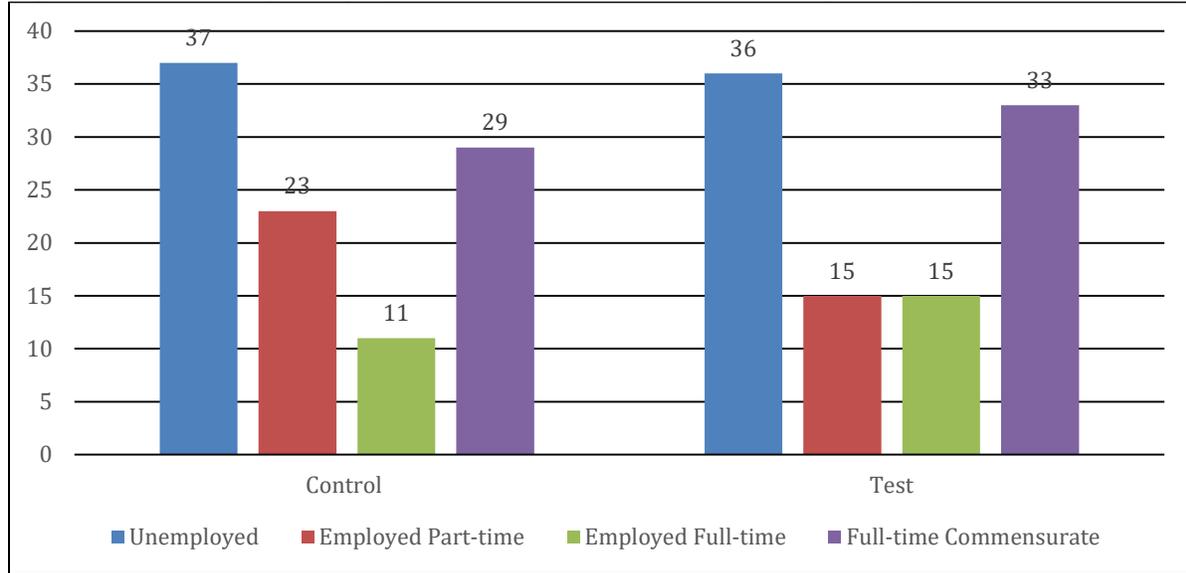
**Figure 4.7 Percentage Employment Status IES Research Participants (6-month follow-up)**



At six months, more test group participants (N=6) than control group participants (N=4) indicated that they were in full-time work that was commensurate with pre-arrival skills and experience. However, logistic regressions showed that the IES program was not a statistically significant predictor of full-time commensurate work.

At 12 months, slightly more of the test group (N=11) than control group participants (N=10) indicated that they were in full-time work that was commensurate with pre-arrival skills and experience. The figure below shows the employment status of IES research participants at 12-month follow-up.

**Figure 4.8 Percentage Employment Status IES Research Participants (12-month follow-up)**



As with the 6-month follow-up, logistic regressions showed that the training was not predictive of full-time commensurate employment.

#### 4.4.1 Profile of Clients Unemployed at 12-month follow-up

Through examination of the data, a profile of those IES participants who remain unemployed or employed in a non-commensurate position at 12 months was created. Upon review of this profile, one can notice the following trends.<sup>13</sup>

Those participants who **have not** obtained commensurate employment after 12 months:

- skew older (41.4 years of age compared to 38.5)
- have lived in Canada for longer (3.5 years compared to 2.2)
- are more likely to be from a visible minority (77% of those who are visible minority did not obtain commensurate employment, compared to 59% of non-visible minorities)

Those participants who **have** obtained commensurate employment after 12 months:

<sup>13</sup> Regressions were used to determine if these trends were significant, and they were not. Even though this statistics are not significant, the trends may still be meaningful to MOSAIC, specifically as they consider intake criteria for the next iteration of IES.

- skew to family class for immigration status (41% of family class participants obtain commensurate employment)
- skew to have graduate school training (46% of those with a Master's Degree or PhD obtain commensurate employment)
- skew to have had Executive Director experience (57% of those with ED experience obtain commensurate employment).

This profile could assist with inclusion criteria for future programs (e.g. focusing on those who are more recent arrivals or have graduate education) as well as thinking about how the model could address factors that appear to affect those who have not obtained commensurate employment (e.g. age-related factors, potential experience of racism as an obstacle to LMA).

## 4.5 Key Findings

This research demonstrates that ITPs participating in the Innovation Program improved their employment readiness and a range of workplace skills. The table below summarizes key findings in relation to each of the proposed impact outcomes for the IES program.

**Table 4.4 IES Impact Results**

	<b>Sub-Scale</b>	<b>Control %</b>	<b>Test %</b>
1. % of test group participants who are rated “sufficient” (at post-test) across the employability skills measured through the Employment Readiness Scale	Career Decision-making	63	79
	Skills Enhancement	68	89
	Job Search	41	61
	Career Management	41	55
	Self-efficacy	56	79
	Outcome Expectancy	61	79
	Work History	59	61
	Job Maintenance	59	84
	2. % of test group participants who decrease their rating of the challenges measured through the Employment Readiness Scale <sup>14</sup>	<ul style="list-style-type: none"> <li>At post-test, 61% of the test group was sufficient in the social support sub-scale compared to 34% in the control</li> </ul>	
3. % of test group participants who demonstrate a measurable improvement in innovation skills, communication, leadership and initiative as measured by the Management Development Questionnaire <sup>15</sup>	<ul style="list-style-type: none"> <li>Training was predictive of an increase in innovation skills. Test group scored 1.5 units higher on average.</li> <li>No measureable improvement for test group participants in leadership</li> <li>Individual mean change score for initiative was 0.63 (-0.24 for control)</li> <li>Individual mean change score for communication was 0.26 (-0.18 for control)</li> </ul>		

<sup>14</sup> Unable to export this data from the dataset due to the proprietary nature of the instrument. Proxy chosen for this outcome were the rates of sufficiency for the ERS social support sub-scale.

<sup>15</sup> During analysis it was decided that a more robust value to demonstrate results in relation to this outcome was the individual mean change score, so that is what is presented in the results table.

4. % of test group participants who entered full employment compared to control	<ul style="list-style-type: none"> <li>• 48% of test group in full employment at follow-up compared to 40% of control</li> </ul>
5. % of test group participants who gain full employment in roles that are commensurate with the skills and qualifications obtained in their respective home countries.	<ul style="list-style-type: none"> <li>• 33% of test in commensurate employment compared to 29% of control</li> </ul>

Additional notable findings about the impact of IES on the employment readiness, workplace skills and labour market attachment of participants are as follows:

- Higher numbers of test group participants when compared to control moved from insufficient to sufficient in the job search, self-efficacy, outcome expectancy and social support sub-scales.
- When compared to the control group, the test group participants experienced a higher average increase in confidence for the following items related to job search self-efficacy: social networks, resumes, information interviews, sales pitch, planning a job search schedule, and how to find existing openings.
- The data shows that the test group engaged slightly more frequently in networking activities than the control group.
- When compared to the MDQn mean scores for Canada, IES research participants did not have initial high scores for ITP skills highlighted in the literature, such as innovation, flexibility and risk-taking. For all competences measured, the pre-test mean scores for the research participants were below the Canadian mean.
- Except for the teamwork, leadership and risk-taking competences in the MDQn, the trend in results for this instrument was an increase in individual mean degree of change for each competence for the test group and a decrease for the control group. This finding represents an overall positive effect of the training on participants' workplace skills.
- The baseline score of participants was a significant predictor of MDQn scores. The lower the baseline the higher the change in score.

## 4.6 Discussion of the Impact of Design Thinking on Employment Readiness, Workplace Skills and Commensurate Employment

This section discusses the literature and research findings for each impact area in turn.

### 4.6.1 Employment Readiness

The IES program was predictive of overall employment readiness for test group participants. It was not predictive of sufficiency in relation to any of the sub-scales of the ERS and no significant relationships were found between the workplace innovation skills tracked and employment readiness. Therefore, it is not clear from the quantitative data exactly how Design Thinking as implemented in the IES program resulted in increased employment readiness. However, consideration of descriptive and qualitative data could further illuminate the theory of change.

IES was positioned as an intervention that could support the development of cultural knowledge, which has been associated with job search clarity and persistence (Guerrero and Rothstein, 2012). More test than control participants became sufficient in the job search sub-scale and experienced a higher average increase in confidence for these job search self-efficacy items: resumes, interviews, sales pitch, planning a job search schedule, finding out where job openings exist, using a variety of sources to find job opportunities and searching for and finding good job opportunities. Quantitative analysis also showed that those in the test group experienced a greater average increase in their overall job search self-efficacy score than in control. Qualitative data validated that participants described how the IES program inspired motivation or confidence in their job searches. Results show some meaningful directions in terms of the impact of an innovation process on newcomer job searches that could potentially be strengthened in future programs.

