The Advanced Digital and Professional Training (ADaPT) Program

An Innovative Model for Inclusive Upskilling

TED ROGERS SCHOOL OF MANAGEMENT | DIVERSITY INSTITUTE

Future Skills Centre

TED ROGERS SCHOOL OF MANAGEMENT | DIVERSITY INSTITUTE

The Diversity Institute undertakes research on diversity in the workplace to improve practices in organizations. We work with organizations to develop customized strategies, programming, and resources to promote new, interdisciplinary knowledge and practice about diversity with respect to gender, race/ethnicity, Aboriginal peoples, abilities and sexual orientation. Using an ecological model of change, our action-oriented, evidence-based approach drives social innovation across sectors.

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Future Skills Centre is a forward-thinking research and collaboration hub dedicated to preparing Canadians for employment success and meeting the emerging talent needs of employers. As a pan-Canadian community, FSC brings together experts and organizations across sectors to rigorously identify, assess, and share innovative approaches to develop the skills needed to drive prosperity and inclusion. FSC is directly involved in innovation through investments in pilot projects and academic research on the future of work and skills in Canada. The Future Skills Centre is funded by the Government of Canada's Future Skills program.

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Executive Summary

The Advanced Digital and Professional Training (ADaPT) program is a work-integrated learning (WIL) program that was designed to bridge the skills gap between post-secondary education (PSE) graduates and the entry-level job market. Since 2014 ADaPT has been provided to over 1200 youth resulting in over 1000 work placements. The ADaPT program was designed with the intention of expanding the talent pool and advancing inclusion, by providing alternative pathways into ICT (Information and Communication Technologies) and digital roles for graduates of various academic backgrounds.

The ADaPT program was developed with support from the Government of Ontario, Government of Canada, HSBC, and in collaboration with Technation, the Ontario Chamber of Commerce, Ontario Tourism Education Council, large employers such as RBC, TCS, Cognizant, Infosys, TechMahindra and Public Safety Canada, as well as organizations offering innovative specialized training including Pega, General Assembly, Salesforce and Jelly Academy.

ADaPT Program was Developed as a Response to Growing Market Needs

Demand for digital skills has been accelerated by COVID extending beyond the Information, Communications and Technology (ICT) sector to virtually every industry. Yet while employers claim that there are profound skills shortages, there is also evidence that women, internationally trained professionals, Indigenous peoples, persons with disabilities and others are under-employed. Moreover, recent labour market research shows that there are now more ICT jobs outside of the ICT sector as all other sectors - retail, finance, manufacturing, and services - accelerate their rates of digitization. Roles in demand, for example, informatics/ business systems analysts and telecommunications services/operations/facilities manager into work integrated learning programs indicate that the design of traditional co-op programs, typically in engineering, computer science and business, may have the unintended consequence of excluding women and under-represented groups. The ADaPT program has an innovative design to address these issues, allowing students from any discipline to participate in employment-skills training and work integrated learning after completing their education, enabling employers to transition them into full time employment.

ADaPT Program Addresses both Supply and Demand Sides of the Skills Gap

ADaPT is an employer centered program designed to rapidly upskill senior students and recent graduates with a combination of in-demand technology courses, such as coding and data analysis, skills for success, such as business writing and presentations, wraparound supports including career counselling, coupled with work integrated learning (WIL) and wraparound supports to address the needs of women and diverse learners. The program was first offered in

2014 and has been provided in a variety of formats including intensive bootcamps, online and hybrid offerings with consistently strong results – averaging over 90% placement rates and satisfaction rates of 88% even during a shift to online learning during the COVID-19 pandemic. Customer programs have offered intensive programs in PEGA, Salesforce, Data analytics and more. Graduates can earn a range of micro-credentials including in-demand industry certifications, such as Pegasystems certification. As noted above, because ADaPT is positioned at the end of their formal post-secondary education, it serves students across disciplines, including those unlikely to have co-ops or WIL embedded in their program. It is also well-suited to SMEs who will often transition students into full time roles.

Evaluation and Impact of the ADaPT Program

The program has been formally evaluated using a number of tools. Surveys are distributed to participants at three different stages in program implementation — Stage 1 (pre-training), Stage 2 (post-training) and Stage 3, four months post-training (during internship). Participants score their perceptions of skill proficiencies in different areas, including essential skills, interpersonal skills, thinking skills, technical skills, and more. ADaPT uses a range of standardized tests to assess competencies and skills development (e.g., Organization for Economic Cooperation and Development Education Skills Online test, Lumina Spark). Third Party evaluations, including a recent one from Blueprint ADE, have confirmed its efficacy. Serving graduates from over 101 Universities, the program has trained more than 1200 youths, 79% of which identify as being diverse, and has consistently achieved placement rates of 90% even during COVID-19.

During the COVID-19 pandemic, the ADaPT program successfully pivoted to synchronous and asynchronous learning almost overnight with continued strong results. The most recent evaluation results indicate a high level of satisfaction among the participants as well as a high likelihood of participants recommending the program to others. Over 90% respondents found this program useful in improving both their professional and digital skills. Survey results demonstrate that overall, the ADaPT program has helped women and racialized participants improve their proficiencies in a variety of skill sets. The ADaPT program's high placement rate shows the success of this program as a useful source of skills development initiative and a medium to transfer those skills into meaningful employment. The ADaPT program has been trying to address some of the specific barriers that equity-deserving groups face as they seek employment. It is through this commitment to equity=seeking groups that ADaPT fosters greater inclusion and equity in the ICT sector.

This delivery stream offers the potential to reach more groups in need of upskilling in the future, such as mid-career workers as well as youth from the equity-deserving groups – for 2022/23 ADaPT courses in foundational digital skills will be offered to 25-30 Grade 11-12 Peel Students with a focus on Black and Indigenous students. Collaborating with the Canada Digital Adoption Program (CDAP) and Ontario Chamber of Commerce (OCC), ADaPT is also planning to run a unique three-year program designed for high school graduates or recent PSE graduates offering training to support small and medium enterprises with online presence and digitization of business operations. Blueprint is currently overseeing a large-scale randomized control to compare different components of the program and their impact on outcomes.

Introduction

Background

The Advanced Digital and Professional Training (ADaPT) program was launched in 2013 to address the skills gap between post-secondary education (PSE) graduates and the entry-level job market and prepare the new graduates, particularly women and diverse people, from across disciplines, with the necessary skills needed to excel in their career. This report introduces the ADaPT program and explains the context of the program creation, starting with the industry needs and the competencies desired by the employers that are not met by the existing post-secondary education.

This report then explores the design of the ADaPT program and its approach to skills development and wraparound supports. Next it reviews the results of the evaluation of the ADaPT program. The final section of this report showcases the impact created by this program and the implications for upskilling and reskilling.

Industry Needs

The Information and Communications Technologies (ICT) sector plays a pivotal role in influencing the Canadian economy - contributing around 5.1% to the country's total GDP.12 According to the Information Communication Technology Council (ICTC) rapid digitization across sectors means that there are now more technology jobs outside of the sector than within it. To sustain this promising growth, the ICT sector needs more skilled workers with 'digital talent' entering the job market. In 2020, ICTC estimated that even with the impact of the COVID-19 pandemic, over 2 million people will be employed in the Canadian digital economy by the end of 2022 with 998,000 people employed in the ICT sector. But the definitions of ICT jobs and the skills required are not consistent.

To meet the need of the ICT sector for talent who have strong digital skills, the government has been promoting multiple initiatives in the past ten years to nurture "a workforce for the 21st century economy"3, 4. However, the perceived digital skills gap in Canada continues to be a concern for employers. Reports from industry and organizations representing ICT professionals show a lack of a digitally ready workforce5 6 7 8 9 , particularly work-ready graduates capable of working in the rapidly growing tech sector, and in jobs that leverage ICT skills. Digital skills shortages have been found in sectors such as the financial services, manufacturing, health care, the public sector, and more. A particular challenge in Canada is the structure of the economy which is dominated by SMEs which often lack the capacity to adopt new technologies in part because of talent gaps. While in the US half of private sector jobs are with large corporations, in Canada it is only about 10%, the vast majority of jobs are in SMEs. It has been estimated that skill shortages in Ontario have resulted in a lost GDP of around $24.3 billion annually, which is equivalent to nearly 4% of the provincial GDP. Consequently, the province is losing around $3.7

billion in annual tax revenues.[10] Projections show that Canada will see a demand for 250,000 additional jobs in the digital economy by 2025[11] [12] .

A recent report by the Diversity Institute (DI)[13] digs into the nature of the skills required –

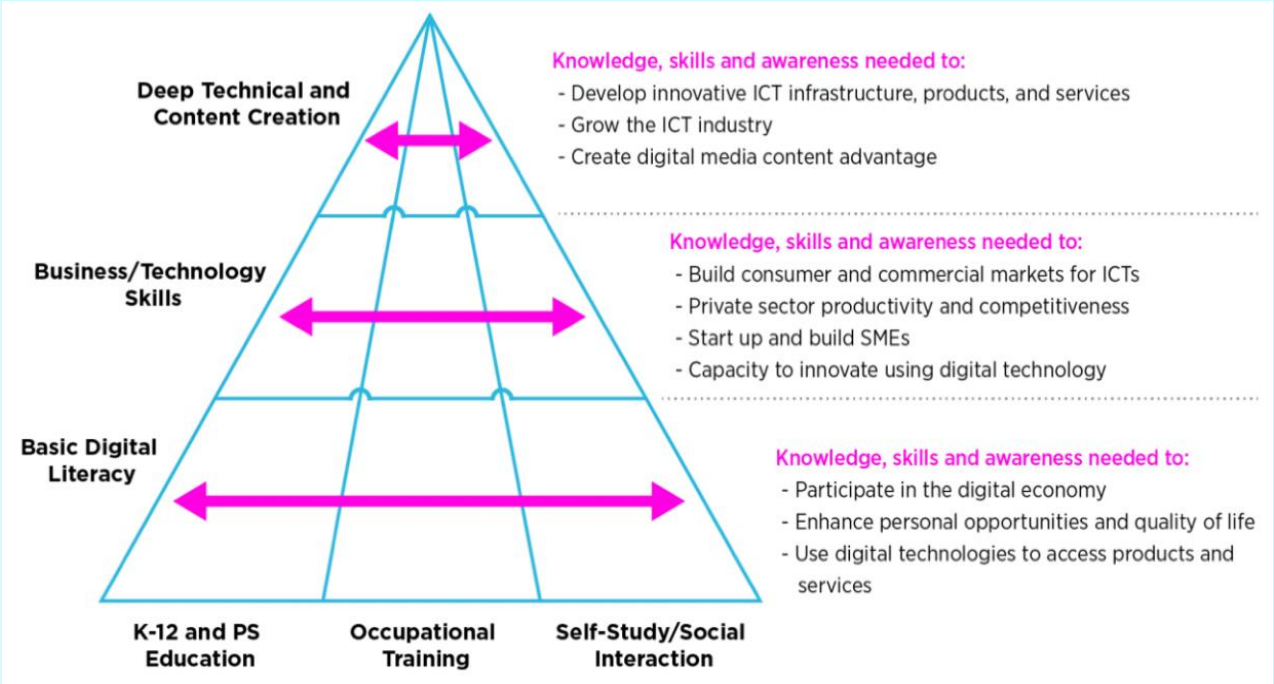
- there exists growing demand for both technological skills as well as 'soft skills' like resilience, emotional stability, flexibility, and adaptability.
- as skills and competencies are becoming the new workplace 'currency', it is important to establish a shared approach to understanding how to define, evaluate, and develop them.
- despite some promising evidence of the positive impact and return on investment from literacy and essential skills upgrading, the private sector is not doing enough to solve this crisis.
- the Canadian system is ranked below several other countries in some key areas such as adult education and literacy training. A lack of employer investments in essential skills training is an important barrier for many adults with low literacy rates.

