Intervening early with youth with developmental disabilities using a tailored approach that considers each youth's unique strengths and interests will improve future employment outcomes for these youth.

IMPACT 2020 – 2023

Summative Report
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Executive Summary

As of March 31, 2019, only 24.2% of individuals with intellectual and developmental disabilities (IDD) supported by Community Living BC (CLBC) reported some employment earnings, with 82% of these reporting earnings below $10,000 a year (CLBC, 2019). Funded by the BC Ministry of Social development and Poverty Reduction, IMPACT, a partnership between the BC Employment Network (BCEN) and the University of British Columbia Canadian Institute for Inclusion and Citizenship (CIIC), aimed to address these low employment outcomes by intervening early with youth with IDD between the ages of 15 - 19.

The IMPACT project officially began in 2020 with eight member organizations of BCEN (https://bcenetwork.ca) located in the Lower Mainland and the Southern Vancouver Island of BC. The project involved three cohorts of youth over three years (2020, 2021, 2022). Each of the eight agencies developed and delivered summer youth employment interventions, and a neutral, arms-length evaluation was conducted by researchers from the CIIC. The UBC Behavioural Research Ethics Board granted ethics approval for this research.

The research investigated whether and how intervening early with youth with IDD using tailored approaches to employment positively impacts employment outcomes. A concurrent mixed methods formative evaluation design informed the research (Creswell & Plano Clark, 2011). This summative report details the findings of the IMPACT program across all three cohorts. That said, following Cohort 1, adjustments were made to some of the data collection instruments based on agency feedback (e.g., questions related to “knowledge about employment”). Given these changes, some combined analyses could only be done for Cohorts 2 and 3. When possible combined analyses were completed for all three cohorts.

Data related to agency intervention and youth engagement were collected through several instruments, including pre- and post-interviews. These interviews included demographic information, an assessment of level of support (level of disability), questions about the youth’s knowledge of employment, and the completion of a Meticulon Assessment Survey (MAS, 2020). This scale is an assessment instrument covering eleven employment domains for getting a job and job retention; for example, organization and teamwork. In addition, agency staff systematically recorded their youth’s activities in an ongoing intervention diary to document the youth’s engagement in the IMPACT project. During the post-interview (exit interview), youth were also asked about their experiences in the program. Finally, the parents of the youth were asked to complete the MAS as it pertained to their youth at the beginning and end of the employment interventions, and the parents were invited to complete a post-intervention online survey eliciting their perspectives of IMPACT.

Over the three years, 283 youth participated in IMPACT. Two-hundred-fifty-three youth actively participated in one of the agencies’ IMPACT programs (Cohort 1 n = 72; Cohort 2 n = 91; Cohort 3 n = 90), and 30 youth either declined to participate or were waitlisted and agreed to complete the entrance and exit interviews as part of the control group.

Outcomes reveal an increase in overall paid and unpaid work experience through the youth's engagement with IMPACT. Across all three cohorts, 114 (45.1%) gained paid work experience during their participation in IMPACT. One-hundred-twenty-five youth (49.4%) gained unpaid work experience. These two categories are not mutually exclusive as a youth could obtain both paid and unpaid work experiences and were able to hold more than one job at a time.

In addition, the results of a combined analyses across all three cohorts of the MAS for 253 active participants (from entrance to exit) demonstrate statistically significant increases in nine of the eleven employment domains (MAS): Time Expectations, Organization, Authority, Teamwork, Perseverance, Responsibility, Mindfulness, Self-Awareness, and Personal Appearance.

When asked about their experiences during IMPACT, 193 (77.5%) of the youth agreed or strongly agreed that they were satisfied with their experience in the program. Of the 102 parents/caregivers who completed the online survey, 82.7% responded yes to the statement, "*As a parent/caregiver, I noticed changes in my youth's behaviour, attitude, and actions during the course of the summer employment program*."

In conclusion, the summative results confirm the overall objective of IMPACT and demonstrate positive change in the youth's employability domains, knowledge about employment, and work experience. Results also indicate that the agencies' interventions with participating youth improved the youth's unique strengths, interests, and confidence about their employment and work skills

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Introduction

In British Columbia (BC), only 24.2% of individuals with intellectual and developmental disabilities (IDD) indicate some kind of employment (CLBC, 2019); and, when employed, individuals with IDD receive low wages, work few hours, and their work sometimes takes place in segregated settings (Almalky, 2020; Carter et al., 2012; Grossi et al., 2020; Grigal et al., 2014; Khayatzadeh-Mahani et al., 2020; Smith et al., 2021). In fact, in BC 82% of individuals with IDD make under $10,000/year. These statistics are striking given the importance of employment for most working-age adults. Work is a major aspiration for people with IDD and a key mechanism for enacting social inclusion (Almalky, 2020; Cramm et al., 2009; Flores et al., 2011; Humber 2014; Johoda et al., 2009; Lysaght et al., 2012). Employment is an important means through which individuals with IDD can lead full, rich lives as members of their communities (Almalky, 2020; Chiang et al., 2013). As a result, researchers, policy makers, practitioners, family members, and individuals with IDD (often referred to as self-advocates in Canada) are calling for improved employment outcomes for individuals with IDD.

Given the unemployment and underemployment of working age individuals with IDD, eight community living organizations of the BC Employment Network (BCEN) located in the lower mainland and South Vancouver Island undertook a project aimed at improving employment outcomes for individuals with IDD, and based on research evidence (e.g., Awsumb et al., 2022; Carter et al., 2012), they focused on youth ages 15 to 19 years old.

In Canada, research on employment and transitioning youth with IDD is sparse (Khayatzadeh-Mahani et al., 2020). In fact, the majority of empirical work comes from researchers in the United States (U.S.), Australia, and United Kingdom (Hole et al., 2011). This research repeatedly demonstrates that transition initiatives and planning are “falling short” (Cheak-Zamora et al., 2015; Magnuson, 2013; Nord, 2020; Smith et al., 2021; Sung et al.., 2015; Wehman et al., 2014a; Wehman et al., 2014b). That said, there is strong evidence indicating specific domains that improve employment outcomes (e.g., Carter et al., 2012). One key predictor of successful employment outcomes for working-age individuals with IDD is early intervention, particularly when youth are transitioning from school to adult life (Awsumb et al., 2022; Cimera et al., 2014; Cimera et al., 2013; Shattuck et al., 2012; Sung et al., 2015). To date, research on early interventions focused on youth and employment has tended to concentrate on youth specific ‘job tasks’ associated with a particular job (e.g., within retail,

restaurant, clerical settings), only a minority of youth intervention studies focused on 'pre-employment interventions,' a seeming absence given the importance of early intervention and career planning (Seaman & Cannella-Malone, 2016). Moreover, early vocational support and work experience is another predictor of employment for transitioning youth (Baumann et al., 2013; Cheak-Zamora et al., 2015; Grigal et al., 2014; Simonsen & Neubert, 2012; Sung et al., 2015). In fact, working age youth with IDD who were employed upon completion of high school were likely to remain employed and receive competitive wages (Burgess & Cimera, 2014; Cimera et al., 2014; Wehman et al., 2014; Sung et al., 2015). Both transition policy and recommended practice emphasize the necessity of providing youth with disabilities a strong foundation of compelling career development experiences early in their high school years (Carter et al., 2012). Given the importance of early intervention, the IMPACT Project is dedicated to an employment intervention for transitioning youth ages 15 – 19 years.

The principal issue addressed through IMPACT is improving employment related transition planning and supports for youth with IDD with the goal to improve employment outcomes of transitioning youth with IDD. The overarching question informing the research was, "*In what ways is intervening early with youth effective in producing positive employment related outcomes?*" The hypothesis guiding this work was:

> *Intervening early with youth with IDD using a tailored approach that considers each youth's unique strengths and interests will improve future employment outcomes for these youth.*

This final summative report focuses on the findings across all three cohorts. Given that individual cohort reports in 2021, 2022, and 2023 detailed the methods used, the main body of this report includes brief descriptions of the methods. For a more detailed description of IMPACT methods, see Appendix A. This summative report will use page number references to previous reports (Hole, Reid & Mudde, 2021; Hole, Reid & Mudde, 2022; Hole, Reid & Mudde, 2023) for more specific information and detailed data tables and descriptions of each Cohort to avoid unnecessary repetition. Of note, given the pilot nature of Cohort 1 during the COVID-19 pandemic, some data collection instruments were revised and adjusted to incorporate agency feedback (Appendix C). Where possible, combined analyses were conducted and results reported for all three cohorts (e.g., MAS and employment outcomes). When a combined analysis was not appropriate given a change in the instruments post-Cohort 1, results are reported for Cohort 2 and Cohort 3 combined.