Many authors note the importance of supporting culturally diverse network development for newcomers, both to protect against deskilling and for access to bridging capital (Fang and Hou, 2013; Elez, 2014). Although not predictive of social support sufficiency, more test than control gained sufficiency in the social support sub-scale of the ERS, and engaged slightly more frequently than the control group in networking activities. Participants interviewed spoke about the importance of developing connections with the other ITPs in the IES Program, suggesting that the program could be further enhanced to embed and develop social support and network development for predictive impact.

The literature review suggested that a Design Thinking training might have particular impact on the career decision-making and job maintenance areas of employment readiness. This relationship was not borne out in this research.

#### 4.6.2 Workplace Skills

The main workplace skills that the IES program sought to foster were oral communication, leadership, innovation and initiative. The program had an impact on innovation skills. The literature posited that newcomers could potentially have high pre-test innovation, risk-taking and adaptability scores due to a psychological agility accrued through the immigration process that non-immigrant colleagues do not have (Friesen, 2011). This finding was not borne out in the research results where pre-test scores for these competences in the MDQn were lower than the Canadian mean. However, the potential for a program such as IES to develop a set of innovation skills desired by and required in the Canadian labour market is clear. As the Conference Board of Canada notes (2010), Canada is not moving as quickly as it needs to in terms of fostering innovation.

The program did not have a statistically significant impact on communication or initiative skills as measured by the MDQn. However, test group participants did experience an increase in the average individual mean change score for each of these competences while the control groups' scores decreased between pre- and post-test. The literature review suggested that Design Thinking could foster these competences through its requirement for participants to: ask questions, express ideas in low power contexts, clarify assumptions, communicate with others who may have communication styles different to their own, and take risks in the prototyping phase.

Of note is the qualitatively articulated impact of the program on teamwork skills with a decrease in individual average mean score between pre and post-test for the test group. While the IES program was not predictive of teamwork skills, these aforementioned findings do raise a question. Why did teamwork skills disimprove given the qualitative emphasis on the importance of learning these through IES? There may have been a subject effect in relation to teamwork whereby participants overestimated these skills at pre-test and then revised their assessment at post-test as a result of what they learned during the program.

The IES program did not have an impact on leadership. The test group individual mean degree of change score decreased between pre- and post-test. Thus, the connection between Design Thinking as a collaborative problem-solving process in a diverse cultural environment contributing to the development of leadership competencies is not borne out in this research (Bender, 2014).

Of note is that the IES research participant pre-test, and many post, mean scores for the MDQn competences measured were lower than the Canadian means. This finding could also point to the value of a program like IES to develop needed workplace skills for ITPs.

### 4.6.3 Commensurate Employment

The IES program was not predictive of commensurate employment for ITP participants although a slightly higher number of test group participants achieved commensurate employment compared to the control group. In addition to employment readiness and the workplace skills named, the main facet of the IES program described in the literature to be supportive of labour market attachment was the opportunity for ITPs to employ and spotlight their professional skills through a real life employer problem. Thus, the program could address ITP psychological internalization of the barrier of finding jobs that make use of their qualifications (Bailey, 2014) and, in part, the need for Canadian experience.

Some findings are of note in relation to this outcome. The first is that a slightly higher amount of test group participants gained sufficiency in the outcome expectancy sub-scale of the ERS than did in the control (although the numbers are very small). Outcome expectancy relates to whether or not an individual expects to achieve their employment outcome and is willing to take ownership over doing so. This finding begs two questions. Do the low commensurate employment rates demonstrate that IES had an impact on participants' expectations for commensurate jobs such that they were waiting until they found them? In terms of research design, is a 12-month follow-up adequate for tracking employment outcomes given the transition penalties faced?

The second notable relevant finding is that some participants said that there were program limitations in relation to addressing the barrier of Canadian experience. This limitation may have had an impact on the commensurate employment rate for the test group.

### 4.6.4 Feasibility

Relevant to the discussion of actual impact of the program is the extent to which IES actually fits the target population or, in other words, is a feasible intervention for this group.

In terms of predicting employment readiness and innovation, and fostering measureable improvements in communication and initiative, this program fits ITPs. However, in its current form, it is not feasible to assist ITPs to gain commensurate employment within a 12-month follow-up period. The occupational profile of the group and the labour market context for some of these occupations may offer some insight for strengthening fit. Also useful is the profile of those who have and have not found commensurate employment by 12-month follow-up.

Many of the participants were engineers, HR and business development professionals and accountants. HR and business development professionals are in-demand occupations for

whom foreign work experience recognition rates are low and who struggle to gain Canadian work experience despite few regulatory limitations on working in Canada upon arrival.

Since most of the ITPs attracted to the program were represented in these occupations, it may be likely that these are the ITPs that could be targeted in future programs, given labour market demand. If so, the program would need to be strengthened to truly address the barrier of Canadian work experience for these professionals. It may be that many of the engineers in the program who were not yet accredited were hoping that the IES program could help them to address the Canadian experience double-bind. Although a regulated profession, unaccredited engineers can be employed in their field in order to gain Canadian experience required for licensure as long as they are supervised by someone with a P.Eng designation. Thus, they were not facing the regulatory barriers to full-employment in their field traditionally faced by ITPs in other regulated professions, such as doctors and nurses.

Of note is that age and visible minority status appear to play a role in whether or not participants have achieved commensurate employment at 12 months, as does being in Canada longer than two years. These are entrenched LMA barriers for newcomers repeatedly identified in the literature which this model could usefully take into account in future iterations.

## 5 Innovating for Employment Success and Employment Services for Internationally Trained Professionals

This chapter considers themes emerging from key informant, participant and MOSAIC staff interviews that are relevant to the sustainability of IES delivery through the EPBC, as well as factors that need to be considered for integration of the program within the model. Also considered is how learning from the project could inform MOSAIC services, the EPBC and other newcomer employment services.

### 5.1 Employment Services Tailored to Internationally Trained Professionals

One theme noted frequently in the qualitative data was the potential of a program such as IES to augment services for ITPs, both within the EPBC and generally:

*It's a very interesting add on... certainly now in the current WorkBC model [there are] not a lot of specialized services for ITPs...it is Canadian work experience in a professional environment. Getting that first professional job is one of the biggest hurdles. [ITPs] can get survival jobs but it doesn't help further your career [such as] an engineer working on an engineering project (Key Informant No. 2).*

In particular, it was noted by some that the program model offered the opportunity for a more “profound way of learning about workplace culture, teamwork, communication,” (MOSAIC staff). A key informant described the potential of the IES model:

*Any other program that I have seen for ITPs has been limited [such as] for providing funding for...skills upgrading, job search skills. Mostly the approach has been this is the right way to do it...otherwise you won't succeed. [I am] not sure how successful this [approach] has been...it needs to come from within...we see some people it takes them years and years to be able to make a cold call...[they see it] as asking for a job [it is] in total contrast with their sense of pride... a program that is touching this from inside and going to the roots of it. A program like this (IES) can fill in that gap (Key Informant No. 1).*

The main advantages of having IES at a WorkBC Centre described by test group participants interviewed were a real life connection to the Canadian work environment, the opportunity to connect with other newcomers and learning teamwork.

## 5.2 Potential for Enhanced Employer Relationships

Some of those interviewed noted the potential of a program such as IES to involve employers in the EPBC in different types of connections to what currently exists, “[The advantage is] as a concept that the ESCs would offer more tailored programming...that involves connection to employers. Currently the services are not sufficient to meet the specific employability needs [of ITPs]. They don’t have the employment supports that attract enough involvement from employers” (Key Informant No. 1).

A few of those interviewed did remark on the challenge of engaging employers in terms of ESC staff having the capacity to work with them in relation to problem definition for a Design Thinking process, and engaging businesses in something other than, for example, the traditional presentation to a group of job seekers or the hosting of a hiring event.

## 5.3 Difficult to fit into an EPBC Service Category

Most of the key informants interviewed indicated that they were not sure what service category a program such as IES would fit within, or did not think they had the knowledge to make that recommendation. One cautioned about trying to fit the model under one category, “In order to fund this adequately [it] would have to cut across categories...nothing in EPBC other than SDEB applications, STOC training and that’s not delivered by ESCs...so trying to fit it into an existing category is a red herring... folks need to be in session for that duration [so] watering it down to a shorter timeframe (series of ESS workshops) doesn’t make any sense” (Key Informant No. 2).

*“[The advantage is] as a concept that the ESCs would offer more tailored programming...that involves connection to employers. Currently the services are not sufficient to meet the specific employability needs [of ITPs]. They don’t have the employment supports that attract enough involvement from employers” (Key Informant No. 1).*

Two of those interviewed specified that it could potentially be funded as an Employment Support Service (ESS) within Case Managed services as this was perceived as being the most flexible billable. Two of the key informants said they saw a fit between IES and Skills Connect, “[It would be] a fantastic fit to Skills Connect, a natural extension of a program like that” (Key Informant, No. 4).

## 5.4 Not for Every WorkBC Centre

A main message from key informant interviews was that a program such as IES could not be run in every WorkBC Centre, because not every locale would have sufficient numbers of ITPs or the labour market demand to make it sustainable, “Rather than a straight up endorsement to EPBC [you would need] to take a careful look at the population and demographics and look

to implement in communities that have these needs and match that with a labour market demand that would support this type of programming” (Key Informant No. 1).