Competencies

ICT sector and digital roles vary considerably in terms of "key competencies, skills and tools".[14] Research suggests that there are challenges in bridging the skills gap in part because of the lack of consistent definitions and understanding of digital skills as well as the rapid pace of change. For example, a recent OECD study noted that digital skills were the most important skills demanded by employers in Ontario. But further inspection of the data indicated that only about 10% were referring to "deep technology" skills like coding and java programming, 15% were referring to the skills to use advanced enterprise platforms such as ERP or analysis tools such as SQL. Fully 75% were referring to basic levels of digital skills – using Microsoft office and excel for example.

Overall, while many see computer science and engineering as the principal pathway to the ICT sector and digital skills roles, there is growing evidence that there are multiple pathways.[15] [16] A recent survey of skills needed for AI confirms the importance of deep technology skills and the need for essential skills like communication and collaboration skills, problem solving skills, and creativity.[17] Senior leaders from Microsoft recently noted that barriers to the adoption of AI and the need for graduates in humanities and the social sciences to work with the technology. The skills required are not just "deep" technology skills but also include the skills to support digital adoption and transformation including understanding of organizations processes, user needs, regulatory policies and more. Some roles require 'hybrid' individuals with sufficient skills in sales, marketing, project management, regulatory processes, business management, strategy and organizational change, content development.[18] [19] Thus, it is important to distinguish between different levels of digital skills and their applications (see Figure 1)

Figure 1: Levels of Digital Skills



Source: Cukier, W., Smarz, S., and Grant, K. (2017). Digital Skills and Business School Curriculum.

While there is a tendency to equate digital skills with computer science and engineering,[20] [21] [22] increasingly employers are also stressing the importance of "soft skills". Studies on digital skills frameworks have highlighted the importance of these other skills for employment[23] and a recent ICTC recent report highlights that while demand for the technical skills remains high, employers are increasingly looking for employees with communication and interpersonal skills, ability to work in teams, and a strong business acumen.[24] Economic and Social Development Canada (ESDC) in their Skills for Success Framework has identified nine essential skills that will help individuals to find employment and succeed in their careers (see Figure 2). These align well with other frameworks for example from the World Economic Forum which increasingly place emphasis on adaptability, creativity and innovation, and collaboration.[25]

Figure 2: Skills for Success

Gaps in Employer and Graduate Perception

Research on the skills gap has, for a decade, indicated that the challenges are a combination of supply and demand factors and gaps in understanding of how to define, assess and utilize skills. Certainly, there is ample evidence that traditional post-secondary education is not able to respond to rapidly changing employer demands, although new approaches including micro-credentials and work integrated learning programs, including the large-scale federal Student Work Placement Program (SWPP) are attempting to bridge those gaps.

While some programs, for example computer science, engineering and business, focus on applied learning and work integrated learning, often working closely with employers. Other disciplines pride themselves on their pursuit of knowledge and critical skills without reference to employment. While there is evidence that graduates in social science and humanities fields are uniquely qualified to contribute to emerging digital jobs.[26] [27] The seldom have access to career support or the specific professional skills to thrive in the corporate landscape.[28] [29]

There is also evidence that the ways in which employers and graduates or service providers understand skills are different. For example, one study comparing graduate and employer perceptions showed that while 93% of students believe that they are highly proficient in writing and 91% in oral communication only 39.4% of employers believe recent graduates are highly proficient in writing and 47% in oral communication. This has to do with the ways in which they understand writing. Students perhaps thinking of a 20-page essay and employers thinking of a 2-page memo.

Skills Gap Paradox: Diverse Groups Face Barriers

The business case for equity, diversity and inclusion is well established. It provides access to talent, access to markets, improved innovation and often overall organizational performance. Yet there is evidence that in spite of the skills gaps and labour shortages in the ICT sector, equity deserving groups (e.g., women, racialized people, immigrants, Indigenous Peoples, and people with disabilities) continue to be underrepresented in this sector. Even those in STEM disciplines are under-employed and underpaid.

For example,

- In spite of thirty years of advocacy, and higher post-secondary graduate rates, there are fewer women in computer science today and only marginally more in engineering than there were in 1991. Women are four times less likely to work in the ICT sector compared to men;[30] Women graduating in STEM are likely to be paid less than men and are more likely to exit the sector because the "chilly climate" continues to exist.
- The traditional socialization of women and girls can negatively affect their attitudes towards STEM which plays a role in their career aspirations;[31]
- Women experience barriers in ICT workplaces including gender pay gaps[32] as well as a lack of support in terms of childcare and mentorship;[33]
- Indigenous peoples are less likely to graduate from high school and post-secondary[34] and experience both underrepresentation and pay gaps compared to non-Indigenous people.[35] Recent research using 2016 census data show that Indigenous workers living in cities with a large Indigenous population face a particularly severe gap in wages.[36]
- There are major pay gaps experienced by most racialized groups (e.g., on average, racialized tech workers earn $3,100 less than non-racialized tech workers);[37] and some racialized groups – for example those who identify as Black, are severely under-represented. They have lower high school and post-secondary graduation rates and are more likely to be in arts and social sciences than in STEM. Two in five racialized Canadian workers report discrimination in their workplace in spite of the increasing ubiquity of EDI policies in Canadian employers.[38]
- In general, university graduates with severe disabilities have worse employment outcomes than high school dropouts without disabilities. Persons with disabilities are more likely to be in arts and social sciences than in STEM.[39] People with disabilities in the ICT sector generally experience 10% more unemployment than those persons without disabilities.[40]
- Persons with disabilities also face a myriad of barriers to the ICT sector, ranging from stereotypes to lack of accessibility in terms of physical structures and communication.[41]
- Immigrants and racialized people with either 'foreign-sounding' names (e.g., of Indian, Pakistani, and Chinese origin) or foreign work experience face bias at recruitment stages, receiving less callbacks than applicants with 'English-sounding' names who possess Canadian experience.[42]
- Internationally educated engineers have twice the unemployment rate (40%) of those educated in Canada.
- Highly skilled immigrants who come to Canada may have easily transferable technical skills, but experience challenges with cultural gaps and language barriers.[43]

- Equity-seeking groups also face limited access to mentorship, training, and networks, which create additional barriers to representation and inclusion.[44]

Innovative Approaches

What is required are innovative approaches to ensure shared understanding of the skills that are needed, how to develop them and how to create inclusive work environments where they can be fully utilized. We need to create flexible pathways for diverse job seekers building on their assets with appropriate wrap around supports.

Skills definition and assessments

To close the skills gap, many organizations are introducing a coherent definition of skills and standardization of assessments. In Europe, for example, the Council of European Professional Informatics Societies (CEPIS), and the European Centre for the Development of Vocational Training (Cedefop) created the European e-Competence Framework (e-CF) with the intent to provide a generic set of typical roles performed by ICT professionals in any organization, and covering the full ICT process. This framework provides a reference of 40 competences as applied to the ICT workplace, using a common language for competencies, skills, knowledge, and proficiency levels that can be used across Europe.[45] Similar attempts at definition of ICT professional's knowledge, competencies, and skills have been made in other countries, such as Australia[46] and Singapore.[47]Other European efforts aiming at clarification and standardization of ICT roles and skills include; the Information Technology Infrastructure Library (ITIL), a detailed set of practices for IT service management that focus on aligning IT services with industry needs (a joint venture by industry and the British Government),[48] and the European Classification of Skills/Competences, Qualifications and Occupations (ESCO), a resource provided by the European Commission that describes, identifies, and classifies professional occupations, skills, and qualifications relevant to the EU labour market.[49] In Canada, we have seen efforts by the ICTC and CIPS to develop more structured frameworks as well as the Skills for Success digital skills assessment. Using competency-based frameworks can also provide opportunities for non-traditional learners for example through the Jelly Academy (focused on Indigenous learners and online marketing) or nPower, focused on marginalized youth and in-demand technical certifications.

Rapid upskilling

Traditional training, particularly in higher education, has involved long cycles of change when adding or adapting new curricula or programs. However, this often means that curricula lag behind industry standards in the context of the rapid speed of change of industry (Hazan, 2017; Lewington, 2019; Lapointe & Turner, 2020). This has left an education and training void that has increasingly been filled by diverse players from both the public and private sectors including innovation centres within post-secondary institutions, public online platforms, private training and government-funded upskilling programs, and others. Some of these are upskilling programs offered by companies and public sector organizations focused on digital upskilling of existing employees (e.g., Cognizant, AT&T, Government of Canada, Amazon Web Services) (see Cukier, 2020). Jelly Academy offers opportunities to rapidly upskill and reskill through short micro-

training courses to build one's digital skills. It also provides learners with micro-credentials at the culmination of the workshop to help them transition into digital marketing. Palette Skills runs innovative upskilling programs through its partnerships with industry, governments, post-secondary institutions, and community groups to transition workers into high-demand careers in ICT firms.