1. Methods

IMPACT used a concurrent mixed methods formative design (Creswell & Plano Clark, 2011) to evaluate the outcomes of IMPACT over three cohorts. For a more detailed description of this mixed method formative design, please refer to Appendix A. With a few exceptions, the methods used across all three cohorts were consistent. That said, some adjustments were made following Cohort 1 to our data collection instruments based on our learnings and reflections from the agencies and research team (Appendix C). In addition, the project was conducted during the COVID-19 pandemic. Consequently, our eight partner organizations at times used modified interventions to align with public health orders and health safety. With respect to methods, Cohort 1 and Cohort 2 experienced COVID-19 related restrictions that affected recruitment methods, data collection, and the delivery of interventions (e.g., online/virtual only, hybrid approaches using virtual and in-person when appropriate, and in-person only when appropriate). Cohort 3 experienced these restrictions to a lesser extent (i.e., mask mandates had been lifted); that said, agencies were sensitive to offer options to youth and their families based on the families' comfort level. Given this context, the intervention diaries used to document the intervention activities are reflective of COVID modified interventions in which some activities occurred in online settings and some in direct in-person settings.

The guiding research question for IMPACT is: "*In what ways is intervening early with youth effective in producing positive employment related outcomes?*" After the pilot Cohort 1, and more specifically for Cohort 2 and Cohort 3, we added another guiding research question: *"What methods of intervention are correlated to the employment outcomes of the youth?"*

1.1 Recruitment and Sampling

IMPACT partners used several inclusion criteria that guided the selection and recruitment of the youth participant sample for all Cohorts. These criteria were based on:

1) Age

   Participating youth should be aged approximately between 15 and 19 years of age at the start of the program. [1]

2) IDD

   Participating youth should have a diagnosis of IDD.

3) Consent

   Participating youth require a parent/caregiver to provide consent if the youth is under 19, the age of majority in BC.

All eight agencies approached recruitment through a variety of means. A recruitment flyer was distributed to local organizations positioned to assist with recruitment (e.g., Inclusion BC, STAIDD Navigators, and CLBC). In addition, agencies recruited through their local school districts, and internal resources. Each agency held virtual or an in-person information sessions with potential youth and their caregivers, or in-person individual sessions when requested. Interested youth were invited to participate. Youth who declined or who were waitlisted were invited to participate as part of the control group. Agency interventions included meetings with the youth in-person or virtually, and individual youth diaries included details about those meetings and whether these were one-on-one or in a group setting. Control group participants across these agencies were not exposed to any interventions. These youth completed both the entrance and exit interviews and the Meticulon Assessment Survey (MAS) at the start and end of the program, which we address below. Cohort 1 included 72 active participants and ten control group participants (Hole et al., 2021, p. 1). Cohort 2 had 91 active participants and ten control group participants (Hole et al., 2022, p. 1). Cohort 3 contained 90 active participants and ten control group participants (Hole et al., 2023, p. 3). This summative report provides the results and discussion of 253 active participants across all cohorts and 30 control group participants. At times, analyses include 181 active participants to capture results from only Cohorts 2 and 3; given instrument adjustments after the Cohort 1 pilot (see Appendix C), some combined analyses were only possible with Cohorts 2 and 3.

[1] Recruitment in May and June of each Cohort year (2020, 2021, and 2022) meant three youth were 14 years of age, turning 15 later in the year and 30 youth were 19 years old at the start of the program, turning 20 later in the year. One control group participant was 20 at the time of the entrance interview.

1.2 Data Collection

Data collection occurred through various interviews and agency intervention diaries (Hole et al., 2023, pp. 6-7). Cohort 1 interviews and diaries were part of a pilot of the IMPACT program. Based on agency feedback and youth experiences in that first Cohort, the research team in collaboration with the project manager, project consultant, and agency members adjusted the interview instruments and designed accompanying visual support documents. Cohorts 2 and 3 used the revised interviews and scales, proposed after the pilot Cohort 1 to better reflect the agencies' interventions and the youth's experience in IMPACT. The next section details the measures used in the data collection process.

1.2.1 Measures

IMPACT data are based on information provided by the youth in their entrance and exit interviews (Hole et al., 2021, p. 5; Hole et al., 2023, p. 7). In addition, Cohorts 2 and 3 included information provided by parents/caregivers/guardians of participating youth to increase the accuracy of data reporting related to youth demographic information and include observations about the participation of their youth in IMPACT (Hole et al., 2022; Hole et al., 2023).

1.2.2 Arc's Level of Support subscale and Overall support

IMPACT utilised the Arc's Level of Support Subscale and Overall Support from the Arc's Self-Determination Scale (Wehmeyer 1995). This subscale enables youth to self-assess the level of support needed in seven areas of assistance (p. 6; see also Appendix A). This is an additive scale, with scores constrained to values between seven and 21; the higher the score, the greater the self-assessed need for support. The mean score then represents a general tendency to "None", "A Little", or "A Lot" of support needed in the seven areas questioned (Hole et al., 2023, p. 8).[2] The additive scale is divided by seven to provide a value between one and three (one being no support and three being a lot of support).

In addition, youth in Cohort 1 indicated their overall needs for support that consists of a separate 3-point scale ranging between 1 and 4: "None" (1 point), "A Little" (2 points), "A Lot" (3 points),

[2] The Cronbach's alpha for this 7-item scale is 0.638. Cronbach's alpha is a measure of validity that indicates whether responses are consistent between items.

to “I need support all the time” (4 points) (Hole et al., 2021, p. 6). We adjusted this overall support scale for Cohorts 2 and 3 to a 5-point scale ranging between 1 and 5: “None” (1 point), “A Little” (2 points), “A Medium Amount” (3 points), “A Lot” (4 points), to “I need support all the time” (5 points) to better capture support needed in between a little and a lot of support (Hole et al., 2022, p. 10). In addition, for Cohorts 2 and 3, parents/caregivers/guardians also answered the overall support question about their youth (Hole et al., 2022; Hole et al., 2023)

1.2.3 Knowledge about employment

Youth were asked five fill-in-the-blank questions related to their general knowledge about employment. For Cohort 1, these questions about prior knowledge about employment contained a 3-point scale ranging between 1 and 3 (Hole et al., 2021, p. 7; Appendix C). Similar to the overall support scale, this scale was adjusted for Cohort 2 and 3 to a 4-point scale ranging from “Nothing”, “A little”, “A fair amount” or “A lot” for 1 to 4 points, respectively (Hole et al., 2022, p. 11). Individual mean scores for these five questions are calculated based on the youth’s responses at both entrance and exit interviews to gauge change over time in their knowledge about employment (see also Appendix A).

1.2.4 Meticulon Assessment Survey (MAS)

In all three cohorts, participants filled out the MAS. For Cohorts 2 and 3, parents/caregivers/guardians also filled out the MAS. The MAS, developed by Meticulon Consulting (2020), is an assessment instrument covering multiple predictive domains for getting a job conducive to job retention. This scale allows for an assessment of the youth’s employment capacities and capability domains or employability skills (Hole et al., 2023, p. 9). Questions related to the employment domains were given values according to a 5-value Likert-scale ranging from “Strongly Disagree”, “Disagree”, “Neither Agree nor Disagree”, “Agree”, to “Strongly Agree”. Points allotted to these answers range from 1 to 5, respectively (Appendix A).

1.2.5 Employment

Agency employment specialists conducted entrance and exit interviews with youth to assess the influence of employment interventions to see whether and how a tailored approach improves future employment outcomes. Agencies collected data related to the individual youth’s work experiences at entrance and exit interviews. Entrance interviews surveyed the youth about their

previous work experiences in direct response format. Youth were subsequently asked about their work experiences and employment outcomes at the exit interview to assess change in employment outcomes over time and to assess the effectiveness of IMPACT in providing meaningful employment training for the youth. The results from previous reports about the individual cohorts are visible in Appendix B, Figures B1 to B3. Pie charts and tables in this summative report's results section demonstrate changes in the youth's employment status subsequent to the work experiences they gained through participation in IMPACT. These data were collected during the entrance and exit interviews for all three cohorts (see also Figure B4).