Also, some key informants said that the program was probably best provided by ESCs, or through referral to ISOs, that had expertise in providing services to ITPs, “This case was offered by MOSAIC and MOSAIC has a history of working with immigrants [it was] involved in Skills Connect...keeping it that way I feel more confident that an organization with a focus on immigrant services is providing this...if it gets attached to WorkBC...one of so many [it] would not receive the attention that it actually really requires” (Key Informant No. 3).

## 5.5 Integrate into MOSAIC Services

Most of the key informants said that, regardless of whether or not IES was funded again, it would be important for MOSAIC to examine how it could embed the learning from the program into their existing services, “take a look at how some of the key success factors could be embedded in current employment services” (Key Informant No. 4).

## 5.6 Key Findings

The key findings from the data presented in this chapter are:

- The IES was perceived to offer a more targeted, innovative, profound means by which to provide ITPs with the necessary Canadian workplace skills for the labour market.
- Data suggested that the model had the potential to strengthen the following aspects of EPBC services: services for ITPs, real life connection to employers and teamwork skills.
- The main opinion was that IES provided a way of enhancing the model in terms of employer relationships.
- There was no common EPBC service category identified for IES amongst key informants as it was perceived to cut across categories. Some identified a fit for IES within a program similar to Skills Connect.
- From the data, it would appear that the model would need to be provided in a geographic area where there was sufficient labour market and client demand, by an organization that already has demonstrable capacity to provide services to newcomers.

## 5.7 Discussion of Sustainability of IES within EPBC or other Programs

Sustainability refers to the potential of the IES to be continued within the context of EPBC service provision. The results suggest that it could be delivered through the model as a way to implement already existing services and target ITPs as well as enriching other aspects of EPBC service provision. Findings show that the program cuts across service categories, although no clear sense of which categories emerged save for some billing to happen through case managed services in the context of ESS workshops. The main suggestion was that only WorkBC Centres with newcomer employment service competences in geographical areas with sufficient newcomers and labour market demand should implement the model.

Further investigation would be required to delineate a business case for an individual WorkBC Centre to implement the model. It is likely that a fine-tuned model, implemented by one WorkBC Centre in an appropriate geographical area could offer a useful case study to further validate the impact of an innovation training program on ITPs in British Columbia.

Notable were some key informants suggestion that they saw a fit between IES and a program such as Skills Connect. It is not clear what the model for the next version of this program will be although a call is scheduled for summer 2016. There may be opportunities for MOSAIC, or other ISOs, to explore if the IES model could fit into the new program set to succeed Skills Connect.

## 6 Conclusions and Recommendations

The research suggests that the role of the IES model in addressing the transition penalty experienced by ITPs is to facilitate more rapid development of: employment readiness; workplace innovation, initiative and communication skills; culturally and professionally diverse networks, and job search self-efficacy.

The key labour market challenge that participants experienced and one that the program, in part, was meant to address was the need for Canadian work experience. The role of the current IES model in addressing this challenge is limited, but could potentially be strengthened through a demand-led approach targeting, for instance, the occupations chiefly represented in the research sample. It could also be strengthened through increased exposure to employers, which was also supported by employers themselves.

However, the IES model does foster the improvement in a set of workplace skills that ITPs in this research could benefit from, given initial mean scores below the Canadian mean. The program had a statistically significant impact on innovation skills and the employment readiness of IES participants. It fostered measurable improvements in the initiative, risk-taking, adaptability and communication skills of IES participants. Given the fact that lower baseline scores were predictive of greater gains in workplace skills, it could potentially have greater impact on those ITPs for whom baseline MDQn competency or employment readiness scores are below Canadian mean or insufficient. The IES program could benefit from an intentional focus on the development of teamwork skills since this was a qualitative unintended outcome.

The main conclusions from this research are not generalizable to the general population of ITPs due to small sample size and the representation of professions among participants. However, we can see meaningful directions for many of the outcomes tracked for this demonstration project, suggesting that the model has promise and could merit further investigation of the impact of a fine-tuned model on a larger number of ITPs.

A fine-tuned model could have an impact on commensurate employment. Alternatively, given the heavy transition penalties faced by the ITPs, the follow-up period may have been too short to realize the commensurate employment outcome. Additionally, there may have been a delay effect due to test participants deciding, as a result of confidence gained and the opportunities to use their professional skills, to hold out until they found a commensurate job. As well, test group participants were not concentrating on job searching for the month they were in the Innovation Program.

The key lessons learned from the design and delivery of the IES program are related to: enhancement of participant and employer matching; ensuring that the job search skills

fostered are at an even more advanced level than what was offered; reviewing how individuals are assisted to ensure that the use of professional and workplace skills developed are spotlighted and leveraged in their job searches; a more intentional emphasis on the improvement of teamwork skills, and a re-design of marketing collateral.

Key informants perceived that the IES program was aligned to EPBC services and could fit existing billables, but that it cuts across service categories and likely could not be implemented in every ESC. The factors that need to be considered in implementing the program at the ESC level are: existing competences in delivering employment services to newcomers and sufficient local demand for the program. Interestingly, there could be a potential fit between the IES model and the successor to Skills Connect.

In summary, it would appear that the IES model and this research further illuminates opportunities to intensify the response to ITP's in service provision within the EPBC and more generally in BC. It also presents a model that has the potential to foster rapid improvement of skills required for labour market attachment in Canada. The research also highlights the continuing, persistent barrier of Canadian experience for ITPs and ways in which to enhance the model to address this facet of the ITP transition penalty.

## 6.1 Recommendations

The main recommendations emerging from this research are to:

- Fine-tune the model to incorporate a demand-led approach, potentially targeting one or two of the in-demand occupations heavily represented in this research and increasing the frequency of employer connections throughout the innovation process. Carry out follow-up to track employment outcomes at 18 months.
- Explore the level of occupational diversity necessary for innovation teams to facilitate better matching of participants to employers, i.e. engineers working with employers who have engineering problems. Potentially, explore if occupational diversity could entail professionals and non-professionals, but in similar occupational groups, or different types of engineers.
- Target employers who have innovation as part of their business strategy and are in need of employees in targeted occupations.
- Fine tune training content to strengthen the development of teamwork, communication, initiative, risk-taking and adaptability skills. For instance, rather than separating the Canadian Workplace and Design Thinking modules, pursue the Design Thinking to look for opportunities to develop the named skills and then take time out of the Design Thinking content to “dive” into activities relevant to skills development. Thus, the Design Thinking phase would be lengthened with a potential increase in the initial stages of the process, reinforcing participative safety and the opportunity to learn and demonstrate CQ.

- Re-design the marketing collateral to reflect the problems and benefits perceived by stakeholders to be more relevant for employers and participants.
- Revise Week Four of the model to ensure the job search skills offered are very advanced, that participants demonstrate how they have applied innovation thinking to their job search plans, and have prepared a portfolio to validate how they used their professional skills within the IES program.
- To build on this work, design a Phase II of the IES program involving a larger sample, with an emphasis on implementation, to examine the impact of a fine-tuned IES model on the employment readiness, workplace skills and commensurate employment rates for targeted occupations within a geographical area where there is sufficient local demand.
- Consider how the content and delivery of the model could address identified barriers for those participants who still did not have commensurate employment at 12-month follow-up. These barriers include being: over 40, of visible minority status and/or being in country for more than two years.

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## Appendix A – Detailed Literature Review

This review sets out a brief consideration of Design Thinking/innovation thinking methodology and considerations for facilitating innovation in culturally diverse groups. It also considers the crossover between individual level skills cultivated through Design Thinking and those that can be leveraged by internationally trained immigrant professionals (ITPs) and utilized for Canadian labour market integration. Using the framework of employment readiness employed in the Employment Readiness Scale the review also reflects on some specific employment challenges for ITPs in each dimension and hypothesizes about how innovation thinking skills could address those challenges.

### A.1 Design Thinking

Design Thinking, or innovation thinking, is not new and has its roots in a division of attitudes during the Industrial Revolution about how to develop new products and buildings (Lockwood, 2009). In the first camp were those who believed that business processes required standardization and “quantitatively driven management” (Ibid.). In the second camp, the Arts and Crafts movement reacted by focusing on what would create a quality experience and product for the consumer. The latter has evolved, over time, into “a human-centred innovation process that emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping and concurrent business analysis, which ultimately influences innovation and business strategy” (Ibid.).

In recent times, Design Thinking methodology has been embraced across a number of disciplines - outside those considered to already be design-oriented sectors – as academics and industry leaders have found that the problems faced in today’s world cannot be solved by the techno-rational approach taken by the first camp above. For instance, Design Thinking has taken prominence as a methodology for thinking about sustainability issues (Brown and Wyatt, 2010) and as a process to drive social innovation (Fleischmann, 2013). The business and management literature also has many examples of applications of Design Thinking to business leadership and brand development (see for instance, Bouchard and Forno, 2012; Lockwood, 2009 and Tkaczyk, 2014).