Adaptive learning

Technology can provide more convenient anytime/anyplace access to learning in asynchronous or synchronous formats, but it also offers opportunities for more customization and self-paced approaches using, for example, adaptive learning approaches which tailor lessons to learners' progress as well as innovative applications of Augmented Reality and Virtual Reality simulations and feedback. As a result, technology is enabling the emergence of increasingly effective personalized adaptive learning programs, which are able to differentiate and guide learners on a continuous personalized learning process that responds to their learning activities in real-time.[50]

Axonify is an example of an artificial intelligence enabled adaptive micro-learning platform that features short bursts of personalized, gamified modules and provides impact-measurement and analytics tools.[51]

Wraparound supports

The use of wraparound supports in the fields of skills development has expanded significantly in the past decade, with current widespread use. The term wraparound has been broadly used to describe any support service that is holistic, flexible, family or person-oriented, and comprehensive enough to meet a wide range of needs. "To stay focused on their education and career goals, learners need comprehensive wraparound supports, whether they are person-to-person or tech-enabled, to help them overcome hurdles and manage multiple commitments and competing priorities."[52] Within the skills development context, wraparound supports are integral to supporting individuals, particularly those from equity-deserving groups, to access and participate in these programs and training. Wraparound supports come in various forms, including, direct financial support, employment placement, career counselling, mental health support, transportation, childcare, access to technology, networking, mentoring, sponsorship, and social capital. Wraparound supports proved to be particularly effective during the COVID-19 pandemic when many training services transitioned to remote learning arrangements. For instance, providing supports related to technology access and childcare helped participants focus on skills development. Therefore, it is critical that these services expand and persist even post-pandemic as online learning becomes more prevalent.

Work integrated learning

Globally, there is a growing interest in the potential of work-integrated learning (WIL) for improving employment outcomes for post-secondary graduates.[53] [54] [55] WIL can be used to describe a range of programs such as field placements, internships, articling, apprenticeships, optional co-operative placements, and residencies and are often required in disciplines like nursing, medicine, and law.[56] Studies have found a positive correlation between WIL and employment. For example, students who participate in co-op programs tend to have higher employment and full-time employment rates and higher earnings than their peers who do not.[57]

A study using Longitudinal and International Study of Adults data[58] shows that 74.6 % of Canadian students who were employed in a job related to their field of study during their postsecondary education had full-time employment status three months after graduation. In contrast, only 60.5% of those who did not have work experience related to their field of study were employed full-time after graduating.[59] WIL is also a pathway to full-time employment for students and recent graduates since employers use co-op programs to develop relevant, transferrable, and marketable skills and pre-screen potential hires.[60]

Matching job seekers to employers

While innovation is not synonymous with new technologies, these tools can certainly be drivers for innovation. In particular, AI-powered solutions show great promise in reducing the inherent biases involved in recruitment processes. Through its ability to analyze big data, AI can review an entire pipeline of candidates in a short time and avoid unconscious bias (Polli, 2019). In addition, AI can be an effective tool in establishing a more multi-faceted skills assessment of workers. In recruiting, AI tools use machine-learning algorithms to analyze a candidate's personality and abilities through psychometric testing[61] although there are potential risks if the assessment tools are not bias free. This can boost labour force integration of marginalized Canadians by providing a more holistic understanding of their skill sets. For example, Magnet, a digital social innovation platform at the Toronto Metropolitan University, connects job seekers, employers, and community partners, through its intelligent matching technology. Employers can target candidates across the Magnet network which includes more than 1 million job seekers connected to university campuses and community groups. The advanced AI enabled system can identify candidates based on skills and credentials as well as candidate fit through a single posting. This is done through the integration of an online psychometric tool. Employers from across Canada are helping to inform on the characteristics of people who excel in occupations with labour shortages. Those qualities are then benchmarked to match job seekers to fit-based job postings shared through the Magnet platform. Employers can also target postings to job seekers who have identified as belonging to an equity-deserving group.

Creating inclusive workplaces

There is evidence that in spite of skills shortages, employers may overlook talent. Bias has been documented in recruitment and employment processes for women, and other equity deserving groups. Therefore, one important way to address the skills gap is to ensure that employers create inclusive workplaces. "Classical diversity interventions," such as recruitment and hiring from diverse communities, diversity training, and mentoring programs have produced uneven results.[62] [63] [64] [65] Nonetheless many organizations assume that the solution lies in increasing the number of employees from equity-deserving groups. Organizations may have significant representation of equity-deserving groups but may simply expect them to assimilate.[66]

The degree of diversity and the overall organizational culture influence employee perceptions of inclusion or exclusion. The degree to which employees feel included or excluded determines organizational commitment, individual well-being, job satisfaction and effectiveness.[67] Rather than focusing only on individual perceptions, scholars and others have expressed the need for deeper understanding of complex interactions between context and organization, and

individual initiatives and change.[68] [69] [70] [71] Organizations may have representation of equity-deserving groups but not value them.[72] Attention has shifted to the creation of inclusive organizations that demonstrate a commitment to integrating different identities and valuing them.[73] [74]

Implications

Employer centered approaches are key

The pace of digitization is increasing and Canadian employers, including SMEs, are increasingly demanding skills from the workforce that are beyond the current post-secondary curriculum. It is important to find with new and innovative approaches to fuel these needs.[75]

Improve shared understanding of definitions and assessments of skills

The contribution of science, technology, engineering, and math (STEM) education towards the development of skilled workforce is irrefutable, but other disciplines and skills are also needed. A combination of skills driven by STEM and soft skills like leadership, creativity, adaptability, and entrepreneurial ability can help reduce the skills gap sought by the employers and maximize the impact of STEM skills.[76] Developing a shared understanding of the digital skills taxonomy and how to assess them is key.

Provide innovative processes to upskilling and reskilling

Innovative approach for rapidly developing needed skills is imperative. Microcredentials, Work integrated learning (WIL), Adaptive learning, Technology enabled learning have all gained momentum and should be exploited which ensuring quality assurance and consistency.[77]

Provide wraparound supports

Since job seekers from equity-deserving groups often encounter additional challenges, skills training programs need to consider the diverse needs of equity-deserving groups while designing or collaborating with organizations to provide wraparound supports and enabling program participation. The use of wraparound supports in the field of skills training has expanded significantly in the past decade with widespread use. Some of the key wraparound supports include direct financial support, employment placement, career counselling, mental-health support, transportation, childcare, access to technology, networking, mentoring, sponsorship, and social capital.[78] Evidence supports the need to reduce barriers, strengthen participation in programs and provide better transitions into labour markets.

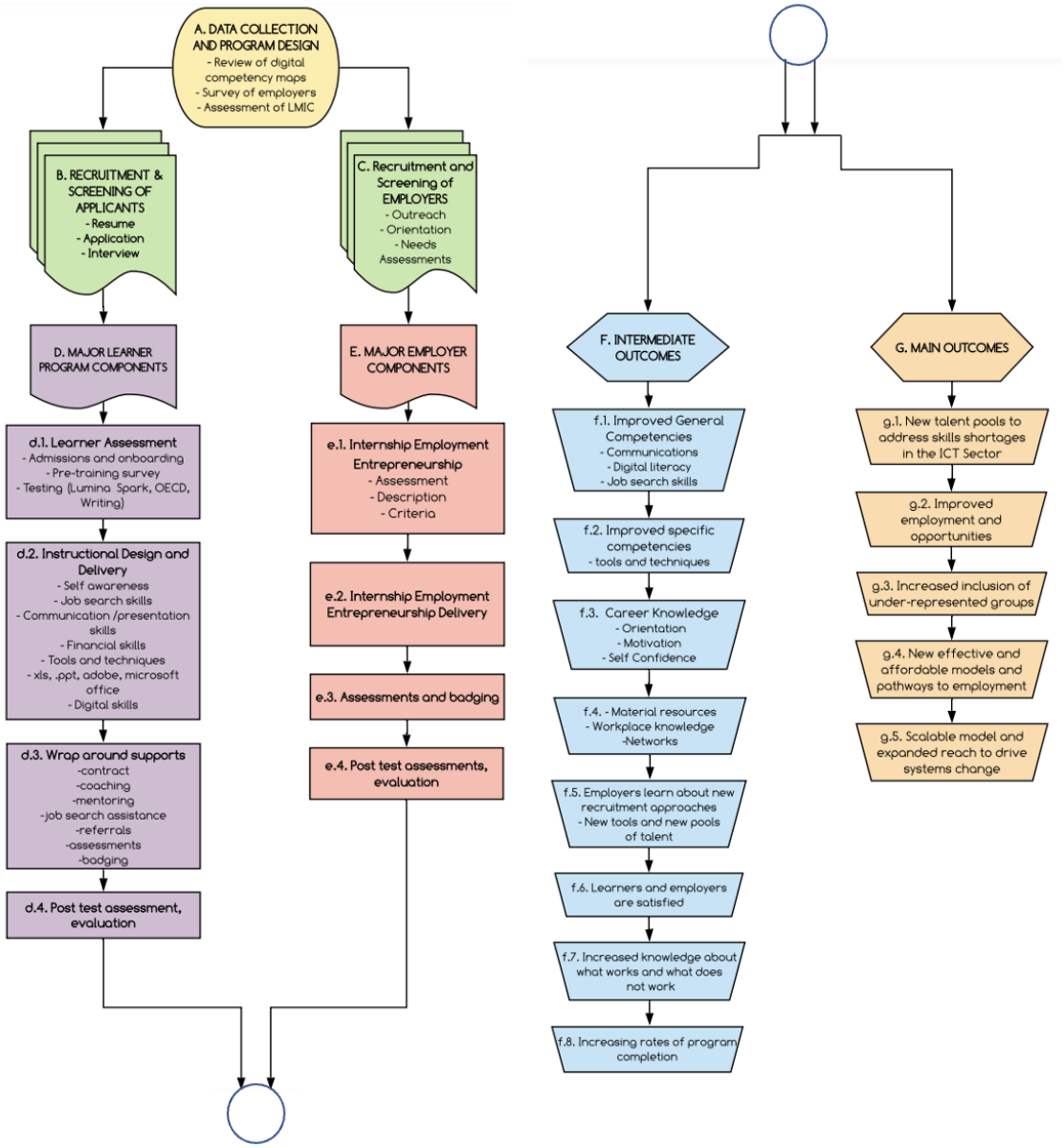
Assist employers in creating inclusive approaches

It is important to assist the employers in defining the skills they need, finding the right people for their job, and creating more inclusive workplaces.[79]

ADaPT Program Design

The Advanced Digital and Professional Training (ADaPT) Program is a work-integrated learning (WIL) program that was designed to bridge the skills gap between post-secondary education (PSE) graduates and the entry-level job market with a focus on digital skills. The process for developing the program has been evidence based and iterative, evolving to meet changing employer needs as well as the exigencies presented by the COVID-19 pandemic. Unique about the ADaPT model is the focus on addressing both supply (job seeker) and demand (employer) issues.