1.2.6 Youth Responses

The exit interviews contained four feedback questions on a 5-point scale, ranging from "Strongly Disagree", "Disagree", "Neither Agree nor Disagree", "Agree", to "Strongly Agree" (Tables B24 to B28). Points allotted to these answers range from 1 to 5, respectively, and gauge the youth's experience in IMPACT. For example, youth were asked to respond to the statement "I feel that the things I learned during my time in the program will help me get a paid job in the future" (Table B24). Additionally, open answer questions provided these youth the space to express any additional ideas and comments about IMPACT and to expand on their experiences during the employment interventions and agency activities.

1.2.7 Parent/Caregiver/Guardian Responses

Based on early feedback from the agencies regarding the positive responses from parents/caregivers/guardians, we decided to include these responses about their youth's participation in IMPACT in a systematic way. Parents/caregivers/guardians provided additional feedback and reflection about IMPACT and their youth's engagement in a separate online survey distributed during the exit interview stage for all three cohorts. This 10-minute Qualtrics survey asked parental figures to reflect on their youth's experience in the IMPACT program through five statements and open answer questions. Five possible responses were provided for each of the five statements. These ranged from "Strongly disagree" to "Strongly agree" on a 5-point Likert-scale to gauge appreciation for the program, with each statement scored from 1 point to 5 points, respectively (Hole et al., 2021; Hole et al., 2022; Hole et al., 2023). In Cohorts 2 and 3, parents also completed the MAS at their youth's entrance and exit phase of the IMPACT program to capture the parents' perspectives of the youth's participation as it related to

the employability domains included in the MAS as another way to measure the youth's change over time from the perspective of the people closest to the youth (Appendix C).

1.2.8 Control Group

The youth's engagement in IMPACT is compared to some of the answers provided by a smaller control group of 30 youth who did not receive any agency interventions. Similar to participating youth, the youth in the control group completed the Arc's Level of Support Subscale, Overall Support scale question, general questions about their knowledge of employment, and the MAS. However, these youth did not participate in the IMPACT interventions, workshops, or employment services. The discussion section in this report provides some reflection about the use of these control group participants as well as the limitations and value of this group for the overall research hypothesis.

1.2.9 Follow-Up Interviews

Following the positive response to Cohort 1 from both the youth and the parents, the agencies and the research team decided to design follow-up interviews to measure the long-term IMPACT of the programming on youth their employment outcomes, knowledge and confidence about employment, and allow the youth to reflect on their memories about the IMPACT program. Agencies were asked to follow-up with their youth to see how the youth were doing after their IMPACT experience. At the time of this summative report, Cohort 3 participants have not yet had a chance to complete the follow-up interview as these are distributed roughly eight to ten months after the conclusion of the youth's engagement with IMPACT. Section 5 of this report relates the results of the follow-up interviews for cohorts 1 and 2.

1.3 Fidelity of Intervention and Implementation

The methods and measures employed in IMPACT require a brief comment about the fidelity of implementation of the intervention. The eight partnered agencies through the BC Employment Network collaborated with the research team and the partner managers and consultant to ensure that interventions were faithfully administered as intended. The fidelity of intervention was in part supported by annual training sessions on research ethics, data management, and data collection procedures. In addition, Cohort 1 as the pilot year for IMPACT served as a

means to assess the data collection instruments and to revise and improve the fidelity of the implementation of the intervention measures. As an additional quality control measure for Cohorts 2 and 3, the project consultant and graduate research assistant reviewed intervention diaries early (week 2) in the implementation of the IMPACT interventions to ensure consistent recording of intervention activities across the agencies. Several Zoom meetings with the agencies provided further training and guidance to ensure consistency in reporting.

1.4 Data Analysis

SPSS data analysis software (IBM SPSS Statistics Data Editor 27) was used to conduct the data analysis. Results for this report (see also Appendix B) were generated by running descriptive and frequency statistics within SPSS. We included Pearson Two-Tailed Bivariate Correlation analyses related to the level of support indicated in the Arc's Level of Support Subscale and Overall Support question from the entrance interview (see Appendix B). For Cohorts 2 and 3, we ran further correlation analyses to see what types of agency interventions are significantly correlated with the youth's paid and unpaid employment outcomes. Additional analyses were conducted based on demographic descriptive statistics, the Arc's Level of Support Subscale, and Overall Support as well as methods of intervention. Youth responses in Cohorts 2 and 3 regarding their general knowledge about employment at entrance and exit were compared over time (before and after youth participation in the intervention), reporting their mean scores and differences with Paired Samples t-Tests. Additionally, we compared the MAS scale scores for all cohorts over time using Paired Samples t-Tests for the youth. For Cohorts 2 and 3, we compared the youth their MAS Paired Samples t-Tests to the MAS Paired Samples t-Tests from the parents/caregivers/guardians who also completed the MAS at entrance and exit. This comparison allows us to compare the youth's perceptions about themselves in these employability domains at the entrance and the exit and the parent/caregiver/guardian's perspective about their youth's improvement in these employability domains over time.

2. Results[3]

Of the 283 youth engaged with IMPACT, 253 youth actively participated in one of the three cohorts. Thirty youth declined to participate and/or were put on a waitlist. These youth agreed to participate in the control group where they did not participate in any IMPACT intervention apart from completing entrance and exit interviews with the agency employment specialists. We describe the control group after a preliminary analysis of the 253 active participants.

2.1 Demographic Data[4]

2.1.1 Sex/Gender

Of the 253-participating youth, 184 (72.7%) identified as male, 65 (25.7%) identified as female, two (.8%) identified as non-binary, and two (.8%) preferred not to answer (see Table B1).

2.1.2 Age

The average age of this sample is 17 years, with a minimum age of 14 and a maximum age of 19 at the start of each Cohort, which was set on June 1st of 2020, 2021, and 2022 (see Table B2). The mode of the sample was 17 years of age (32.0%) (see Table B3).[5]

2.1.3 Ethnicity and Minority Status

To assess the demographic profile of the sample, the entrance interview included questions related to the youth's ethnicity, Indigeneity, and visible minority status. In Cohort 1, youth were asked about their ethnicity in an open answer format. The first question asked the youth the open answer question "Which ethnicity do you identify as?" followed by multiple choice questions "Do you identify as Indigenous, that is, First Nations, Metis, or Inuit?" and "Do you identify as a visible minority?" (Hole et al., 2021, p. 9). Answer options for the latter two questions included "Yes", "No", and "I prefer not to answer". However, due to confusion among

[3] Appendix B provides tables with results generated through SPSS referenced in the text as "see Table B#" to refer to corresponding data that is hyperlinked throughout this document.
[4] Missing values are indicated only when they occur.
[5] At the start of the third cohort in June of 2022, three youth were 14 years-of-age of which two were part of the control group. These youth were turning 15 later in the year and for inclusion purposes allowed to participate.

the youth in answering these questions related to ethnicity and minority status in Cohort 1, instead, we asked parents/caregivers/guardians in Cohorts 2 and 3 to answer this question related to the youth's ethnicity and minority status (Appendix C).[6] Across all three cohorts, 15 youth (6.0%) identified as Indigenous, against 223 (89.6%) who did not identify as Indigenous, and 11 (4.4%) who preferred not to answer the question (see Table B4). Ninety-one youth (36.1%) identified as a visible minority, 147 (58.3%) did not identify as a visible minority, and 14 (5.6%) preferred not to answer (see Table B5).[7]

2.1.4 Education

The youth were asked about the highest level of education they had completed at the time of their entrance interview in June of 2020, 2021, or 2022.[8] The three most common answers reflected that 48 (19.1%) of the youth completed Grade 10, 72 youth (28.7%) completed Grade 11, and 96 youth (38.2%) completed Grade 12 (see Table B6).[9]

2.2 Supports

2.2.1 Arc's Level of Support Subscale

For the 253-participating youth, the overall mean score of the Arc's Level of Support Subscale was 1.872 based on the 7-item additive scale divided by seven to provide us with a score constrained to values between one and three (see Table B7).[10] Of the 7 areas, support in self-care reveals the lowest mean score of 1.381, whereas support in learning (mean 2.216)[11] and support in economic self-sufficiency (mean 2.215)[12] and independent living (mean 2.196)[13] are the three highest mean scores for areas of self-determined support needed (see Table B8).