Design Thinking is conceptualized as a way to foster innovation competence in staff and organizations so that they can address what are known as “wicked problems” or “problems so persistent, pervasive and slippery that they seem insoluble ... [that] shift disconcertingly with every attempt to solve them” (Neumeier, 2009). Solving these types of problems requires constructions of concepts like knowledge, identities and sense-making different to those employed in traditional linear problem-solving methodology. Traditional problem solving celebrates rationality, is theory-guided and relies on verbal interactions to process information, whereas Design Thinking celebrates creativity, reflection-in-action thinking and

visual communication (Rylander, 2009). While a number of methods can be employed as part of the Design Thinking process, their power is in how they draw together multi-disciplinary teams in a process of collaboration that goes beyond what many consider to be the narrow form of teamwork taught in Masters of Business Administration programs, for instance (Dunne and Martin, 2006).

Rylander (2009) asserts that the role of the innovation economy is an important discourse in management literature and practice, particularly in light of the increasing position of knowledge workers. The intractable nature of the many problems facing business and other sectors has even resulted in an OECD focus on the promotion of innovation skills in higher education. Of note for this review is the learning environment that the OECD asserts is optimal for learning key skills associated with innovation. Environments have to be created that allow “students to make sense of what they learn and process content *deeply* so that they can apply their understanding to solve problems” (OECD 2014:18).

Educational institutions and organizations have responded to the need for innovation competence by creating Design Thinking (or innovation) programs and services, including: the international design and consulting firm IDEO; the “d-studio” course at Sauder School of Business at UBC; Harvard Business School and the Institute of Design at Stanford Business School. These programs have also been set up in response to industry demands to emulate innovative companies such as Apple and Sony (Borja de Mozota, 2009).

## Design Thinking Methodology

A detailed consideration of all the methods that can be employed in Design Thinking is beyond the scope of this scan. However, they can be broken down according to the following phases for collaboration during Design Thinking resulting in an iterative, rather than linear process:

1. Developing a deep understanding or empathy with the user/customer through exploration of the target audience using methods such as: user camera, interviews, determining extreme users, empathy map.
2. Defining the problem to be addressed through: point of view analogy or want ad, critical reading checklist.
3. Ideating solutions to the problem by doing bodystorm, free drawing, free write, How Might We, ranking and visualization.
4. Rapidly prototyping and trying solutions through concept mapping, dotmocracy, open space or World Cafe, Constraints Toggle, or user-driven prototypes.
5. Testing prototypes by role playing, observing the user or feedback capture. (For a description of all these methods see d.school, 2010 or dstudio.ubc.ca.)

Design Thinking places emphasis on visual communication, using pictures to speak during each phase; collaboration with users and the establishment of multidisciplinary teams.

## A.2. Innovation and Cultural Diversity

At the macro level, the literature supports the importance of cultural diversity and labour mobility for innovation. A recent US survey showed that 30% of lead inventors in the country were non-U.S. born (No and Walsh, 2010), underlining the importance of ensuring that immigrants do not experience barriers to enhancing the competitiveness of the innovation economy. Niebuhr (2009) concurs, saying that the “heterogeneity of people is important for the creation of new ideas,” concluding that in Germany, ethnic diversity has a positive association with the research and development sectors in those regions where it is greatest (566). The Conference Board of Canada (2010) reports that Canada is not keeping pace with many other countries in terms of productivity and innovation and asserts that immigration and increasing ethnic diversity are central to improving its position in relation to these processes. This research concluded that, in research and business, immigrants are enhancing innovation in Canada.

At the organizational level, workplace diversity has been linked to innovation competence (Lu et al., 2013). The authors report, “If managed properly, ethnic diversity may facilitate creativity, innovation, problem-solving and decision-making through the different resources, experiences, networks, ideas, attitudes and skills the individual brings to the organization” (Ibid.:207). Malik et al. (2014) discuss the role of cultural intelligence for recent immigrant newcomers. Cultural intelligence is defined as “a system of interacting knowledge and skills that allows people to adapt to, select and shape the cultural aspects of their environment” (Ibid.:196). The authors contend that some recent immigrant newcomers display high cultural intelligence ensuring that they are well-equipped to better comprehend and participate in cross-cultural settings. Thus, there could be scope for innovation thinking to provide a platform for internationally-trained immigrants to display how they could contribute to the cultural intelligence of an organization and how diversity can be managed successfully for innovation.

However, the literature does scope the need to manage diversity as it can cause conflict and potentially slow down innovation. West (2014) reports that cognitive and skills diversity is a requirement for the collaborative creativity necessary to group innovation. Culturally and ethnically diverse groups will automatically ensure cognitive diversity as they bring new ideas, attitudes and experiences from a variety of cultural milieus. The Conference Board of Canada (2010) proposes that ethnically and culturally diverse groups produce better value ideas during brainstorming .

A key challenge is fostering participative safety to bring out the diversity of the group and nurturing work flow (Ibid.). Differences related to cultural values and communication can cause conflicts in diverse innovation groups negatively affecting group cohesion, performance expectations and positive attitudes in the group as a whole (Winkler and Bouncken, 2011). The literature review suggests that diversity management needs to be intensive in the initial stages of the innovation process, lessening over time. For instance, it is recommended that

brainstorming techniques allowing every individual to offer an idea (i.e. nominal versus group brainstorming) would be most effective (West, 2014; Winkler and Bouncken, 2011).

Winkler and Bouncken (2011) further suggest that those putting together innovation groups should avoid high degrees of power distance diversity (high/low). The authors indicate that cultural diversity in relation to time use (polychronic/monochronic) and need for communication context (high/low) will slow down the innovation process, but that groups will eventually adapt. Moreover, this diversity will result in rich cultural learning. Both West (2014) and Winkler and Bouncken (2011) conclude that where groups are diverse, initial phases of the innovation process should be lengthened so that the group can achieve participative safety and adapt to any differences. Malik et al. (2013) recommend a cultural intelligence assessment of newcomers to assist workplace integration planning. This conclusion suggests that such an assessment could be valuable prior to an innovation process involving internationally-trained professionals (ITPs) from diverse cultures and ethnicities.

Despite these cautions, Niehbuhr (2009) concludes that “the benefits of diversity seem to outweigh the costs caused, for example, by communication barriers” (563). In fact, fostering and managing diversity in teams is essential. Winkler and Bouncken (2011) find that 85% of senior managers indicated that the majority of their work happens through global innovation teams that must take into account the requirements of international customers. Thus, this project was posited as a valuable example for ITP resumes as to how they have contributed to diverse innovation teams, an essential experience for the current labour market.

### **A.3 Design Thinking and ITP Skills**

No empirical research could be found which demonstrates the individual competences Design Thinking fosters using validated assessments. However, the literature scopes a range of skill sets developed through Design Thinking, which, due to the popularity of the methodology in business and education, may be viewed as desirable employability skills within the Canadian and BC labour market. The skill sets named include: innovation, creativity, persistence, empathy, abductive thinking (the logic of what might be), collaboration, persuasion, visual communication, integrative thinking, detail orientation, open-mindedness, leadership, systems thinking, flexibility, experimentation, taking risks and making mistakes (d.school, 2010; Dunne and Martin, 2006; Hoidn and Karrkainen, 2014; Lockwood, 2009).

The value of involving internationally trained professionals in Design Thinking may emerge from the skill sets it fosters and the intersection between some of them and the ITP literature. For instance, all the skills named above are considered to be skills for professional development (See for instance, the Management Development Questionnaire - MDQn, Cameron, 2009). Participation in the learning and application of innovation thinking would seem to offer the opportunity to demonstrate and/or enhance professional skills that could be highlighted in the Canadian job seeking process.

The main skills measured through the IES project were oral communication, leadership, innovation and initiative. This section reflects on what the literature says about these skills for ITPs and the potential association between them and the Design Thinking approach.

## Communication

Communication is consistently documented as an employment barrier for immigrants due to lack of language ability and confidence in using English (For instance, see Rai, 2013). Design Thinking methodology offers the opportunity to showcase internationally trained professionals' talents via the other forms of communication necessary to the process, such as visual communication. The innovation process itself facilitates the development of spoken communication through discussion of prototypes (West, 2014). Mahmud et al. (2014) report that employers consistently identify newcomer engineers' need to learn how to ask questions for clarification. Many of the methods employed in Design Thinking necessitate asking and answering questions about client needs and underlying assumptions, scoping a relationship between this methodology and improvement of interpretive communication skills for ITPs. Guerrero and Rothstein (2012) propose a relationship between language fluency and job search clarity suggesting that improvements in oral communication skills as a result of the project could assist this aspect of employment readiness.

As previously indicated, Design Thinking fosters persuasiveness so there could be a positive relationship between involvement in this study and an increase in participants' persuasiveness within the English language.