Figure 3: Representation of the ADaPT logic model



The program's design was based on a logic model informed by research to examine employer needs, competency frameworks and assessment methodologies. Recruitment processes were designed to attract diverse learners with the potential to succeed and were informed by rigorous assessments.

Curriculum was designed to address the competency frameworks with appropriate delivery methods and wrap around supports to address diverse learner and employer needs. Employers were provided with tools to better recruit and retain a diverse talent by reconsidering their approaches to job definition and recruitment as well as ways to create more inclusive workplaces starting with work integrated learning placements.

At each stage data are collected, analyzed and fed back to inform the program design using a variety of tools including an up-front skills assessment and psychographic assessments, pre- and post-testing and evaluation, and hands-on skills development combined with significant self-study and online learning.

Admission Requirements

Participants in the program must be post-secondary students or have completed post-secondary education. The selection process includes a range of techniques including interviews and testing with employers sometimes involved. Scores are assigned based on the applicant's GPA, written and verbal communication skills, resume, coachability, and interpersonal skills. Equity-deserving groups are prioritized Standardized tests are used to assess basic skills (OECD) as well as big 5 personality traits. Employability is another critical factor to the screening process as it is essential that ADaPT participants possess professional work and/or volunteer and extracurricular experience. Once the individual's spot in the cohort is secured, participants undergo a series of assessments such as Lumina Spark (i.e., a psychometric test used to match applicants and job positions), the OECD Education Skills Online (ESO) test, and the first of a series of skills assessment surveys.

Curriculum

The Core ADaPT Curriculum is comprised of workshops on both in-demand digital skills and competencies and professional or "human" skills and competencies. The list and number of workshops has evolved slightly over time and is validated periodically by employers through a Needs Assessment survey collected by phone. Core digital workshops include Intro to HTML Coding, Quantitative Methods using Excel, Data Analytics using Excel, UX Design Fundamentals, Adobe Illustrator and InDesign, and Search Engine Optimization & Google Analytics. Professional workshops include Business Writing, Career Development Strategies (resumes, LinkedIn profiles, etc.), Networking & Personal Branding, Communication Styles, Presentation Skills, Sales Fundamentals and Design Thinking. This Core Curriculum is designed to produce strong, entry-level 'hybrid workers' with a robust mix of the skills most employers require in the digital marketplace, in a short amount of time.

Since its inception, the ADaPT program has developed several different streams of training, including – but in addition to – the Core curriculum. Specifically, 1) the 'Core' stream consists of

approximately twenty workshops delivered either as a full-time bootcamp in May, or as a part-time program during evenings and weekends over seven to eight weeks in the Fall and Winter semesters. 2) Programs have been customized to employers - for example a customized program was developed for RBC co-op students, including new workshops on infographics and communication styles. Other employers followed suit including CIBC, Questrade, Interactive Ontario, and the Human Resources Professionals Association. 3) Intensive programs have also included specialized certifications including a Pegasystems certification course aimed at developing professional skills for internationally trained workers; a Salesforce certification course aimed at developing professional skills for internationally trained workers; and a data analytics bootcamp.

The core ADaPT curriculum is structured around specific competencies including:
Digital skills (e.g., Excel, Adobe Suite, Coding, SEO & Google Analytics and Big Data) and Professional skills (e.g., interviewing, writing, presenting, preparing resumes & cover letters, personal branding, social media, networking, research, and communication styles)
(see appendix xx for more detail)

Delivery Modes

To date, ADaPT has been offered in face to face, online and blended formats to create a scalable delivery approach and to accommodate diverse ways of learning. Three types of online programs were implemented in ADaPT 13 (2020) including ADaPT-Online, ADaPT-Blended, and ADaPT Live-Virtual. These three streams are differentiated based on delivery medium, type of instruction, and synchronicity.

ADaPT-Online is an asynchronous learning experience based on micro-learning with asynchronous video, audio, and written interaction opportunities between students to maintain a social-learning component and create a community of strong learners. This learning stream was implemented through the LinkedIn Learning platform and shared with participants through MAGNET.

ADaPT-Blended uses a hybrid instructional delivery method based on a combination of workshops delivered through ADaPT-Online and live/virtual workshops.

ADaPT Live-Virtual, meanwhile, consists of workshops in a fully online format as a response to the COVID-19 pandemic. As the transition from live to online delivery was unexpected and rapid, the students and instructors' unfamiliarity with e-learning mechanisms were the most challenging factors that ADaPT took into consideration. The delivery method for ADaPT Live-Virtual therefore combined both synchronous and asynchronous modes of online delivery. Synchronous lectures were delivered using video conferencing tools and were supported with posted readings, viewings, and assignments through the LMS Canvas. This pedagogical approach was adopted to manage participants' cognitive load by supplementing synchronous online lecture time with other learning activities without compromising either the quality of the program or the amount of content delivered. When the pandemic shutdown occurred mid-cohort in March of 2020, workshops that were originally scheduled to be delivered in person on

campus were rapidly shifted to delivery through Zoom, which continued for subsequent cohorts. (See Appendix 4).

Wraparound Supports

As part of its program model ADaPT offers a number of wraparound supports that enable the engagement of a wider range of participants:

Career coaching

Participants receive career counseling support to solidify their job search skills, with an emphasis on resume-writing, mock interviewing, networking, labour market research and navigating the hidden market. The type of career coaching support participants receive depends on their stream. Participants in the virtual classroom have ongoing access to career support with ADaPT's Career Counsellor, while participants in the online stream attend weekly virtual group meetings facilitated by the ADaPT Career Coordinator.

Work placement

The ADaPT team engages with employers by matching ADaPT participants for their entry level hiring needs. Throughout the program, participants are connected to potential job openings and are encouraged to compete for placements. Enrolling in a work placement is not a mandatory requirement for program completion. Improved employment and opportunities are a mandate of the program. The ADaPT team confirms meaningful and improved employment opportunities with employers, thereby verifying all positions are paid and not considered underemployment or precarious work. The team works closely with participants to understand their job, industry and company preferences.

By empowering our participants through these wrap-around supports, ADaPT participants are confident, motivated and have more knowledge around career development. Other supports include:

- The ADaPT team provides referrals to employment partners, previous ADaPTers, network connections and to instructors. This opens up hidden market opportunities, increases their connections and in many cases secured employment.
- The ADaPT Bulletin Board posts hidden job opportunities, resources, and events.
- Both streams are encouraged to compete in a Networking Game which encourages the participants to increase their social capital by networking and adding new connections on LinkedIn, conduct at least 2 informational interviews during the program and participate in one networking event. They are given the tools to succeed in the Career Development Strategies and Personal Branding/Networking workshops.

After virtual classroom participants finish the program, they continue to receive ongoing employment support and job search assistance from the ADaPT team, including notifications about employment opportunities and have access to postings via their bulletin board. Online stream receives support with job placements but does not receive employment support and has access to the bulletin board.

Employer Supports

ADaPT is committed to working with employers to meet their skills needs in order to enhance our participants' employment success. Engagement with employers happen a number of ways:

Needs Assessment/Surveys

Curriculum is finalized after we speak to employers through a needs assessment where we identify the skill gaps that employers are facing. This information is also captured through exit surveys we conduct who have hired one of our participants via placements. We have conversations via zoom/phone to identify the skills gap.

Engagement Process

Through our network, warm introductions from various partners (TECHNATION, Calgary Economic Development, Alberta Innovates, Thin Air Labs, etc.), LinkedIn paid ads, referrals (from our ADaPTers and employers), we schedule a 20-minute call via zoom to discuss ADaPT, the wage subsidy and to understand their entry level talent requirements, culture and fit. Employers then send the engagement team their job postings. The team identifies available talent from each cohort if the employer is open to remote talent. This process is comparable to a recruitment agency, except no fees are incurred to the employer to use these services. This is especially beneficial to start up organizations who have limited resources or no dedicated human resources professional. ADaPT bridges this gap.

Support for Inclusive Workplaces

Employers also have access to a range of supports to advance their Equity, Diversity and Inclusion practices including the Diversity Assessment Tool, a range of training and advisory services, and specialized tools such as the micropedia on micro aggressions or the hireimmigrants.ca and discoverability.ca resources. Pilot projects funded by ESDC including the ADaPT Align pilot, demonstrated the value of supporting the demand side of the marketplace with EDI tools. Recently, through the Future Skills Centre, the Diversity Institute has become a partner in the development of a Learning Management System to support SMEs across Canada which will include a range of EDI resources. Additionally, as an ecosystem partner with the 50-30 Challenge, DI is providing a wide range of resources to support organizations on their EDI journey including a host of online tools.

Other supports

- Bridge their talent pool gap to address the skills shortages within the ICT sector through internships and various meaningful employment opportunity (contract, entry level full-time roles). The ADaPT program curriculum is designed to bridge the key skills gap identified by the employers and help the participants better prepare for the demanding workplace.
- Provide employers with a diverse talent group at entry-level because the ADaPT program attracts a large pool of talent coming from many diverse backgrounds.

- Employer Information Sessions provides employers to promote their companies, opportunities and allows participants to network. These sessions are typically 30 minutes in length. Employers also educate our participants on career development. Topics include, Tips on Virtual Interviewing, How to be successful in your first 30, 60, 90 days of employment, demystifying the startup culture and recruitment agencies.