[6] 4 missing.
[7] 1 missing.
[8] 2 missing.
[9] Answers to the question "What grade did you finish in school?" that were answered with "Currently in Grade 11" were marked as Grade 10 as the last finished grade.
[10] 8 missing.
[11] 1 missing.
[12] 2 missing.
[13] 3 missing.

2.2.2 Overall Support

For Cohort 1 results regarding overall support, IMPACT reported a mean score of 2.46 with a standard deviation of .79 (Hole et al., 2021, p. 10). For 181 of the participating youth in Cohorts 2 and 3, the overall support scale reflects a mean of 2.84 on a scale of 1 to 5, with 1 ("No support"), 2 ("A little support"), 3 ("A medium amount of support"), 4 ("A lot of support"), to 5 ("I need support all the time").[14] This mean has a standard deviation of .950 (see Table B9 and Table B10). When parents were asked the same question about their youth's required overall support, the mean score is 3.07, with a standard deviation of .844. The previous 7-item Arc's Level of Support Subscale and this overall support scale as answered by both youth and parents for Cohorts 2 and 3 show positive correlations that are statistically significant at the <.001 level (see Table B11). Youth-identified Arc's Level of Support and Overall Level of Support show a moderate correlation at .538. The parent-identified Overall Level of Support for the youth and the youth-identified Arc's Level of Support show a weak correlation at .359. The parents and the youth-identified Overall Level of Support show a weak positive correlation at .287 (Table B11).

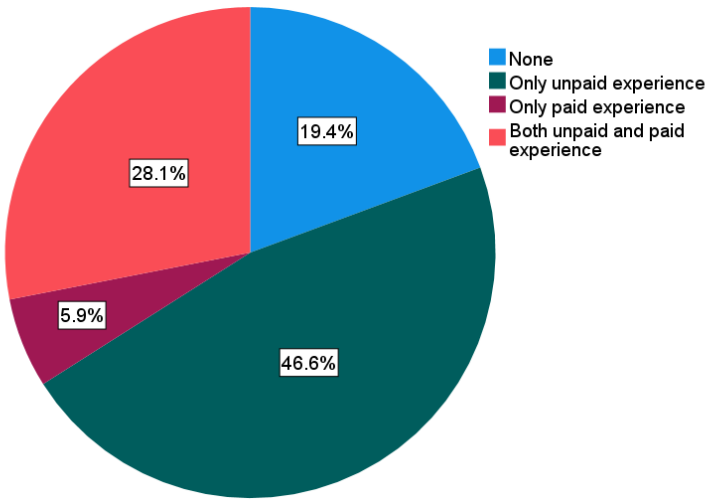
2.3 Employment

2.3.1 Employment at Entrance

Of the 253 active participants in all three cohorts, 38 youth (15.0%) were employed at the time of their entrance interview (see Table B12). Of those same 253 participants, 67 (26.5%) indicated they had previous paid employment (see Table B13). Most of the youth previously had a volunteer job (192 or 75.9%) (see Table B14). Putting these data together, Figure 1 provides an overview of paid and unpaid work experiences of the 253 youth *before* any IMPACT intervention (see also Table B15).

[14] 1 missing.

Figure 1: Employment and Paid and Unpaid Work Experiences of Youth before IMPACT (n=253)



2.3.2 Employment at exit

Of the 253 youth that actively participated, 114 (45.1%) held or obtained paid work during IMPACT as reported on the exit interviews and by the agencies' intervention diaries (see Table B16). One-hundred-and-twenty-five of 253 youth (49.4) participated in unpaid work (see Table B17). Youth could have both obtained paid and unpaid work experience during IMPACT and been able to hold more than one job at a time (see Table B18). Based on their previous work experiences as indicated in Figure 1, Figure 2 reflects change in the overall paid and unpaid work experiences of the youth after participation in IMPACT. In addition, Table 1 adds more specified data on unpaid and paid work experiences gained. Both Figure 2 and Table 1 reflect the cumulative results in which the paid and unpaid work experiences during IMPACT were added to the youth's paid and unpaid work experiences before IMPACT intervention.

Figure 2: Total Employment and Paid and Unpaid Work Experiences of Youth <u>after</u> IMPACT (n=253)

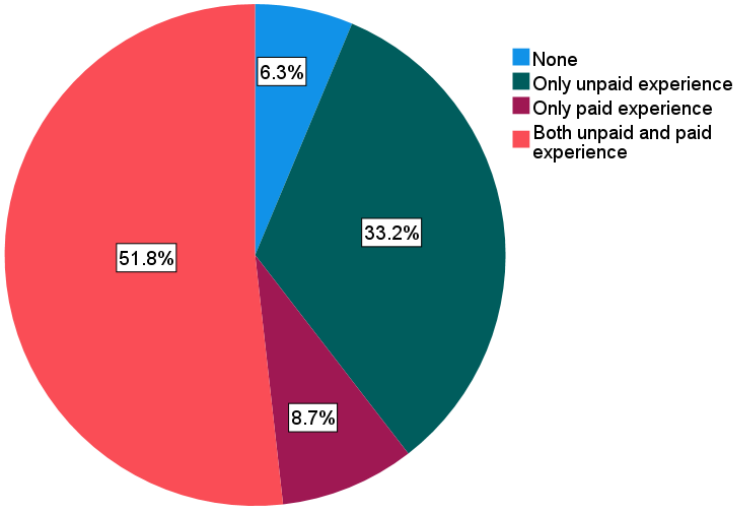


Table 1: Paid Unpaid Work Experiences at Exit for Cohorts 1, 2, and 3 (n=253)

Paid work		Frequency	Percent
Cohort 1	Yes	27	37.5
	No	45	62.5
	Total	72	100.0
Cohort 2	Yes	44	48.4
	No	47	51.6
	Total	91	100.0
Cohort 3	Yes	43	47.8
	No	47	52.2
	Total	90	100.0

Unpaid work		Frequency	Percent
Cohort 1	Yes	52	72.2
	No	20	27.8
	Total	72	100.0
Cohort 2	Yes	42	46.2
	No	49	53.8
	Total	91	100.0
Cohort 3	Yes	31	34.4
	No	59	65.6
	Total	90	100.0

Paid work	Frequency	Percent
Yes	114	45.1
No	139	54.9
Total	253	100.0

Unpaid work	Frequency	Percent
Yes	125	49.4
No	128	50.6
Total	253	100.0

2.3.3 Work Experiences

Based on specific agency data related to the youth's employment and work experiences, Tables B19 and B20 in Appendix B provide some more details about the types of employment and the sectors of industry these youth gained experiences in. For instance, of the 184 youth that gained some form of employment across all three cohorts, the majority participated in agency work experiences (150 or 54.0%) (Table B19). Most work experiences in Cohorts 2 and 3 were categorized as taking place in Sales/Service industry and Natural Resources/Agriculture (Table B20). The types of work experiences 184 youth gained during all three years of IMPACT are reported in Table 2. The distribution of work experiences of the 184 youth with some form of work engagement (72.7% of the sample) ranges from full-time employment (4), full-time seasonal employment (9), part-time employment (50), part-time seasonal employment (35), to contract (22), self-employed (8), and unpaid work experiences (150).[15] Youth were able to hold more than one job at a time, which explains how 184 youth combined participated in 278 recorded paid and unpaid work experiences.