Moreover, Malik et al. (2013) report that cultural metacognition, or the level of a person's sensitivity to and capacity for adjusting behaviour appropriately, is a skill that some newcomers possess above and beyond their non-newcomer colleagues. Similarly, Ho and Bauder (2012) describe the identity capital possessed by immigrants, or the competences that they can use strategically to present themselves in multicultural settings to their advantage. Given that this project involved culturally diverse innovation groups, it was a potential opportunity for ITPs to highlight this strength.

## Innovation

Research has documented that employers highlight adaptability, flexibility and risk-taking as strengths that skilled immigrants demonstrate in the workplace due to the experience of immigration and settlement (Amundson et al, 2011; Freisen and Ingram, 2013). Friesen (2011) reports that employers often describe that immigrant professional employees are in possession of a psychological agility higher than that non-immigrant colleagues.

West (2014) describes dynamic expertise as an individual characteristic that leads to

innovation potential. This quality is defined as the capacity to “learn and surpass earlier achievements by living on the edge” (56). This characteristic would appear to be synonymous with the ITP strengths identified. In a recent report, the Conference Board of Canada (2010) indicates that since the process of immigration is risky, immigrants may be better risk-takers, “As new challenges present themselves, immigrants – heavy with power motivation – are able to draw on their inherent willingness to try more things” (5).

Hakak et al. (2009) report that those Latin American ITPs who are successful in the labour market in Canada learn to identify and articulate sources of competitive advantage not demonstrated by Canadians. The innovation skills attributed to ITPs through the literature could be demonstrated through this study, empowering participants to identify and articulate the value of those skills to Canadian employers. It follows that participants in this study could have high innovation, flexibility, and risk-taking skill scores prior to the intervention (as measured through the MDQn from Cameron) with further improvement post the Design Thinking training.

## Initiative

Design Thinking fosters and values use of initiative, self-direction and equal participation. However, the literature does posit a challenge for some newcomers in using initiative as it relates to deference to power and authority. Fraser and Ingram (2014) discuss the challenges that face internationally-trained engineers from South America and Asia when they transition from labour markets in highly hierarchical cultures to “low power distance” cultures like Canada which value “minimal instruction and ongoing guidance.” They further assert, “Canada is generally considered an environment of low power distance, high individualism, risk tolerance and low context. The majority of Canada’s immigrants come from countries [with workplaces] of significant high power distance, high collectivism, risk aversion and high context” (Foster and Ingram, 2014: 221).

Given the emphasis in Design Thinking on expressing ideas and giving feedback within a group where each member’s role is valued equally and diversity is valued, there was potential for ITP participants to learn how to operate in low power distance work environments to use initiative, while allowing them to leverage a collectivistic orientation to the collaboration essential to the innovation process. Thus, there could be an increase in initiative skills as a result of the intervention.

## Leadership

Malik et al. (2013) describe how the role of newcomer cultural intelligence is often ignored in relation to workplace socialization. Their study finds that cultural intelligence is related to leadership. Thus, there was potential for ITPs in this study to use their cultural intelligence (CQ) in an innovation process for leadership development.

The Management Development Questionnaire (Cameron, 2004) sets out the personal leadership competencies necessary for overall leadership development. Two that are particularly relevant to ITPs are motivating others and developing people.

In relation to motivating others, Bender (2014) finds that there is a significant relationship between project management competencies and the dimensions of cultural intelligence, specifically motivational CQ or, “an individual’s ability to direct and commit one’s energy to problem-solving in a particularly diverse cultural environment” (2014).

West (2014) notes that a central aspect of collaborative creativity is the giving and receiving of criticism. It follows that an innovation training could facilitate ITPs’ people development skills in relation to giving feedback in a leadership context, as well as helping them to use CQ to motivate others, resulting in leadership skill improvement.

#### **A.4 Employment Readiness and ITPs**

This project utilizes the Employment Readiness Scale as a tool to measure change in employment readiness for ITPs at pre- and post-test of the intervention (Valerie G. Ward Consulting Ltd/ Service Growth Consultants Ltd, 2002). The ERS conceives employment readiness as completion of three interrelated goals, set out below. This section hones in on the intersection between specific challenges ITPs face in relation to each of those goals and how training in Design Thinking might help them to reach each one.

##### **Self-Sufficiency**

Valerie G. Ward Consulting Ltd/ Service Growth Consultants Ltd (2002) describe this goal as attaining self-sufficiency in career decision-making, skills enhancement, job search, job maintenance and ongoing career management.

Relevant to career decision-making and skills enhancement, lack of recognition of foreign qualifications and work experience is one of the top three employment barriers for newcomers to Canada (Rai, 2013). According to Statistics Canada, regardless of when immigrants land in Canada, there is a higher proportion of individuals who are over-qualified for their jobs than Canadian-born individuals. In 2008, 42% of immigrant workers aged 25 to 54 were overqualified for their work compared to 28% of Canadian born workers.

The Western Settlement Outcomes Survey from June 2013 found that half of the immigrants in British Columbia found it difficult to find a job in BC that made use of their qualifications. One quarter of those found it to be “extremely difficult.” Plante (2010) found that as of Census 2006, only one in five internationally educated immigrants to Canada was working in

the best corresponding occupation to their qualifications. There are similar findings in the BC context (Hiebert and Sherell, 2009).

A study for MOSAIC carried out by Bailey (2014) demonstrated that newcomer participants had internalized this barrier and were aware that they would not be able to achieve labour market attachment (LMA) consistent with skills and experience pre-arrival. While there are structural challenges to overcoming this obstacle (reflected on below), this study holds the potential to facilitate a stronger commitment to achieving LMA that is aligned to ITPs' skill sets in the face of such adversity. The Design Thinking process in this program relied upon the professional skills that participants brought to the innovation process. It was also meant to, in part, facilitate Canadian experience in utilization of those skills and participant recognition that they have the skills to find the work they want. Thus, it holds the potential to support higher rates of sufficiency in career decision-making and skills enhancement for the test group compared to the control group.

The literature reports that newcomers experience barriers to their job search because they lack local capital such as relevant labour market information and job search resources (Zikic et al, 2010; Rai, 2013). By working in groups with other ITPs who may be at different stages of their job search, this intervention could allow for transfer of local capital that participants have accrued. Moreover, the connection to an employer sponsor may also assist with participants' job searches as they learn about different companies through their projects.

Guerrero and Rothstein (2012) found that accrual of cultural knowledge was positively associated with job search clarity, which in turn was related to job search intensity, or persistence. Cultural knowledge is defined as awareness of cultural differences and how culture shapes behaviour. As described above, innovation groups can learn to adapt to cultural and ethnic differences resulting in rich cultural learning and, it follows, cultural knowledge. Thus, this intervention explored if involvement in an innovation process like Design Thinking resulted in greater job search clarity and intensity for the test group compared to the control. Given the literature presented on communication skills and Design Thinking, this study also explored if there was an association between oral communication skills and job search sufficiency, as well as the rate of engagement in job seeking activities.

In turn, Design Thinking could also help address the key job maintenance barrier faced by ITPs in relation to internalizing "codes of conduct within the Canadian workplace...[which becomes] a cultural means of distinction between Canadian job applicants and immigrant job seekers" (Bauder, 2005). This challenge was described above as one of ITPs learning how to operate in low power distance workplaces.

IES was envisioned as an experiential, collaborative simulation of the Canadian workplace using a real world business problem provided by employer sponsors. This project tested whether or not a deep process of problem-solving within the Canadian context could have the potential to assist the target group to rapidly internalize Canadian workplace norms and contribute to self-sufficiency in job maintenance. If this was the case, then the rates of

sufficiency in relation to job maintenance would be higher in the test group post-intervention than in the control group.

### **Understanding the Employment Challenges Faced**

The second goal to be realized for employment readiness relates to an ITP's awareness of the personal, environmental and systemic challenges that need to be addressed for LMA (Valerie G. Ward Consulting Ltd/ Service Growth Consultants Ltd, 2002).

A key personal challenge for newcomers is language proficiency (Bailey, 2014; Rai, 2013). Connected to this challenge is that of interpersonal and interpretive communication, highlighted for ITPs in the literature, such as knowing how to communicate depending on whether or not someone is a high or low context communicator (Fraser and Ingram, 2013). Mahmud et al. (2014) report that employers value confidence, tact, fluency and interaction above language proficiency. As indicated in the section above on diversity in innovation groups, members of groups who differ in relation to the amount of context required to communicate effectively have the potential for adaptation to these differences and to make gains in their communication ability through the innovation process. Involvement in a Design Thinking group may have allowed members of the test group to better understand the interpersonal communication gaps they face and foster those skills. The literature suggests that the data analysis should examine if there is an association between oral communication and innovation skills for the study participants and if there are differences in this association between the test and control groups.

### **Coping Effectively with Stress Drawing on Four Sources of Support**

This employment readiness goal is about fostering participants' ability in relation to self-efficacy, outcome expectancy, social supports and networks and feeling that they have performed well in previous work contexts. The study attempted to explore if there was an association between sufficiency in drawing on these four sources of support and the main innovation skills measured.