Adapting to COVID-19

The COVID-19 pandemic has had diverse effects on students, including increased stress with relation to financial concerns, uncertainty, disrupted routines and social isolation. COVID-19 caused labour market disruptions for not only the general Canadian population, but within the population, students were also affected as they are more likely to hold precarious jobs[80]. Precarious jobs were, and continue to be, the hardest hit during the pandemic, and students aged 20-24 had an employment rate of 29.8% in April 2020, which was down from 52.5% in February 2020[81]. In addition to the labour market downturn, students were also affected by the closure of colleges and universities across Canada which resulted in classes shifting to online platforms[82]. In addition, many students were forced to move out of dorms and residences and strategize on how to move forward after academic co-ops, placements and applied learning experiences were cancelled[83]. In April of this year the Federal Government of Canada launched the Canadian Emergency Student Benefit which resulted in $9 billion funding for post-secondary students and recent graduates who were ineligible for CERB[84].

Three main considerations were approached when transitioning from the traditional delivery mode to E-learning:

- Maintaining the instructor-led sessions: This is a specificity of the live/ live-virtual ADaPT when comparing this stream with the ADaPT-Online stream which is totally self-directed and asynchronous.
- Avoiding all day virtual meetings: Some of the live ADaPT workshops consist of day-long workshops where participants meet, learn and practice all together. Replicating the same experience through all-day video calls when transitioning from the live delivery mode to the online mode would not be compliant with E-learning best practices. An alternative strategy of redistributing the learning content and adopting a mix of synchronous and asynchronous learning strategy was adopted.
- Developing a motivation strategy: Transitioning from the live to the online delivery mode can affect the participants motivation as the learners' interactions and meeting durations are reduced compared to the live version of ADaPT. In this perspective, a best practice document was implemented and shared with participants including tips such as having all participants' cameras open throughout all video-calls and dressing professionally. In addition, collaborative activities using Zoom's breakout rooms and collaborative spaces such as Mural were implemented in all workshops live sessions.

The team moved quickly to curate online resources and creating online collaborative activities that mimic the ADaPT experience. The materials used to build this E-learning experience were mapped through implementing learning paths hosted in the LinkedIn Learning platform and curating resources from LinkedIn Learning, Khan Academy, Top ranked articles and eBooks as

well as custom designed modules. To maintain ADaPT's social-learning component, collaborative activities were designed to bring interactivity to the online learning pathways while respecting the chosen asynchronous learning style. In this perspective, video-forums such as Flipgrid and collaborative boards such as Mural and Padlet were integrated into this learning experience. The interaction between students was designed to guide them, providing feedback that serves as a peer-to-peer assessment strategy. In the same context, summative assessment strategies were implemented through quizzes and automatically graded activities. The design of each of the online workshops was iterative with a prototyping and testing stage.

ADaPT Program Evaluation

Overview

To date, ADaPT has successfully delivered 31 cohorts in a variety of formats, for more than 1200 post-secondary graduates and graduating students and placed over 90% of them into meaningful employment. Participant satisfaction rates stand at 88%. ADaPT participants come from diverse backgrounds, with 79.4% self-identifying as belonging to one or more equity-deserving groups and representing 101 post-secondary institutions globally.

To maintain a high standard of program implementation and to ensure effective service delivery, the ADaPT team collects data across 4 different stages of program implementation as part of ongoing monitoring and evaluation efforts. Data is gathered primarily through online surveys which, in addition to demographics, gather information on participants' perceptions of their proficiency in several identified skills areas and track their progress over time. Participation in the surveys is not mandatory but encouraged.

Since the first cohort was offered in 2014, around 1,275 surveys have been completed and analyzed to study the impact of the program.

Methodology

In order to evaluate the effectiveness of the ADaPT program, online surveys are employed as the primary method of data collection at four different stages of the program. These four stages are outlined below:

- **Stage 1**: Surveys are completed prior to training.
- **Stage 2**: Surveys are completed immediately post training.
- **Stage 3**: Surveys are completed four months post training (i.e., during internship); and
- **Stage 4**: Surveys are completed ten months post training.

Since the ADaPT 14 cohort (Fall 2020), stage 3 surveys have been administered three months post-training while stage 4 surveys are issued nine months post-training at the request of our program evaluation consultants. The survey questions are the same at each stage and include questions on demographics as well as participant perceptions of both their proficiency across a number of skills (e.g., essential, technical, interpersonal, thinking, etc.) and their needs for further professional development.

The findings in the sections below reflect data from 1,275 surveys that have been administered to participants from ADaPT 1 through 12 cohorts. The distribution of responses by stage are shown in Table 1. The low response rates in stage 4 prevented any meaningful sub-analyses by groups to be run. Moreover, due to missing data surrounding several key questions found in

stage 4, only results from stages 1 to 3 are provided in this report. Descriptive analysis was used to analyze the data and present the findings of the survey.

Table 1: Survey Responses by Stage

Stage	n
Stage 1 (pre-training)	483
Stage 2 (post-training)	391
Stage 3 (4 months post-training)	254
Stage 4 (6 months post-training)	147
Total	**1275**

To examine the representativeness of the survey sample, demographic information from stage 1 of the surveys were compared to demographic information from the application forms of the participants trained. In Table 2, it is evident that the demographic make-up of the sample closely resembles the demographic make-up of the ADaPT participants. However, it should be noted that there were lower survey response rates for persons with a disability. Due to the low sample size of those individuals who identified as Indigenous, LGBTQ, and persons with a disability, a sub-analysis of the survey data with this group was not possible. Therefore, sub-analysis by groups were only performed for women and racialized persons.

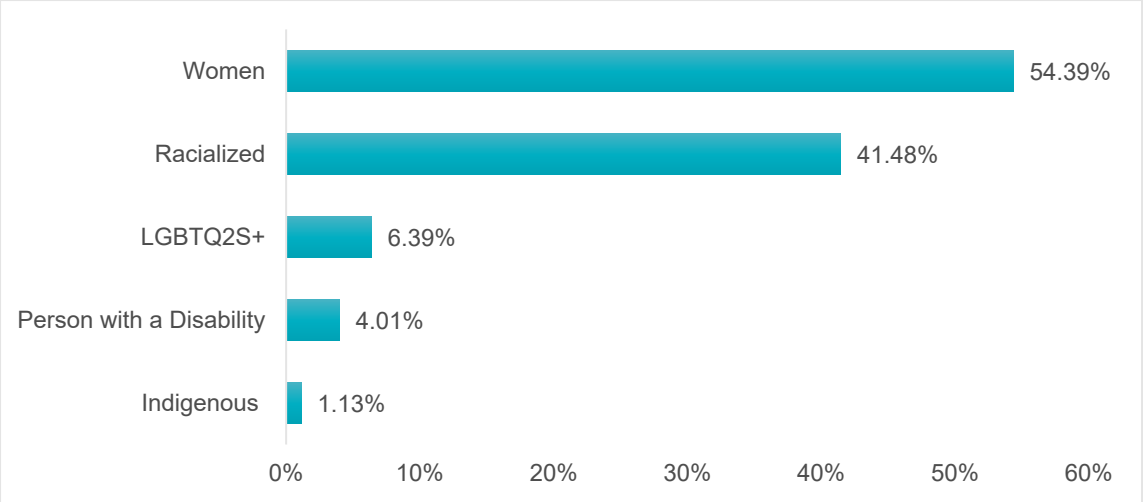
Table 2: Comparative demographic data from Stage 1 surveys and ADaPT participants

Groups	Survey Participants (%)	ADaPT Participants (%)
Women	53.00%	54.31%
Racialized	41.20%	41.30%
Persons with a disability	2.90%	4.10%
Indigenous	1.04%	0.99%
LGBTQ	6.21%	6.08%

Diverse Recruitment

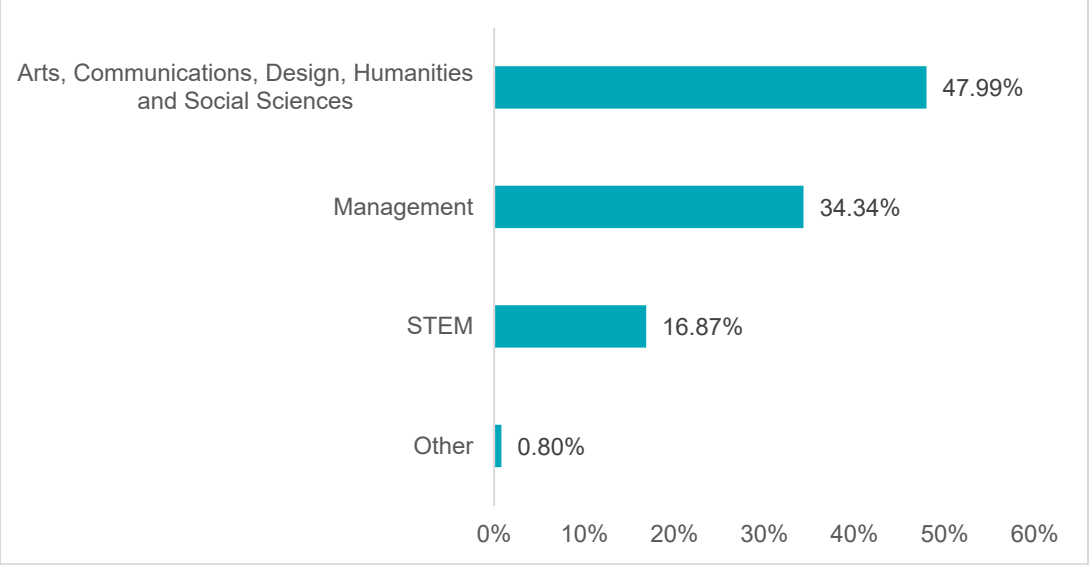
A key finding of the Blueprint qualitative report was that ADaPT successfully recruits diverse participants. Since its inception, ADaPT has recruited diverse participants. Figure 4 shows the distribution of ADaPT participants from each of the equity-seeking groups mentioned earlier. Of the 798 individuals that responded to the demographic questions, 54% self-identified as women, 41% as racialized, 6% as LGBTQ, and 4% identified as a person with disability. Approximately 1% of ADaPT participants identified as Indigenous.