Table 2: Paid and Unpaid Work Experiences of 184 Participants (72.7% of the sample n=253)[16]

Type of	Frequency
Full-time	4
Full-time Seasonal	9
Part-time	50
Part-time Seasonal	35
Contract	22
Self-employed	8
Work experience[17]	150
Total	278

Results from agency data as reflected in the intervention diaries provides the level of engagement of the youth with the IMPACT training and exercises. Employment specialists rated

[15] Important to note that full-time employment often does not apply to this study sample. Most types of employment whether paid or unpaid are for under 12 hours a week. Most of the youth are combining this with some form of education. Youth were able to hold more than one job at a time, which explains how 184 youth combined participated in 278 recorded paid and unpaid work experiences.
[16] For data per cohort, please see Hole et al., 2021, p. 30, Hole et al., 2022, p. 50, and Hole et al., 2023, p. 44.
[17] Work experiences here refers to experiences within the IMPACT program, including for instance the warehouse simulation and other agency organized work experiences.

the extent to which youth participated in the program, 0-25 percent, 26-50 percent, 51-75 percent, or 76-100 percent. One-hundred-eighty-two or 71.9% of the youth were very engaged (engagement level 76%-100%) (see Table B22). This participation or level of engagement was also measured through the number of interventions either in direct contact or on behalf of the youth (see Table B22).[18]

3. Evaluation

3.1 Knowledge about Employment

Table 3 shows the mean scores for the youth's general knowledge about employment at the entrance and exit interviews for Cohorts 2 and 3.[19] These five questions on a 4-point scale were completed during entrance and exit interviews. Youth's answers ranged from "Nothing/Not" (1-point), "A little" (2-points), "An average amount/Moderately" (3-points), to "A lot/Very" (4-points). Table 3 presents the mean for each question at entrance and exit followed by a column that reflects the difference between exit and entrance to allow for determination of statistical significance. [20] Table 3 reveals an overall increase in the mean scores related to knowledge about employment that are statistically significant.[21]

Table 3: Knowledge about Employment at Entrance and Exit Interviews (n=181)

Mean Entrance	Mean Exit	Difference Exit - Entrance
2.27	2.70	.43***
2.45	2.88	.43***
2.47	3.04	.57***
2.92	3.15	.23**
2.62	2.94	.32***

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.

[18] Interventions were distinguished as being in direct contact with the youth or indirectly on behalf of the youth during the IMPACT program. An example of an intervention conducted on behalf of a youth is the time spent organizing workshops for the youth.
[19] The pilot Cohort 1 is not included here as the scale was altered after the initial run of the IMPACT program based on feedback from the youth and the employment specialists that the original scale was lacking answer options. The scale was subsequently altered as is reflected in the results for Cohort 2 and 3.
[20] For Cohort specific data, see Hole et al., 2021, p. 13; Hole et al., 2022, p. 13; Hole et al., 2023, p. 15; see also Appendix A for a more detailed description of the measure and questions.
[21] Paired Samples t-Tests.

*** Statistically significant at less than or equal to .001 level.

3.2 MAS

Table 4 presents the mean scores per MAS domain for the entrance and exit interview as well as the difference between exit and entrance and the statistical significance of that change in the mean score for Cohorts 2 and 3 (see Table B29; see also Appendix A).

Table 4a: Paired Samples t-Test MAS Mean Scores for Entrance and Exit Interviews (n=181)

Domain	Mean	Mean Exit	Difference Exit –
Time Expectations	3.83	4.02	.19**
Organization	3.95	4.04	.09
Authority	3.86	4.05	.19***
Teamwork	3.93	4.13	.20***
Perseverance	3.69	3.83	.14**
Responsibility	3.86	3.95	.09
Motivation Level	4.18	4.12	-.06
Mindfulness	4.32	4.45	.13*
Self-Awareness	3.76	3.94	.18***
Communication Skills	3.91	3.97	.06
Personal Appearance	4.08	4.27	.19*

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.
*** Statistically significant at less than or equal to .001 level.

Table 4b reflect the Paired Samples t-Test for the MAS mean scores for all three cohorts. Results in Table 4a were used to conduct bivariate correlation analyses related to agency interventions and employment outcomes. This cannot be done with results in Table 4b as the intervention diaries were altered after Cohort 1. Results in Table 4b were used to analyze the correlation between the MAS domains and employment outcomes.

Table 4b: Paired Samples t-Test MAS Mean Scores for Entrance and Exit Interviews (n=253)

Domain	Mean	Mean Exit	Difference Exit –
Time Expectations	3.87	4.01	.14**
Organization	3.92	4.03	.11*
Authority	3.87	4.07	.20***
Teamwork	3.92	4.10	.18***
Perseverance	3.69	3.83	.14***
Responsibility	3.85	3.96	.11*
Motivation Level	4.15	4.11	-.04
Mindfulness	4.33	4.42	.09*
Self-Awareness	3.78	3.93	.15***
Communication Skills	3.90	3.94	.04
Personal Appearance	3.78	4.26	.48***

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.
*** Statistically significant at less than or equal to .001 level.

Table 5 engages with the MAS for the parents/caregivers/guardians for Cohorts 2 and 3. Mean scores are similarly provided per domain for the entrance and exit interviews as well as the difference between exit and entrance and statistical significance of the change in the mean score.

Table 5: Paired Samples t-Test MAS Mean Scores for Parent/Caregiver/Guardian Entrance and Exit Interviews

Domain	Mean Entrance	Mean Exit	Difference Exit -
Time Expectations	3.61	3.75	.14*
Organization	3.52	3.63	.11*
Authority	3.37	3.52	.15**
Teamwork	3.66	3.76	.10*
Perseverance	3.32	3.43	.11*
Responsibility	3.54	3.69	.15**
Motivation Level	3.85	3.85	0
Mindfulness	4.32	4.30	-.02
Self-Awareness	3.46	3.51	.05
Communication Skills	3.15	3.26	.11*
Personal Appearance	3.59	3.73	.14

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.
*** Statistically significant at less than or equal to .001 level.

3.3 Youth Evaluation Responses

When asked about their experience during IMPACT, 193 of the youth (77.5%) agreed or strongly agreed that they were satisfied with their experience in the program with a mean score of 4.07 (see Table B24 and B25).[22] One-hundred and seventy-eight youth (77.1%) enjoyed the activities while participating in the program (see Table B26).[23] One-hundred and sixty-nine of the 253 youth participants (69.6%) indicated that they had learned strategies for acquiring a paid job during the program (see Table B27)[24], and 186 youth (75.9%) indicated that the things they learned during the IMPACT program will help them acquire a paid job in the future (see Table B28).[25]

3.4 Parent/Caregiver/Guardian Reflections about IMPACT

During all three Cohorts, 102 parents/caregivers/guardians replied to the online Qualtrics survey. Of the 102 respondents, 96 (94.1%) identified as a parent (see Table B45). The responses to five statements related to their experience with IMPACT and their observations about their youth's engagement with IMPACT show an overall positive response to these statements (see Table B46 to Table B50). To the statement, "As a parent/caregiver, I noticed changes in my youth's behaviour, attitude, and actions during the course of the Summer Employment program" 81 out of 98 (82.7%) responded with "Yes".

4. Control Group

The sample of youth for all three cohorts consisted of 283 participants. Thirty of those participants were treated as the control group. These youth did not receive any interventions and completed the entrance and exit interviews. The typical use of a control group is to measure the effects of the intervention previously unknown. Control group participants in this study are meant to support our multi-case study and exploration of the research statement that a tailored approach improves future employment outcomes. Segmentation for the control group for all

[22] 4 missing.
[23] 24 missing.
[24] 10 missing.
[25] 8 missing.

cohorts is 10.6% of the total sample engaged with IMPACT in those cohorts. The control group participants present the same characteristics of the experimental group, except for the interventions applied to the latter group. We recognize the limitations of the control group and this smaller sample only allows us to make tentative conclusions when comparing it to the 253 youth who underwent interventions. The comparative analysis and the purpose of the control group is to illustrate the impact of the interventions by comparing the 253 youth that received tailored interventions to the 30 youth that did not receive any IMPACT-directed interventions. The control group allows us to tentatively assert that the increase in paid and unpaid work experiences of the participating youth, the increase in knowledge and confidence about employment, and the increased scores in the MAS employability domains are because of the tailored interventions these youth received as opposed to this change being due to some other variable. Section 4.6 makes some comparative assessments between the participating and control group participants after a general description of the control group's demographic details, self-identified level of support, previous employment and work experiences, knowledge about employment, and the MAS employability domains.