Again, the potential of an innovation process to develop cultural knowledge is the mechanism by which this project may improve participant self-efficacy. Guererro and Rothstein (2012) suggest that a newcomer's improvement in cultural knowledge is positively related to self-efficacy. Fang et al (2009) point out that it is the gradual pace of acquisition of this knowledge that results in the transition penalty faced by ITPs, indicating the need for a process that speeds up attainment of this outcome. Thus, we would expect to see higher rates of sufficiency in relation to self-efficacy for the test compared to the control group.

Elez (2014) contends that in order to ameliorate the deskilling and mental health challenges that skilled immigrants are at risk of due to transition penalties, employment counselors and

services should assist clients to develop communities of support and create new relationships that can assist their career transitions. Mirchandani (2004) calls for services to demonstrate the strengths of immigrant clients to employers and their communities. As a collaborative process drawing on the individual and group level skills participants bring, Design Thinking could result in positive network development for immigrants at the individual and community level. Fang and Hou (2013) note the negative effects of co-ethnic neighbourhoods and workplaces on immigrant earnings. It would follow that earnings also positively correlate to employment consistent with ITPs' pre-arrival skills and experience. Thus, there could be a relationship between the culturally diverse network development through the study and this project outcome. This relationship will be explored in the analysis through consideration of any differences in the rate of sufficiency in drawing on social supports for the test and control groups. The rates of job search activities related to network development will be compared between the test and control group, as well as whether or not there is a relationship between these job search activities and employment outcomes.

### **A.5 Innovation and Employment Services for ITPs**

The set of challenges facing the labour market integration of internationally trained professionals is itself a “wicked problem” requiring an innovative service and policy response. As Remennick (2012) describes, “Those [ITPs] who did not succeed in accessing and landing a professional job in the initial five to six years after resettlement will probably never find skilled positions, meaning that their economic and human potential has been largely wasted” (2012). Research shows that foreign prior work experience recognition is racialized in Canada yielding “little to no return” (Li, 2008) demonstrating the need for innovative ways to overcome this barrier.

Literature about how one-stop employment services can best cater to immigrants has relevance in relation to the theoretical context for the proposed intervention. Coulter et al (2012) identify the value of early concentrated support for specialized populations in one-stops. Flentje (2010) identifies service flexibility as a key component of one-stop provision for those facing the greatest employment barriers. From the literature reviewed about Design Thinking, an innovation thinking intervention would appear to address these service imperatives within the context of one-stop provision.

## Appendix B – IES Monitoring Framework

<b>Acceptability – stakeholders perceive the intervention to be acceptable/ agreeable</b>		
<b>Indicator</b>	<b>Method/s</b>	<b>Results</b>
Credibility of program (believe that it is of value and achieves results)	Employer Interview Director Interview Participant Interview	<ul style="list-style-type: none"> <li>All six employers interviewed indicated that they would recommend the program to another employer</li> <li>All six employers indicated that the program should be offered on a larger scale</li> <li>All six employers said that they would implement some but not all recommendations designed by Innovation Teams</li> </ul>
Relative advantage of program to other employment services/ programs	Director Interview Key Informant Interview Literature Review – Best Practice Baseline survey and follow-up survey Participant Interview	<ul style="list-style-type: none"> <li>Articulated advantage of the program relative to other programs is that it is a targeted approach for ITPs that offers a more profound way to accrue Canadian workplace skills and employer connections, as well as to build ITP networks.</li> </ul>
No. of employers indicating that they would be willing to participate in a similar project again	Employer Interview	<ul style="list-style-type: none"> <li>All six employer partners indicated that they would be willing to participate in a similar project again</li> </ul>

No. of participants who agree that they would be able to successfully employ the Design Training methods they learned within the workplace	Innovation Program Evaluation Form	<ul style="list-style-type: none"> <li>• Average score for this question was 4.11</li> <li>• 85% (N=31) of participants agreed or strongly agreed that they could use the Design Thinking methods they learned in the workplace</li> </ul>
<b>Adoption – uptake of program</b>		
No. of test group participants who complete Innovation Program	Attendance records	<ul style="list-style-type: none"> <li>• N=37 of 40</li> </ul>
Attrition rate	Attendance records	<ul style="list-style-type: none"> <li>• 7.5%</li> </ul>
Reasons for discontinuing	Coordinator Follow-up Form	<ul style="list-style-type: none"> <li>• Main reason was that two participants found employment that made it impossible for them to attend program. One withdrawal was due to participant considering training a “waste of time” and a repetition of other employment program content</li> </ul>
<b>Appropriateness – perception of the fit of the project to EPBC, MOSAIC and the target population</b>		
Fit to MOSAIC organizational strategy	Director Interview Review of MOSAIC Strategic Plan	<ul style="list-style-type: none"> <li>• Fits MOSAIC strategy as innovation is one of its organizational values</li> </ul>
Relevance to EPBC service provision	Key Informant Interview Review of current EPBC Services (case managed and self-employment)	<ul style="list-style-type: none"> <li>• Is perceived as relevant to EPBC service provision, but presenting some challenges for mainstreaming to every WorkBC Centre.</li> </ul>
Perceived appropriateness of project for the target population in relation to the barriers they face	Key Informant Interview	<ul style="list-style-type: none"> <li>• Perceived as appropriate for target group addressing some, but not all, of the employment barriers they face.</li> </ul>

<b>Feasibility – actual fit of the project to the target population and how practical it was to deliver</b>		
Profile of client for whom intervention was most appropriate	Comparison of participant inclusion criteria against demographic variables that have strongest correlation to program outcomes	<ul style="list-style-type: none"> <li>• In statistical analysis, no correlation between demographic variables and program outcomes.</li> <li>• From qualitative data, potential to fit ITPs who are: in the country less than two years; in an occupation for which there is significant demand (engineers, accountants, business development, HR). Additionally, those who have MDQn scores below the Canadian mean average score for relevant competencies might benefit the most, as would ITPs who are deemed “not ready” by the ERS.</li> </ul>
% of test group participants who are rated “sufficient” across the employability skills and four sources of support measured through the Employment Readiness Scale compared to control group	ERS	<ul style="list-style-type: none"> <li>• More test group participants increased one or two levels in employment readiness (N=13) compared to control (N=6).</li> <li>• Trend for test group levels of sufficiency to increase or stay the same compared to control group, excluding self-efficacy and work history.</li> <li>• However, 1 in 2 test participants moved from insufficient to sufficient between pre- and post-test.</li> </ul>
% of test group participants who decrease their rating of the challenges measured through the Employment Readiness Scale compared to control group	ERS	<ul style="list-style-type: none"> <li>• More test group participants compared to control moved from insufficient to sufficient in the social support sub-scale.</li> </ul>

% of test group participants who demonstrate a measurable improvement in innovation skills, communication, leadership and initiative as measured by the Management Development Questionnaire compared to control group	MDQn	<ul style="list-style-type: none"> <li>Trend in terms of change scores is for the test group to increase their scores for all constructs while for the control, scores decreased</li> <li>See detailed table</li> </ul>
% of test group participants who gain full employment in roles that are commensurate with the skills and qualifications obtained in their respective home countries compared to control group	Baseline and follow-up survey	<ul style="list-style-type: none"> <li>17% of test group participants gained full-time employment in roles commensurate with pre-arrival skills and qualification</li> </ul>
Sufficiency of human resources for the project (i.e. was the role specification for the Coordinator appropriate for project implementation)	Director Interview	<ul style="list-style-type: none"> <li>Resources perceived to be sufficient for program implementation</li> </ul>
<b>Fidelity – delivery of program as proposed and quality of delivery</b>		
No. of test group participants who agree that they collaborated successfully to develop business solutions	Innovation Program Evaluation Form	<ul style="list-style-type: none"> <li>Average score for this question was 4.11</li> <li>88% (N=32) agreed or strongly agreed that, in their team, they collaborated successfully to develop business solutions</li> </ul>
No. of test group participants who agree that the group harnessed the perspective of each member of their Innovation Team to generate their business solution	Innovation Program Evaluation Form	<ul style="list-style-type: none"> <li>Average score for this question was 4.</li> <li>83% (N=30) agreed or strongly agreed that each team member's perspective was used to generate their business solution</li> </ul>
Achievement of learning outcomes for each Innovation Program Session	Session Evaluation Form Session Feedback Form from Trainers	<ul style="list-style-type: none"> <li>Scores related to attainment of learning outcomes in participants' evaluations were at mid-range or above.</li> <li>Trainer session evaluation forms qualitatively indicate that, generally, learning outcomes were attained.</li> </ul>