Figure 4: Representation of equity-seeking groups in the ADaPT Program



As mentioned previously, since 2016, ADaPT has accepted applicants from a variety of disciplines. Figure 5 shows the distribution of ADaPT participants by field of study broken down by the type of program. Of the 498 individuals trained in the Core program, the majority of participants were from the arts, humanities, and social sciences (48%) followed by management (34%), and then STEM fields (17%).

Figure 5: Distribution of field of study for participants in the ADaPT program



Since 2014, ADaPT has maintained a high placement rate. Specifically, 90% percent of participants have been placed into meaningful, paid employment after participating in the ADaPT program (See Table 4). This high overall placement rate highlights the success of the program in developing the skills that are coveted by employers. This high placement rate also differentiates the program from other programming that solely focuses on training by

successfully producing tangible connections between training and direct placement opportunities in the workforce.

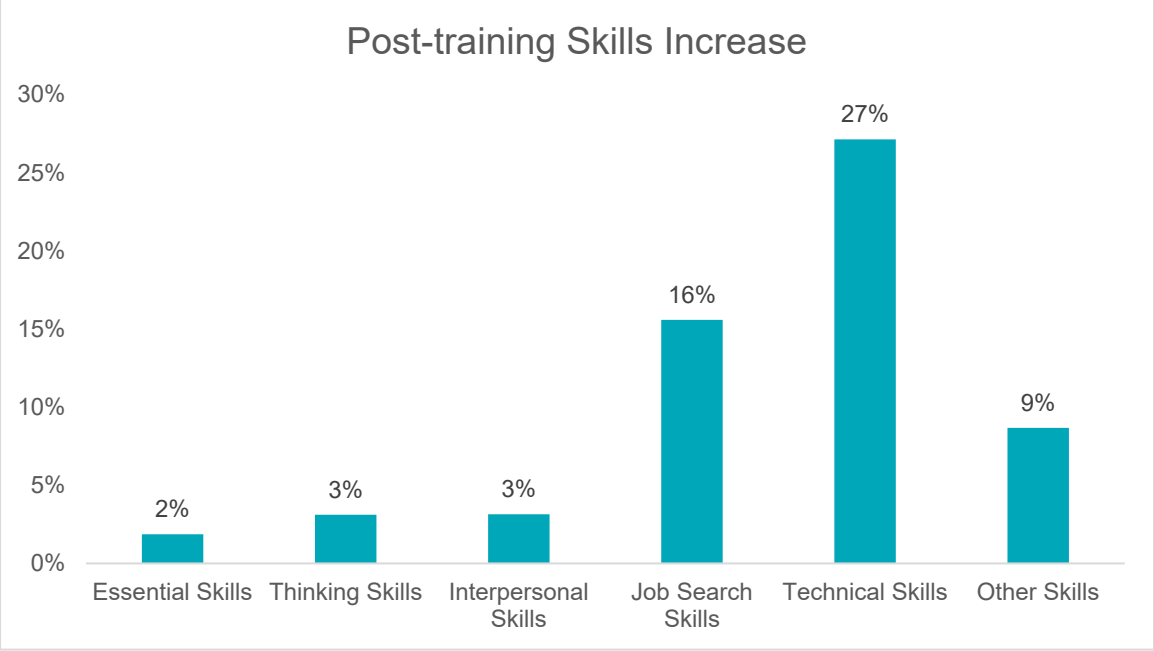
The COVID-19 pandemic in Canada impacted the jobs of many, resulting in job loss for 600,000 Canadians and another 400,000 underemployed[85]. Despite the slow recovery of the job market,[86] the Winter 2020 cohort saw 90% of its participants obtain placements. Similarly, the Fall 2020 cohort had a 94% placement rate in Toronto and an 84% placement rate in Calgary – an overwhelmingly difficult employment market during the pandemic. ADaPT program's job placement rates slightly exceed the most recent Ontario data for employment six-month post-graduation of 89%.

Increased Skill Development

ADaPT participants consistently self-identify as demonstrating increased skill levels in most skill areas, though the levels range widely depending on the skill. The highest increases occur in Advanced Digital Skills/tools, followed by Career Planning and Development. There are some differences among cohorts and populations. The Toronto cohort showed higher levels of skills development than Calgary, which had higher tech skill levels in the ''pre-training' or Stage 1 survey.

In Figure 6, increases in individual perceptions of skill proficiency are measured between Stage 1 (pre-training) and Stage 2 (post-training) for ADaPT participants reported that their skill proficiency increased from pre-training for every skill measured with the largest increase being in technical and job search skills.

Figure 6: Skills development evaluation post training for ADaPT participants



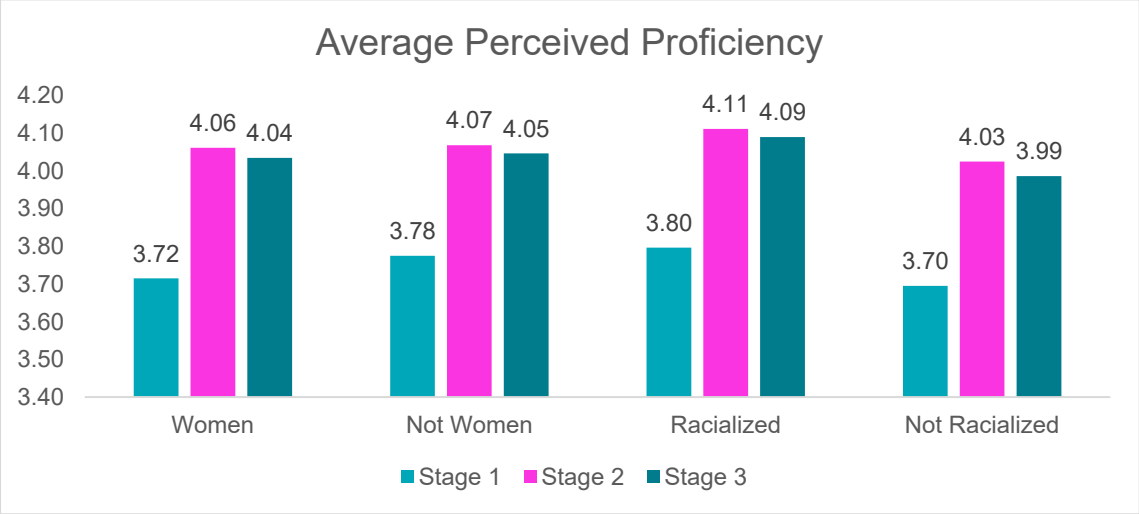
The Blueprint qualitative report noted that ADaPT's holistic job development approach results in increased participant confidence. Three reasons were identified: instruction in career planning and job search skills, support from ADaPT staff, and workplace-relevant skills curriculum (mix of digital and professional skills). The qualitative report noted how this mirrors the results of the pre and post skills surveys. It also noted that many interviewed participants highlighted the value of networking in ADaPT. Three of the most-used skills identified by participants were Oral Communication, Data Visualization, and Digital Marketing.

Women and racialized people

The ADaPT program demonstrated benefits for both women and racialized people – these two groups reported significant improvements in perceptions of skills proficiencies. Meanwhile, the analysis also showed a decrease in both women's and racialized participants' perceived need for assistance with a variety of skills, which means they have gained some confidence during the training in their skills.

Of interest is the fact that women started with slightly lower perceptions of skills (3.72 versus 3.78 but ended at almost the same level as men (4.04 versus 4.05). Racialized participants started and ended at a higher level of perceive proficiency than non-racialized participants (see Figure 7)

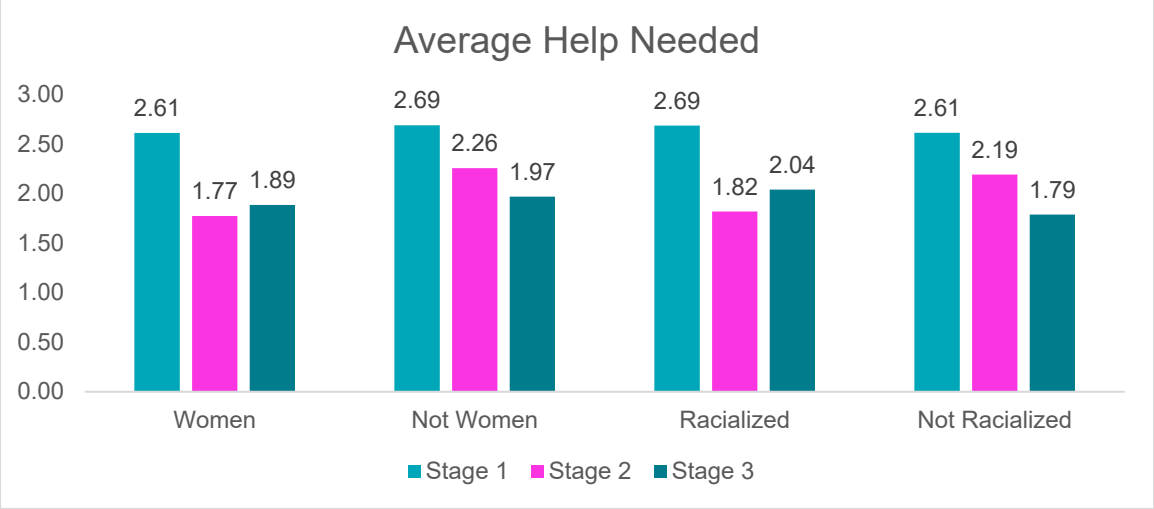
Figure 7: Average Proficiency Scores



In Figure 8, average perceived assistance needed in a variety of skills was measured by stage for men and women as well as racialized and non-racialized participants in the ADaPT program. It is evident that for all participants, average perceived assistance needed decreases for every measured skill from pre-training to stage 2 (i.e., post training). However, in the case of both female and racialized minority participants, average perceived assistance increases from stage 2 to stage 3 (i.e., the internship placement). This is in contrast with non-women and non-racialized group whose perceived average assistance continues to decrease from stage 2 to stage 3. This finding might suggest that women, men, and both racialized and non-racialized

groups experience their internship/work in different ways perhaps facing more challenges as a result of gender or race.