4.1 Demographic Details

Of the youth in the control group, 21 identify as male (70.0%), against 72.7% male-identifying youth in the participant group (see Table B32). Nine youth (30.0%) identify as female, against 25.7% in the participant group. In terms of age, the control group is younger on average than the participating youth with a mean age of 16 (see Table B33). One youth in the control group identifies as Indigenous (3.3%), whereas 6.0% of the youth in the participant group identifies as Indigenous (see Table B34). Seven youth in the control group identify as a visible minority (23.3%). For the participant group, 91 or 36.1% identify as a visible minority (see Table B35). Most of the control group finished Grade 11 (75%) (see Table B36).[26]

4.2 Supports

In engaging with the questions related to the Arc's Level of Support Subscale and the overall need of support during the day, the control group scores are lower for the 7-item subscale with a mean score of 1.738 against a mean score of 1.872 for the participating youth (see Table B37 and Table B38). To the question regarding the overall support needed during the day, the

[26] 2 missing.

control group displays a mean of 2.85 against 2.84 for participating youth in cohorts 2 and 3 (see Table B39).[27]

4.3 Employment

For the total of 30 control group participants, four youth (13.3%) indicated they were employed at the time of the entrance interview (see Table B40). Ten of the 30 youth in the control group had previous paid work experiences at the start of the IMPACT program (see Table B41). Twenty youth, or 66.7% indicated that they had previous unpaid/volunteer work experiences (see Table B42). Upon exit, four (13.3%) of the youth in the control group indicated that they had gotten a new paid job (Table B43). Six (20.0%) of the control group youth had gained unpaid work experiences (Table B44). The control group youth's overall employment experience during the summer shifted slightly. Table 6 reflects this change for control group youth, comparing work experiences at the entrance interview with their work experiences at their exit interview of the IMPACT program in 2020, 2021, and 2022 respectively.

Table 6: Overall Work Experiences Control Group at Entrance and Exit (n=30)

Work experiences at entrance Control Group	Frequency	Percent
None	6	20.0
Only unpaid experiences	13	43.3
Only paid experiences	4	13.3
Both unpaid and paid	7	23.3
Total	30	100.0
Work experiences at exit Control Group	Frequency	Percent
None	4	13.3
Only unpaid experiences	13	43.3
Only paid experiences	5	16.7
Both unpaid and paid	8	26.7
Total	30	100.0

[27] 10 missing.

4.4 Knowledge about Employment

Like the participating youth, those in the control group were asked questions on their knowledge about employment. Table 7 relates their respective mean scores for these questions and their difference by subtracting entrance from exit scores for Cohort 1 and Cohorts 2 and 3 (see Appendix A). Since scales were revised after the pilot run of IMPACT in Cohort 1, this control group (n=10) is kept separate from those control group participants in Cohort 2 and 3 (n=20).[28]

Table 7: Knowledge about Employment at Entrance and Exit Interviews Control Group

Cohort 1 (n=10) Mean Entrance	Cohort 1 (n=10) Mean Exit	Difference Exit – Entrance	Cohort 2 & 3 (n=20) Mean Entrance	Cohort 2 & 3 (n=20) Mean Exit	Difference Exit – Entrance
1.78	2.22	.44*	2.10	2.25	.15
2.78	2.56	-.22	2.40	2.80	.40
2.44	2.44	0	2.45	2.50	.05
2.56	2.33	-.17	2.55	2.75	.20
2.22	2.44	.22	2.70	2.70	0

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.
*** Statistically significant at less than or equal to .001 level.

4.5 MAS

The control group completed the MAS inventory at both entrance and exit interviews. Their results are shown in Table 8 (see also Table B45). The scores were not statistically significantly changed between entry and exit scores, indicating that these individuals neither benefitted from, nor were disadvantaged by, non-participation in the IMPACT program.

[28] See Appendix C for the adjustments to scales and measures after the pilot Cohort 1.

Table 8: MAS Mean Scores Entrance and Exit Interview Control Group

Domain	Cohort 1	Cohort 1	Difference	Cohort 2 &	Cohort 2 &	Difference
Time	3.67	3.70	.03	3.75	3.83	.08
Organization	3.83	3.88	.05	3.88	3.74	-.14
Authority	4.00	3.83	-.17	3.75	3.63	-.12
Teamwork	4.05	3.83	-.22	4.01	3.75	-.26
Perseverance	3.92	3.92	0	3.85	3.53	-.32
Responsibility	3.90	3.87	-.03	4.02	3.88	-.14
Motivation Level	4.13	4.03	-.10	4.17	4.02	-.15
Mindfulness	4.10	4.17	.07	4.37	4.02	-.35
Self-Awareness	3.70	3.93	.23	3.88	3.58	-.30
Communication Skills	3.73	3.67	-.06	4.10	3.88	-.22
Personal Appearance	4.00	4.10	.10	4.05	3.60	-.45

* Statistically significant at less than or equal to .05 level.
** Statistically significant at less than or equal to .01 level.
*** Statistically significant at less than or equal to .001 level.

4.6 Intervention and Control

When we compare the results of the control group to those of the participating group, we first need to address whether the control group consists of the same characteristics of the experimental group, except for the interventions applied to the latter (see also Tables B32 to B39). The control group participants, like the experimental group, were respectively 15 to 19 years of age during IMPACT, diagnosed with IDD, and supported by a parent/caregiver/guardian to provide consent. In addition, both groups were predominantly male (Table B32), about 17 years of age (Table B33), did not identify as Indigenous or part of a visible minority (Tables B34 and B35), finished Grade 11 (Table B36), and identified similar levels of support needed based on the 7-item scale (Tables B37 and B38) and overall support scale (Table B39). In Tables B40 to B42, we notice that the control group and participant group's unpaid and paid work experiences at the start of IMPACT were similar. However, these unpaid and paid work experiences for participating youth had increased significantly upon exit while these unpaid and paid work experiences did not substantively change for the control group participants (Tables B43 to B44). Similarly, knowledge about employment did not significantly shift for control group participants whereas there was a noticeable and statistically significant change for the participating youth (see Table 4 and Table 7 above). To add, the MAS employability domains in the Paired Samples t-Test for the control group (Table B45) does not

reflect a statistically significant change, whereas for the participant group nine out of eleven domains show a statistically significant increase in the MAS Paired Samples t-Test. These comparative results to some extent reflect the value of the agencies' interventions and the value of the interventions for employment outcomes, knowledge about employment, and MAS employability domains.

5. Follow-Up Interviews

Agencies were asked to follow-up with their youth to see how the youth are doing after their IMPACT experience. The following results of follow-up interviews pertain to Cohorts 1 and 2 that were completed in the Spring of 2021 and 2022, respectively (see Tables B53 to B60). Important to note is that not all participants in the control group and experimental group could be reached by the agencies. To the question "Did you get a paid job during or after IMPACT?", one of the 14 control group participants that completed the follow-up interview said "yes" (7.1 %), against 43 out of 119 experimental group participants that said "yes" (36.1%) (Table B53). That one control group participant indicated they were still employed in the same job at the time of IMPACT and at the follow-up interview (Table B54). Twenty-nine of the 43 experimental group participants (67.4%) were still working in the same job they obtained during IMPACT at the time of the follow-up interview eight to ten months later. Tables B56 to B60 reflect the Likert-scale responses from all experimental group participants (n=119) that filled out the follow-up interview in response to five questions about their IMPACT experience.

6. Discussion

6.1 Objective

The objective of IMPACT is to determine whether and how intervening early with youth with IDD using a tailored approach will improve future employment outcomes. Results from all cohorts demonstrate a positive change in employment-related outcomes (e.g., paid and unpaid work confirmations, knowledge about employment, and employment-related skills) because of the youth's participation in the intervention. Based on agency, parental, and youth feedback and answers related to general knowledge about employment and the MAS, youth appeared to benefit from and enjoy their participation in the IMPACT program. The positive findings based

on data in each of the individual cohorts – that early engagement with IDD youth through employment experiences increase the future job market engagement for these youth – are reinforced by the summative results presented here (Hole et al., 2021; Hole et al., 2022; Hole et al., 2023). The interviews conducted with youth in combination with the recorded intervention activities through the intervention diaries reveal overall enthusiasm among the youth to engage in employment and job readiness training. Informed by the predictors of improved employment outcomes for youth with IDD (Simonsen & Neubert, 2012; Carter et al., 2010; Carter et al., 2012), IMPACT provides a consistent and reliable conduit to youth with IDD to explore different kinds of employment through activities (e.g., community involvement) that are demonstrated predictors of future labour market participation (e.g., Carter et al., 2010). IMPACT provides impetus for a new developmental strategy for intervening early with transitioning youth to employment. What is more, the summative results of the IMPACT project underscore the importance of this type of early and tailored interventions for the improved levels of motivation and confidence recognized by the youth themselves and reflections from their parents/caregivers/guardians. The results support that those interventions focused on skill building, career exploration and discovery, and job coaching can lead to positive employment outcomes for youth with IDD.