Level of satisfaction with Innovation Program Delivery	Session Evaluation Form Innovation Program Evaluation Form	<ul style="list-style-type: none"> <li>• Average score for this question was 4.28</li> <li>• 99% (N=36) indicated that they were satisfied or very satisfied with program delivery</li> </ul>
Extent to which Innovation Program met initial test group participant expectations	Innovation Program Evaluation Form Participant Interview	<ul style="list-style-type: none"> <li>• Average score for this question was 3.47 (where 3 was “met expectations”)</li> <li>• 53% (N=19) indicated that the program met expectations while 39% (N=14) indicated it exceeded or substantially exceeded expectations</li> </ul>
Level of satisfaction with simulated work environment that Innovation Program was delivered in	Innovation Program Evaluation Form	<ul style="list-style-type: none"> <li>• Average score for this question was 4.03</li> <li>• 99% (N=36) indicated that they were satisfied or very satisfied with the simulated work environment for the program</li> </ul>
Project milestones met as stated in original timeline	Project Reports to funder	All milestones met as stated
Project activities carried out as stated in project proposal	Project Reports to funder	All activities carried out as stated in proposal
Effectiveness of Trainers for Innovation Program	Innovation Program Evaluation Form	1. Mid-range or above scores for all trainer effectiveness indicators across all three modules of the Program
Adherence to Innovation Program content (as set out in the Training Breakdown in appendices to proposal)	Session Feedback Form from Trainers	<ul style="list-style-type: none"> <li>• Trainer Session Feedback Forms show adherence to content described in Training Breakdown. There were some shifts in approach to content delivery from Test 1 to Test 2, mainly related to enhancing the teamwork necessary to the Innovation Phase</li> </ul>

Partner awareness of roles and responsibilities in relation to project implementation	Director Interview	<ul style="list-style-type: none"> <li>• Research partner perceived to be sufficiently aware of role and responsibilities</li> <li>• Some issues in first cohort training about Envisioning Labs awareness of role and responsibilities, corrected for 2nd cohort</li> </ul>
Quality of marketing/communications material for the project	Key Informant Interview Participant Interview	<ul style="list-style-type: none"> <li>• Improvements to marketing material suggested re: relevance of problems and benefits named for each stakeholder group in material</li> </ul>
<b>Sustainability – potential for intervention to be continued within the context of EPBC service provision</b>		
Identification of service category for intervention	Review of EPBC services	<ul style="list-style-type: none"> <li>• Case managed services</li> </ul>
Identification of service fee type for intervention	Review of EPBC fee table	<ul style="list-style-type: none"> <li>• Some support in qualitative data for it to be billed as a series of ESS workshops, but mostly perceived to cut across billables.</li> </ul>

## Appendix C – Detailed Analysis Tables

### C.1. MDQn Competencies

The table below shows the pre- and post-test scores for each of the MDQn measures as well as the mean degree of change for each participant.

**Table C.1 MDQn Competences IES Research Participants**

MDQn Construct Mean Scores		Control	Test	MDQn Mean Canada	MDQn Mean Rest of World
Initiative	Pre	29.45	30.63	31.51	30.15
	Post	28.87	30.95		
	Change	-0.24	0.63		
Risk taking	Pre	22.19	24.23	27.72	26.38
	Post	22.61	24.89		
	Change	0.55	0.82		
Innovation	Pre	26.5	28.28	30.58	29.13
	Post	26.47	29.66		
	Change	-0.16	1.47		
Adaptability	Pre	29.62	29.88	31.45	29.95
	Post	29.21	30.16		
	Change	-0.5	0.21		
Communication	Pre	27.74	28.5	30.35	29.17
	Post	27.39	28.42		
	Change	-0.18	0.26		
Teamwork	Pre	32.6	33.3	32.65	31.26
	Post	31.58	32.92		
	Change	-0.79	-0.39		
Leadership	Pre	117.55	122.3	122.62	119
	Post	114.18	121.18		
	Change	-3.08	-0.47		

## C.2. Regression Analyses

A series of linear regressions were conducted to determine the relationship between the:

- Training and the MDQn subscale
- Aggregate ERS measure and the Innovation and Creativity MDQn subscale
- Number of job seeking activities a participant undertakes and the Communication MDQn subscale
- Number of job seeking and networking activities and the Job Search ERS subscale

### C.2.1 Relationship between IES and MDQn subscales

In order to determine the effectiveness of the training in assisting participants to become *more* prepared for employment as the MDQn measures it, linear regressions were used. Please see the below table for the results of a series of regressions for each of the MDQn subscales. Please note that the models below control for the baseline scores of participants.

**Table C.2 Delta = Constant + Group (Test vs Control) + Baseline**

	Initiative	Risk taking	Innovation	Adaptability	Communicating	Teamwork	Leadership
<b>Constant</b>	B=7.599 SE=3.421 p=.029	B=5.689 SE=2.118 p=.009	B=4.501 SE=2.510 p=.077	B=15.236 SE=4.279 p=.001	B=6.490 SE=3.063 p=.037	B=13.280 SE=4.001 p=.001	B=37.582 SE=2.785 p=.143
<b>Group</b>	B=1.194 SE=.840 p=.159	B=.735 SE=.677 p=.281	B=1.903 SE=.654 p=.005 <sup>a</sup>	B=.836 SE=.875 p=.343	B=.587 SE=.947 p=.537	B=.807 SE=.919 p=.383	B=4.129 SE=2.785 p=.143
<b>Baseline</b>	B= -.269 SE=.116 p=.023 <sup>b</sup>	B= -.233 SE=.094 p=.015 <sup>b</sup>	B= -.175 SE=.903 p=.063	B= -.530 SE=.143 p=.000 <sup>b</sup>	B= -.242 SE=.108 p=.029 <sup>b</sup>	B= -.435 SE=.122 p=.001 <sup>b</sup>	B= -.347 SE=.109 p=.002 <sup>b</sup>

<sup>a</sup> After adjusting for baseline, we can see that training has significantly impacted the MDQn innovation subscale. On average, those with training scored 1.9 units higher.

<sup>b</sup> For all of the MDQn constructs (except Innovation), the baseline score was a significant predictor of degree of change. Those with a higher baseline score, are expected to increase less than those with a lower baseline score.

In order to determine if the effect of training remains when controlling for additional variables, several variables were added to the model: sex, number of years in Canada, number of years of experience, and sector. Please note, the Business sector was used as the comparison sector as that had the highest representation.

Please see the below table for the results of a series of regression for each of the MDQn subscales which controls for the baseline scores of participants.

**Table C.3: Delta = Constant + Group (Test vs Control) + Sex + Year in Canada class + Years of experience + Sector**

	<b>Initiative</b>	<b>Risk taking</b>	<b>Innovation</b>	<b>Adaptability</b>	<b>Communication</b>	<b>Teamwork</b>	<b>Leadership</b>
<b>Constant</b>	B=7.780 SE=4.319 P=.077	B=6.520 SE=2.571 P=.014	B=7.372 SE=3.066 P=.019	B=15.676 SE=5.283 P=.004	B=7.629 SE=3.676 P=.042	B=16.288 SE=5.281 P=.003	B=52.082 SE=16.518 P=.003
<b>Group</b>	B=1.403 SE=.905 P=.127	B=1.069 SE=.728 P=.147	B=1.924 SE=.719 P=.010 <sup>a</sup>	B=.411 SE=.988 P=.679	B=1.275 SE=.947 P=.183	B=.733 SE=1.066 P=.495	B=4.761 SE=2.974 P=.115
<b>Sex</b>	B=.659 SE=.926 P=.479	B=.514 SE=.734 P=.487	B=-.062 SE=.760 P=.935	B=-.690 SE=1.014 P=.499	B=.842 SE=.988 P=.398	B=.037 SE=1.117 P=.974	B=5.285 SE=3.059 P=.089
<b>Years in Canada</b>	B=.010 SE=.130 P=.937	B=.082 SE=.098 P=.406	B=.136 SE=.101 P=.182	B=-.030 SE=.139 P=.829	B=.072 SE=.133 P=.590	B=.058 SE=.150 P=.699	B=.083 SE=.417 P=.843
<b>Years of experience</b>	B=.105 SE=.081 P=.200	B=.017 SE=.063 P=.792	B=.014 SE=.062 P=.827	B=.020 SE=.090 P=.829	B=.248 SE=.086 P=.005 <sup>b</sup>	B=.078 SE=.096 P=.420	B=.407 SE=.266 P=.132
<b>Sector - AppSci</b>	B=-1.677 SE=1.317 P=.208	B=-.107 SE=1.041 P=.918	B=.779 SE=1.015 P=.446	B=.352 SE=1.490 P=.814	B=-.889 SE=1.431 P=.537	B=-.412 SE=1.552 P=.792	B=-.537 SE=4.419 P=.904
<b>Sector - Health</b>	B=-1.788 SE=2.703 P=.511	B=-1.394 SE=2.175 P=.524	B=-1.296 SE=2.056 P=.531	B=2.182 SE=2.959 P=.464	B=-.472 SE=2.869 P=.870	B=-.534 SE=3.208 P=.868	B=1.189 SE=8.912 P=.983
<b>Sector - Education</b>	B=-1.918 SE=1.157 P=.103	B=-.900 SE=.900 P=.322	B=-1.123 SE=.869 P=.202	B=-2.997 SE=1.249 P=.020 <sup>c</sup>	B=-2.076 SE=1.208 P=.091	B=-2.366 SE=1.351 P=.085	B=-9.307 SE=3.824 P=.018
<b>Sector - Sales</b>	B=.988 SE=2.713 P=.717	B=-1.879 SE=2.113 P=.378	B=-1.122 SE=2.077 P=.591	B=1.601 SE=2.996 P=.595	B=-.598 SE=2.845 P=.834	B=2.358 SE=3.208 P=.465	B=-4.130 SE=8.894 P=.644
<b>Sector - Trades</b>	B=-4.188 SE=2.693 P=.125	B=.657 SE=2.089 P=.754	B=-1.761 SE=2.043 P=.392	B=-3.451 SE=2.928 P=.243	B=-1.324 SE=2.990 P=.660	B=-.478 SE=3.153 P=.880	B=-7.874 SE=9.350 P=.403
<b>Sector - Natural Resources</b>	B=-2.875 SE=2.259 P=.208	B=-4.277 SE=1.766 P=.019 <sup>c</sup>	B=-4.669 SE=1.784 P=.011	B=.857 SE=2.494 P=.732	B=-4.379 SE=2.538 P=.090	B=-1.962 SE=2.695 P=.469	B=-13.533 SE=7.772 P=.087
<b>Sector - Manufacturing</b>	B=-.922 SE=1.677 P=.584	B=2.263 SE=1.285 P=.083	B=1.471 SE=1.261 P=.248	B=-1.110 SE=1.810 P=.542	B=1.156 SE=1.752 P=.512	B=-.034 SE=1.954 P=.986	B=-1.423 SE=5.431 P=.794
<b>Baseline</b>	B=-.295 SE=.138 P=.036 <sup>d</sup>	B=-.295 SE=.104 P=.006 <sup>d</sup>	B=-.287 SE=.112 P=.013 <sup>d</sup>	B=-.507 SE=.160 P=.002 <sup>d</sup>	B=-.387 SE=.122 P=.002 <sup>d</sup>	B=-.536 SE=.158 P=.001 <sup>d</sup>	B=-.503 SE=.131 P=.000 <sup>d</sup>