Figure 8: Average Help Needed Scores



The impact of online delivery

The Pandemic caused ADaPT to pivot to two delivery streams: Virtual Classroom (synchronous) and Online Self-Directed (asynchronous). Several cohorts of these two delivery streams were evaluated in the recent Blueprint Skills Reports. For its first online cohort, ADaPT offered approximately 40 hours of online training to a total of 11 participants - 9 of which were placed into meaningful employment. Akin to the live version of ADaPT, the curriculum modules for ADaPT 13 onwards were developed with the aim of improving participants' basic professional and technology skills. The curriculum includes workshops in digital skills such as in the use of Excel and Google Analytics for engine optimization (SEO) as well as varied professional skills (e.g., interviewing, presenting, writing resumes and cover letters, personal branding, networking, and communication styles).

Evaluation results based on the recent online and virtual cohorts (A20, A21, A22, and A24) suggest that the participants of both online and virtual cohorts expressed high satisfaction levels and mentioned high likelihood of recommending the program to others; with over 90% respondents finding it useful in improving both their professional and digital skills. Both Online and Virtual Classroom respondents saw significant gains in advanced digital skills, which was evident from the placement results as most participants from these cohorts were employed in digital roles within three months of program completion, with the highest increase among the Toronto Virtual Classroom stream and with high job satisfaction scores and higher job security.

In this section, we present and discuss the results of analyses of data related to student self-perception in relation to skills proficiency and success at two different stages — stage 1 (pre-training) and stage 2 (post-training). Table 3 shows that, regardless of delivery method (i.e., blended, classroom, online), average skills proficiency increased from pre-training (Stage 1) to post-training (Stage 2). Moreover, average proficiency scores for participants enrolled in ADaPT

online were higher for every single measured skill than those of participants in other program streams.

Table 3: Average skills proficiency change from pre-training to post-training

Skills	Blended		Classroom		Online	
	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2
Essential Skills	4.31	4.43	4.08	4.25	4.6	4.77
Thinking Skills	4.13	4.28	3.97	4.18	4.38	4.63
Interpersonal Skills	4.08	4.17	3.91	4.20	4.53	4.48
Job Search Skills	3.31	3.93	3.09	3.74	3.70	4.33
Technical Skills	2.86	3.14	2.59	3.23	2.76	3.64

Evaluation of Employers

An important dimension of the program is the centrality of employers in the development and delivery of the program. The placement rates for participants have averaged over 90% even during COVID. Table 4 below shows these results by cohort

Table 4: ADaPT Placement Summary

Time Period	Cohort	Trained	# Placed	% Placed
May 2014	ADaPT 1	31	31	100%
May 2015	ADaPT 2	28	26	93%
Fall 2015	ADaPT 3	25	23	92%
Winter 2016	ADaPT 4	46	39	85%
May 2016	ADaPT 5	35	33	94%
June 2016	ADaPT 6 (RBC)	19	18	95%
Fall 2016	ADaPT 7 (RBC)	31	28	90%
Winter 2017	ADaPT 8 (RBC)	39	38	97%
Winter 2017	HRPA	28	28	100%
Winter 2017	IO	17	17	100%
Winter 2017	Questrade	22	22	100%
Winter 2017	CIBC	24	24	100%
Winter 2017	Loblaws	2	2	100%
Winter 2017	Compass Group	1	1	100%
Winter 2017	TD	22	22	100%
Winter 2017	Osler	5	5	100%
Summer 2017	ADaPT / PEGA	16	12	75%
Winter 2018	ADaPT 9	39	34	87%
Winter 2018	ADaPT 9 (RBC)	31	31	100%
Winter 2018	ADaPT 10 (Bootcamp)	36	31	86%
Summer 2018	ADaPT RBC S18	31	31	100%
Summer 2018	Data Analytics	15	12	80%

Fall 2018	ADaPT Salesforce	21	17	81%
Fall 2018	ADaPT 11 (RBC)	36	36	100%
Fall 2018	ADaPT 11 Core	36	30	83%
Winter 2019	ADaPT 12 Core	29	22	76%
Winter 2019	ADaPT 12 (RBC)	23	23	100%
Winter 2019	ADaPT Pega	8	2	25%
Winter 2020	ADaPT 13 Classroom	17	15	88%
Winter 2020	ADaPT 13 Blended	21	20	95%
Winter 2020	ADaPT 13 Online	11	9	82%
Fall 2020	ADaPT 14 TO Virtual Classroom	29	27	93%
Fall 2020	ADaPT 14 TO Online self-directed	19	18	95%
Fall 2020	ADaPT 15 Calgary Virtual Classroom	23	23	100%
Fall 2020	ADaPT 15 Calgary Online Self-directed	22	20	91%
Winter 2021	ADaPT 16 Calgary Virtual Classroom	22	21	96%
Winter 2021	ADaPT 16 Calgary Online Self-directed	16	16	100%
2021	ADaPT 17 Virtual Classroom	15	12	90%
2021	ADaPT 17 Online Self-directed	14	14	100%
2021	ADaPT 21 Calgary Virtual Classroom	19	16	84%
2021	ADaPT 21 Calgary Online Self-directed	15	13	87%
2022	ADaPT 24 Calgary Virtual Classroom	8	2	25%
2022	ADaPT 24 Calgary Online Self-directed	10	3	30%
Total		**1114**	**1008**	**90%**

Success Factors

There are a number of factors which have contributed to the success of the program

Employer Centered

As a labour market responsive program designed to address the Canadian skills gap, ADaPT takes a strategic and intentional employer-centered approach to its curriculum and additional supports. Dedicated ADaPT team members constantly work with employers to validate the training, and match program participants with paid work opportunities. In some cases, employers have been directly involved in applicant screening, such as for the Pegasystems cohorts and the Core cohorts since the pandemic have routinely scheduled employer info sessions and meet and greets with the participants on a near-weekly basis. These sessions, along with Employer Needs Assessments, surveys, meetings and conversations are all methods used to involve and serve employers in the program at a deep level.

Wraparound Supports

ADaPT is not merely a skills training program. A significant part of the cohort-based participant experience is access to either individual or group support from dedicated staff. These supports include matching with paid work opportunities, mock interview coaching and preparation sessions, and personal assistance with job search strategies, resume and cover letter review, LinkedIn profiles, and other individualized supports as needed. For several years there has been at least one certified Career Coach on the ADaPT team.

Adaptability

ADaPT continues to be responsive and identifies opportunities for improvement, the program effectively pivoted when the pandemic began, the expansion to Alberta went smoothly, and the Online stream opens ADaPT to people it could not otherwise reach.

Future Prospects

This delivery stream offers the potential to reach more groups in need of upskilling in the future, such as mid-career workers. The program is also expanding to youth from the equity-deserving groups – for 2022/23 ADaPT courses in foundational digital/tech skills such as Excel and SEO & Google Analytics, as well career readiness skills such as Communication Styles, Business Writing, Project Management and Time Management will be offered to 25-30 Grade 11-12 Peel Students with a focus on Black and Indigenous students, who will receive badges for successful completion. Collaborating with the Canada Digital Adoption Program (CDAP) and Ontario Chamber of Commerce (OCC), ADaPT is also planning to run a unique three-year program designed for high school graduates, post-secondary (PSE) students, or recent PSE graduates offering training to support small and medium enterprises with their online presence and help digitize business operations. Blueprint is currently overseeing a large-scale randomized control to compare different components of the program and their impact on outcomes.

Conclusion

The assessment of the ADaPT program has demonstrated positive outcome towards bridging the skills gap between the PSE graduates and the employers. The ADaPT program is an action-research project demonstrating a successful hybrid model for skills development with an aim of expanding the talent pool and advancing inclusion, by providing alternative pathways into ICT and digital roles for graduates of various academic backgrounds. To cater to a wider audience, the ADaPT program has been offered in face to face, online and blended formats to create a scalable delivery approach and to accommodate diverse ways of learning.

The success of the program is associated with several features of the program, such as being employer-led, focused on competencies, wrap-around supports, and addressing demand as well as supply. First, ADaPT is committed to working with employers to meet their skills needs. The curriculum, for example, is developed based on a thorough understanding of employers' needs through surveys. The program also proactively engages employers in various forms, including providing online introduction or delivering Employer Information Sessions. Offering skills training aligned with employers' actual needs, the ADaPT program has evolved into a promising tool to facilitate a reduction in the skills gaps identified across numerous studies.

Another factor is that the program was designed to focus on competencies. While participants' increased self-confidence was primarily attributed to three factors - instruction in career planning and job search skills, relentless support from the ADaPT program staffs, and workplace-relevant skills curriculum (mix of digital and professional skills) - the highest skills increases were reported in the areas of advanced digital skills/tools followed by career planning and development skills. Three of the most-used skills identified by participants were Oral Communication, Data Visualization, and Digital Marketing. Because of the focus is on competencies, the program can be tailored for different groups as trainees, who could be new graduates or mid-career jobseekers from equity-deserving groups and for different employers, which include not only large corporations but also small and medium enterprises.

Furthermore, the ADaPT program has been offering a number of wraparound supports that enable the engagement of a wider range of participants, like career coaching, and work placement. To widen the existing network and boost job opportunities for the participants, the ADaPT team has been providing referrals to employment partners, previous ADaPTers, network connections and to instructors. The ADaPT team has been working constantly with employers to meet their skills needs and to enhance the employment success of the participants. Employer engagement was ensured through several ways, including training collaborations, partnerships, and needs assessment activities.

Finally, ADaPT is designed in a way to simultaneously address the needs of demand and supply sides, i.e., employers and jobseekers. The program continues to be responsive to its stakeholders' needs, identifying opportunities for continued improvement. As our society

becomes more digitized than ever in a post-pandemic era, programs such as ADaPT both serve to fill the increasing demand for micro-credentials and fit in with ESDC's skills for success model.

Over the years, the ADaPT program has evolved into a powerful tool to facilitate the reduction of skills gap identified by many studies as well as introduce relevant training programs that resonates with the demand of the employers. Through the ADaPT program, participants have consistently self-identified themselves as a more confident and comparatively better skilled individuals in multiple areas after the program completion, with highest increase reported in the Advanced Digital Skills/tools, followed by Career Planning and Development domain.

ADaPT has successfully recruited a diverse group of participants over the years. Evaluation reports suggest that ADaPT's holistic job development approach has resulted in an increased participant confidence, mainly due to three reasons: instruction in career planning and job search skills, support from ADaPT staff, and workplace-relevant skills curriculum (mix of digital and professional skills). Three of the most-used skills identified by participants were Oral Communication, Data Visualization, and Digital Marketing.