6.2 Demographic Data – Sample

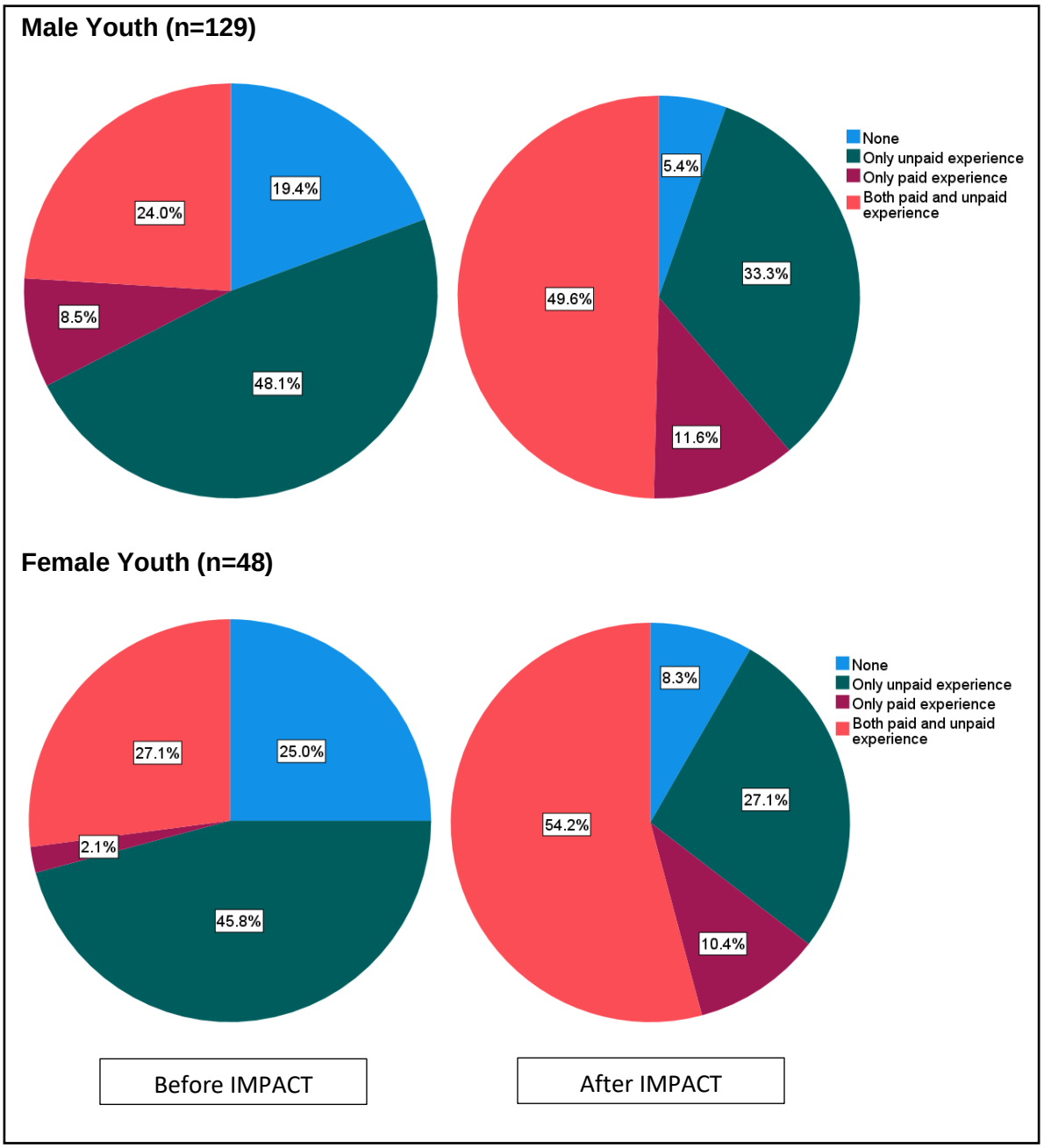
The combined sample for all cohorts was predominantly male, did not identify as Indigenous or a visible minority, was on average 17 years of age, and had completed Grade 11 or 12. The sample included three youth that were 14 years of age at the start of the program, turning 15 later in the year, while one youth was 19 years of age, turning 20 later in the year. This age range is in line with the research objective and captures youth in their transition years from school to post-secondary education and employment. Employment-related transition, furthermore, is a gendered experience. While males are diagnosed with IDD more frequently than are females, research that looks at sex/gender, employment, and IDD indicates that when it comes to sex/gender, males are hired more frequently, work more hours, and are paid more (e.g., Kaya et al., 2018; Sung et al., 2015). Given this discrepancy, a sex/gender-based analysis is important to consider within this research's objectives of tailored early intervention with IDD youth. As an iterative multi-year cohort study, the research team at UBCO have been discussing the gender findings with all eight participating agencies. It is important to note that ongoing discussions of GBA+ findings (and early gender inequities in Cohorts 1 and 2) with the agencies

may have positively influenced the agencies' engagement and interventions with the youth. This may have had an influence on GBA+ results reported in this summative report. Given the revised measures after the pilot Cohort 1, the next section discusses results specific to Cohorts 2 and 3 (n=181).

6.3 Sex/Gender-based Analysis

A sex/gender-based analysis for Cohorts 2 and 3 brings forward two dominant groups identifying as male (n=129) and female (n=48). For the purpose of this sex/gender-based analysis, we excluded two participating youth who identified as non-binary (n=2) and two youth who preferred not to answer this question about sex/gender during the entrance interview (n=2). This exclusion is solely based on their smaller representations (n=2 and n=2). Figure 3 provides pie charts of employment and work confirmations for male and female participants before and after IMPACT participation.

Figure 3: Paid and Unpaid Work Confirmations Cohort 2 and 3, sex/gender, before and after intervention



As Figure 3 shows, males and females gained substantial work experiences, reducing the number of youths with no work experiences to 5.4% for males and 8.3% for females from 19.4% and 25.0%, respectively. The 7-item Arc's Level of Support Subscale for males displays a mean score of 1.89. Those youth that identified as female have a mean score of 1.85. The overall

support scale shows a mean of 2.86 for males and 2.80 for females. The sex/gender-based split does not present a statistically significant correlation with work experiences gained or with the Arc's Level of Support Subscale or overall support scale.