<sup>a</sup> After adjusting for baseline, sex, years in Canada, years of experience, and sector we can see that the IES training remains a significant predictor of the MDQn Innovation subscale. On average, those with training scored 1.924 units higher.

<sup>b</sup> We see that more years of job experience is a significant predictor of the MDQn communication subscale, regardless of whether or not they took the training or not. Further studies in the effect of years of experience on communication would need to be undertaken in order to make sense of this result.

<sup>c</sup> We see that two instances of sector are predictive of two MDQn subscales, regardless of whether or not they took the training or not. Those who come from Education (compared to Business) sector are more likely to increase in Adaptability, and those who come from the Natural Resources (compared to Business) sector are more likely to increase in the Risk taking. Further studies on the relationships between sector and adaptability and risk taking would need to be undertaken in order to make sense of these result.

<sup>d</sup> For all of the MDQn constructs, the baseline score was a significant predictor of degree of change. Those with a higher baseline score, are expected to increase less than those with a lower baseline score.

### C.2.2 Relationship between the Innovation MDQn Competence and Employment Readiness

A linear regression was used to determine if participants' ERS aggregate measure was a significant predictor of their Innovation and Creativity MDQn subscale. The results are below. Since the ERS is an ordinal scale, the variable was dummy coded with "Fully Ready" being the comparison group. From the results below, one can see that those who are "Not Ready" are likely to score 4.358 units below those who are Fully Ready.

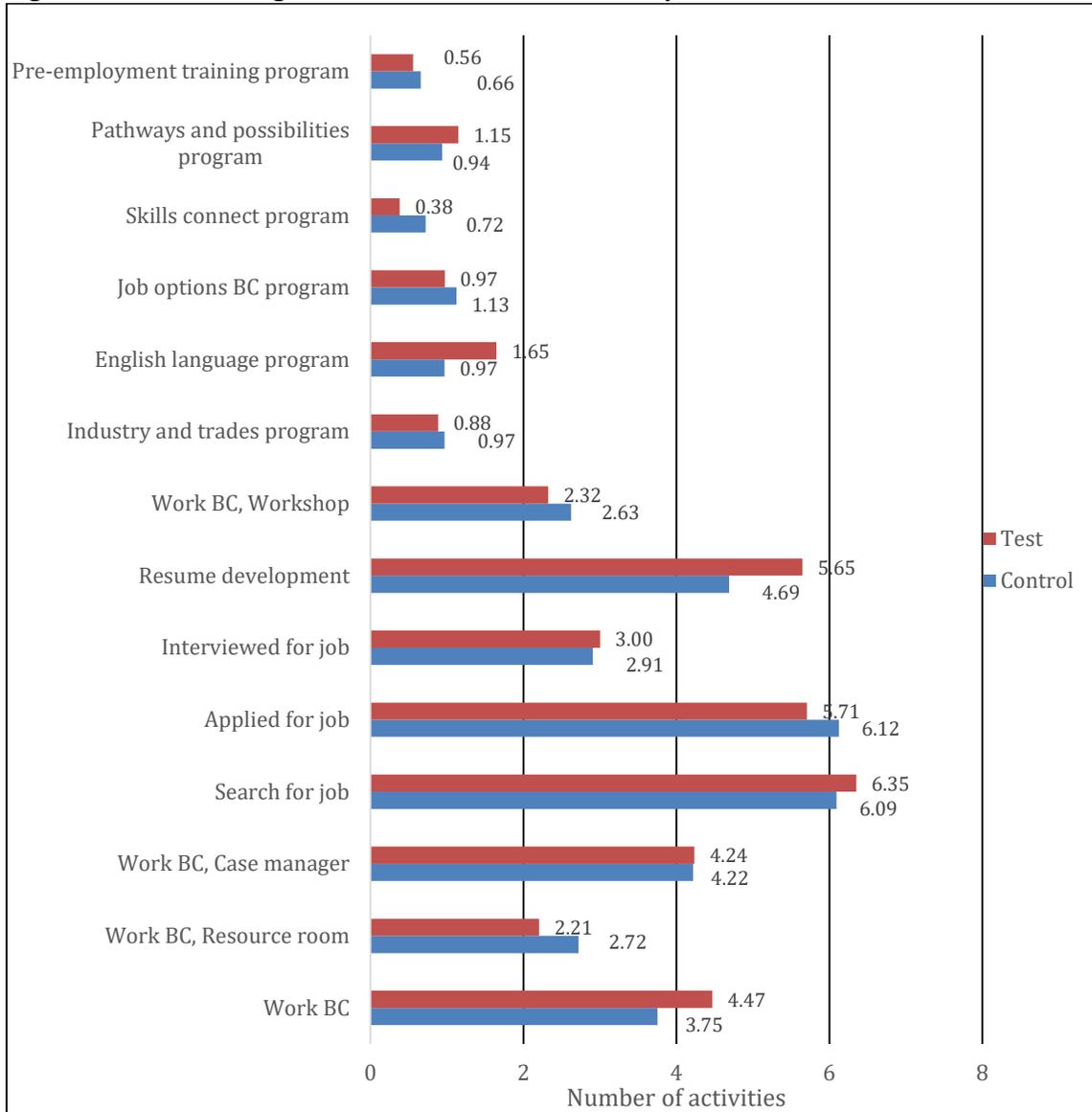
**Table C.4 Relationship between Employment Readiness and Innovation**

Variable	Results
Constant	B=30.273 SE=.814 P=.000
Not Ready (compared to Fully Ready)	B=-4.358 SE=1.039 P=.000
Minimally Ready (compared to Fully ready)	B=-.799 SE=1.196 P=.506

### C.2.3 Relationship between the Communication MDQn Competence and Job Search Activities

The figure below shows the descriptive statistics for job-seeking activities engaged in by the research participants between baseline and follow-up.

**Figure C.1 Job Seeking Activities IES Research Participants**



A linear regression was used to determine if the number of job seeking activities a participant engages in is predictive of the Communication MDQn subscale. The results are below, and they show that the number of job seeking activities, are not significant predictors.

**Table C.5 Relationship between Job Search and Communication**

Variable	Results
Constant	B=28.617 SE=1.680 P=.000
Number of job seeking activities	B=-.004 SE=.040 P=.917

#### C.2.4 Relationship between the Job Search ERS subscale and Number of Job Search Activities

A linear regression was used to determine if the number of job seeking or networking activities a participant engages in is predictive of the Job Search ERS subscale. The results are below, and they show that neither the number of job seeking or networking activities are significant predictors.

**Table C.6 Relationship between Job Search Activities and ERS Job Search Sufficiency**

Variable	Results
Constant	B=.412 SE=.658 P=.532
Job seeking activities	B=-.006 SE=.019 P=.735
Networking activities	B=.013 SE=.052 P=.798

#### C.2.5 Relationship between Job Search and Networking Activities and Commensurate Employment

To test whether or not the number of job seeking activities and networking activities predicts full-time, commensurate employment, a logistic regression was run. The results are below and not significant.

**Table C.7 Relationship between Job Search and Networking Activities and Commensurate Employment**

Variable	Results
Constant	B=-1.387 SE=.871 P=.111
Job seeking activities	B=-.020 SE=.027 P=.462
Networking activities	B=.063 SE=.072 P=.381