ADaPT continues to be responsive and identifies opportunities for improvement, the program effectively pivoted when the pandemic began, and the Online stream opens ADaPT to people it could not have otherwise reached. This delivery stream offers the potential to reach more groups in need of upskilling in the future, such as mid-career workers. As the society becomes more digitized that ever in the post-pandemic era, programs such as ADaPT fit into the demand for micro-credentials and fit in ESDC's essential skills model. Additionally, ADaPT program can be expanded and offer even more customized industry training on specific software and other technologies to serve the growing need of employers. The success of the ADaPT program has led to expansion from the Future Skills Centre and TECNATION.

"ADaPT program taught me how to navigate the modern workplace, pushed me to develop myself personally, and open a path for me to shine. I came out of every single training session enriched, and rapidly found myself, not pushed, but growing into my professional life. I was surrounded by the most talented peers and passionate instructors, and through them rediscovered my hope for a better future. Thank you, ADaPT!"

Cited by a participant from Cohort A9 of the ADaPT program, who was placed as a Business Analyst after the program completion

Appendices

Appendix 1: Major streams provided by ADaPT

The ADaPT core involves 80+ hours of hands-on workshops in the areas of technology and digital skills digital literacy, career planning, personal branding, networking, business financials and professional communication skills	
Digital workshops Quantitative Methods and Analysis with Excel Big Data and Analytics SEO and Google Analytics Intro to HTML and CSS Coding Intro to Blockchain Adobe Illustrator Adobe Infographics using Illustrator Adobe InDesign SEM Professional workshops Presentation Skills PowerPoint Business Writing Communication Styles Networking Skills Personal Branding Business Financials Lumina Spark Psychometric Portraits Writing Effectively for an Audience Research Methods Design Thinking Use experience (UX) Career Planning	Networking opportunities with potential employers
RBC Custom: 10 workshops Intensive hands-on workshops are provided in the areas of digital skills, financial planning and professional communication skills. Training given to enhance soft skills and self-confidence	
Customized RBC workshops Financial Literacy Communication Styles Adobe Infographics Other workshops Lumina Spark Financial Strategies for Students Adobe Illustrator Adobe InDesign Communication Styles Quantitative Methods with Excel Intro to HTML and CSS coding Business Writing Presentations and PowerPoint	
Sales force Collaboration with employees from Salesforce (training provider) and ADaPT (management and logistics) Focused training on how to build apps and administer Salesforce while gaining access to job opportunities, free of cost to participants, Resume and Interview Preparation Communications Workshops (Business Writing, Presentation Skills	Training occurred October 2018 Industry presentations by PwC, Slalom, Sunlife Financial

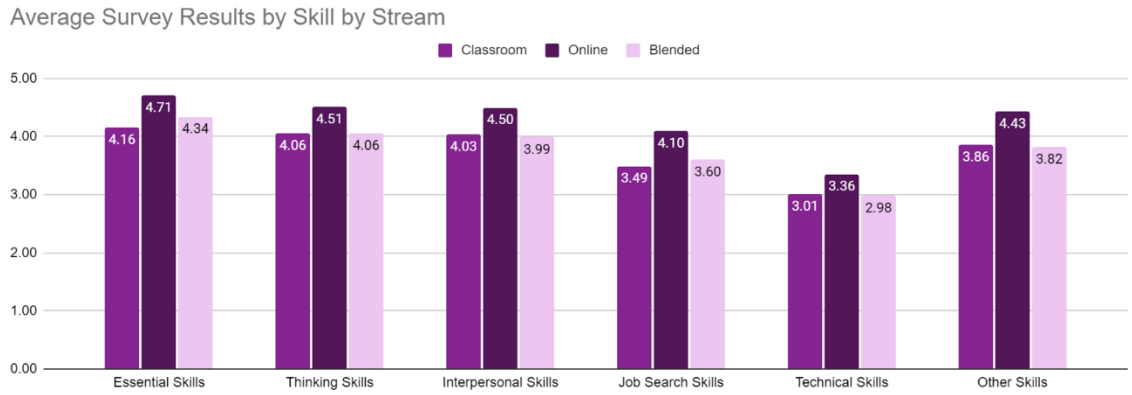
and PowerPoint)	
PEGA Systems: Training on core principles on the #1 software for customer engagement and digital process automation as well as training on common development tasks such as case management, data modeling, user interface and information exchange	
Pega Overview Platform and Case Life Case Career Planning (networking and resume tips for job searching) Case Data (automating business policies and user interface) Communications (business writing and presentation skills), Business Reports Testing and Debugging	Summer 2017 cohort targeted internationally trained workers. Spring 2019 cohort targeted women in tech and internationally trained workers Hiring partners of this stream included Cognizant Technology Solutions, Tata Consulting Services, Infosys, RulesCube Information sessions with RulesCube and Infosys and Tata Fall 2020 cohort targeting candidates for CSIS (Canadian Security Intelligence Service).
Data Analytics – 1 week In partnership with the General Assembly Toronto (formerly Bitmaker) Provides training to understand what data analytics and data science can accomplish as problem-solving techniques, as well as how to communicate data-driven insights to an audience in a way that effectively drives action	
Exploring Data with Excel Managing Data with SQL Data Aggregation in SQL Communication Data Analysis with Tableau	Course took place August 2018

Appendix 2: Early Results of the Blueprint Evaluation of ADaPT Program

Early Results

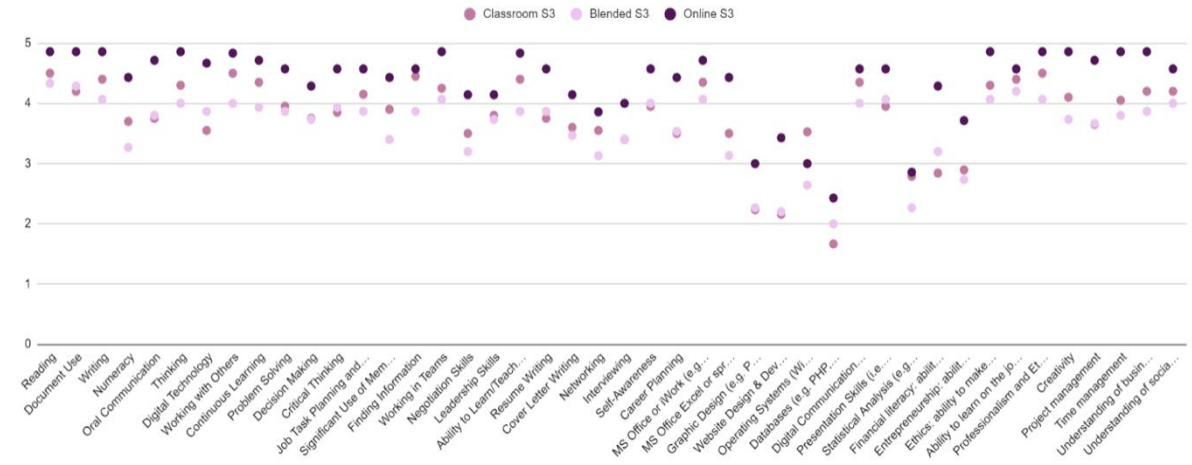
Initial results indicate better than expected learning outcomes for participants in the Online stream. The following table illustrates that, for the first (and only) cohort to feature three delivery streams, the online learners consistently demonstrated the highest skills development levels across all six skills areas.

Figure 9: Average Survey Results by Skill



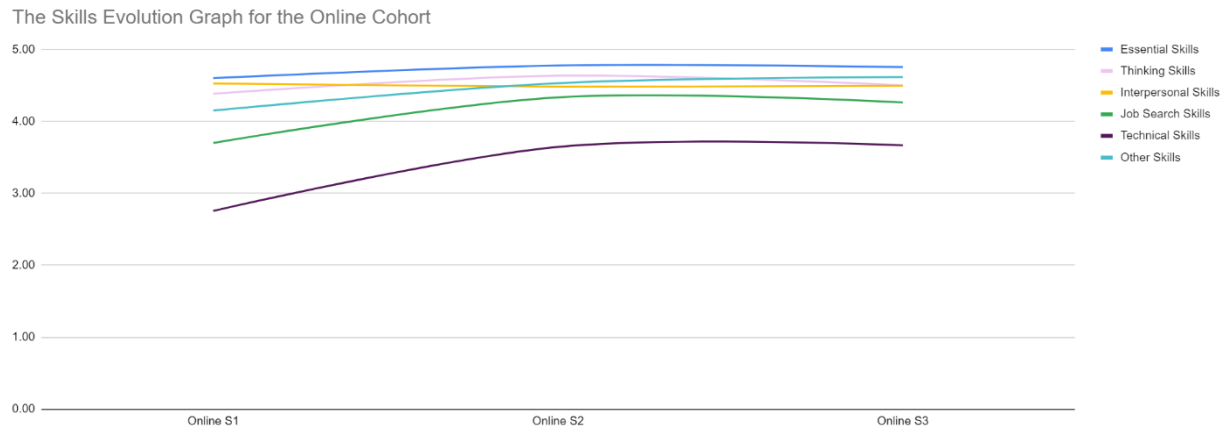
This is further illustrated when looking at the self-reported results across each of the individual skills and competencies (over 40), as illustrated in Figure 10 below. Again, the Online stream scored highest among the three streams in nearly all the skills.

Figure 10: Self-reported results across each of the individual skills and competencies



The inaugural self-directed Online stream also reported an increase in skill development in nearly all the six skills areas between the Stage 1 and Stage 2 surveys (S1 and S2), the flattened out between Stage 2 and Stage 3 (S3, typically when the participants begin their work placements). See Figure 11 below.

Figure 11: The Skills Evolution Graph



Note that the one skills area where the first online cohort showed a decline between Stages 2 and 3 was in Job Search skills. This is understandable given that most of the participants have commenced employment between the Stage 2 and Stage 3 surveys.

However, one significant skills area where this cohort reported no increase in skills development was in interpersonal skills. This would seem to indicate that independent, self-directed online learning does not allow for the participants to develop these critical skills to the same degree as other delivery streams. The ADaPT program addresses this situation for the Online stream with the opportunity for weekly group check-in meetings, and invitations to all the employer networking sessions.

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