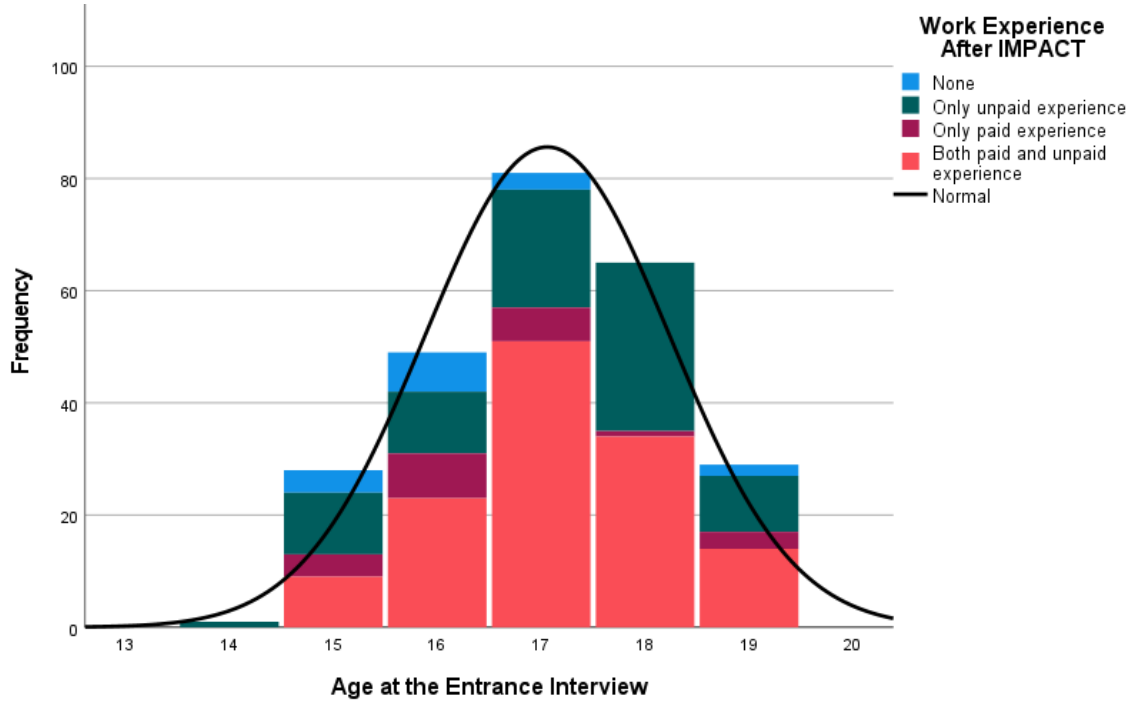
When splitting the file by sex/gender, a Paired Samples t-Test for the MAS reveals seven domains – Time Expectations, Authority, Teamwork, Perseverance, Responsibility, Mindfulness, and Self-Awareness – showed statistically significant increases for males (statistically significant at the less than or equal to .05, .01, or .001 level). For females, four domains – Time Expectations, Authority, Teamwork, and Perseverance – reveal a statistically significant change (statistically significant at the less than or equal to .05 or .01 level). The knowledge about employment survey split according to sex/gender reveals statistically significant results for both the male and female group (see Table B31).

When we conducted a partial correlation controlling for the effect of sex/gender this revealed that the Arc's Level of Support Subscale and the Overall Support scale are positively correlated and statistically significant ($p \leq .001$). That is, when controlling for sex/gender, the higher the score on the Arc's subscale, the higher the overall support scale score tended to be. However, a sex/gender-based analysis of work confirmations did not show a statistically significant correlation between sex/gender and employment outcomes. The iterative multi-year aspect of IMPACT may have influenced the GBA+ results over time. For example, after Cohort 1, where a sex/gender disparity in employment outcomes was evident (Hole et al., 2021), the research team highlighted these findings with our agency partners, potentially influencing how the interventions were carried out by the agencies with participating youth who identified as female in Cohorts 2 and 3. In Cohorts 2 and 3 and the summative report, we see a decreased to an almost non-existent sex/gender gap in employment outcomes (Hole et al., 2022; Hole et al., 2023).

6.4 Age-based Analysis

When we split the data file by age and compare the groups and their work confirmations for all three cohorts, Figure 4 displays the distribution of the work experiences of the youth (n=253) after participation in IMPACT.

Figure 4: Paid and Unpaid Work Experiences gained through IMPACT by Age at Exit (n=253)



6.5 Support

Employment outcomes do not appear to be correlated with the self-identified level of support needed. This lack of statistically significant correlation might indicate that level of support did not limit the youth in obtaining work experiences through IMPACT.

6.6 Employment Outcomes

The type of intervention as logged by the agencies in the intervention diaries for the youth can be analyzed against obtained work experiences. These types of interventions are logged in minutes, creating a total amount of time for each activity spent with the agency for each youth. As shown in Table 9, gaining work experiences, job searching, minutes spent with a job coach, interventions on behalf of the youth, and time spent in-person one-on-one all show a positive relationship ($p \leq .01$). Specifically, skill building exercises show a positive relationship with gaining paid employment in Cohort 3 (Hole et al., 2023, p. 27). In addition, the total time spent with a job coach and work experiences after participation in IMPACT are positively related ($p \leq$

.001). Total time spent in job searching activities and work experiences after active participation in IMPACT are likewise positively related ($p \leq .05$).

Table 9: Pearson Bivariate Correlation for Employment Outcomes and Interventions

		Total time spent on behalf	Total time spent job searching	Total time spent with job coach	Total time spent in-person one-on-one
Work Experiences through IMPACT	Pearson Correlation	.212**	.264**	.354**	.325**
	Sig. (2-tailed)	.004	<.001	<.001	<.001
	N	181	181	181	181
**. Correlation is significant at the 0.01 level (2-tailed).					

The overall employment outcomes reveal a strong engagement from 181 youth in either paid or unpaid work opportunities. The agency's interventions were important as a means of increasing the employment possibilities, confidence, and skill building for the youth.

6.7 Knowledge about Employment

The questions engaging with the youth's self-assessed general knowledge about employment as measured before and after IMPACT interventions show a statistically significant increase in all five variables (questions) for the 181-participating youth in Cohorts 2 and 3. The complete set reveals the impact of the agencies' interventions, including but not limited to how to go about looking for a job, how to dress, how to work in a team, and how to engage with authority figures with confidence. This is also supported by the MAS results. The work experiences of youths in Cohort 2 and 3 at exit is positively correlated to confidence in knowledge about employment ($p \leq .05$).

6.8 MAS

The MAS focuses on the self-reported strength or level of agreement with statements pertaining to 11 specific domains that are established as predictors of getting and keeping a job. One of

the first things to notice about the results was the already high mean scores at entrance interviews across the 11 domains in which most statements score around 4 points on the 5-point scale (“Agree”). Most domains also reveal an increase in score post-intervention. Moreover, the results show a statistically significant increase in mean score in nine out of 11 domains for all three cohorts (n=253): Time Expectations, Organization, Authority, Teamwork, Perseverance, Responsibility, Mindfulness, Self-awareness, and Personal Appearance (Table B29). For cohorts 2 and 3 (n=181), the MAS over time shows a statistically significant increase in mean score in seven out of 11 domains (Table 4). Seeing positive changes in these employment domains and *“soft skills”* (as referred to in the literature) underscores important growth areas related to employment for the youth. In fact, in a statewide survey of 596 high school teachers in the U.S., Carter and colleagues (2021) found that the most prominent barriers to youth with IDD getting a job were social skills, employment skills, and motivations of the youth with disabilities. Similarly, Awsumb et al.’s (2022) qualitative study with parents, educators, and agency staff (n = 74) found that lack *“soft skills”* (e.g., motivation, personal hygiene) are significant barriers to early work experience for transitioning youth, again underscoring the importance of these employment domains.

6.9 Control Group

As addressed in the results section 4.6, it appears that the active participants gained on several variables following IMPACT intervention and the control group did not. Despite the small sample size and careful consideration of some minor differences in the average age and completed education of the control group participants who were slightly younger than the experimental group participants, the control group comparison reflects that the agencies’ interventions positively improved employment outcomes, knowledge and confidence about employment, and MAS employability domains as predictor for future employment for the experimental group participants. Without the agency-specific and tailored interventions, participants are displaying significantly less to no change in their employment outcomes, knowledge and confidence about employment, and MAS employability domains as predictor for future employment. The partner agencies, therefore, are delivering on the measures set up in the research objective that guides IMPACT: improving employment possibilities for youth with IDD through a tailored approach. The differences between the groups are not huge, but they are consistent.

7. Assessment

7.1 Limitations

As mentioned throughout the Cohort 1 report, most of the limitations of IMPACT for 2020 were COVID-19 related. Agencies and the individual mentors had to adapt and move most of their program to either an online or COVID regulated format. In some of the feedback from the agencies, it became clear that some of the youth had a harder time engaging with the program either in its adapted format, or through the mental strain and fear COVID-19 brought along for everyone. This logically affected the results and the sample of Cohort 1. While it was initially projected to service and support about 100 youth through their school districts and the agencies, we were able to provide IMPACT to 72 youth in its adapted format and 10 youth in a control group capacity. Regardless of these limitations, results have proven an overall positive outcome for most of the youth actively engaged. Unexpected victories include the entrepreneurship of some youth in setting up their own landscaping endeavours and youth actually benefiting more from the online environment. Moreover, Cohort 1 provided the team with the opportunity to assess the research design (e.g., revision of the data collection instruments) and work with the agencies to ensure quality data collection and data management strategies.

Similarly, most of the limitations of IMPACT for Cohort 2 in 2021 were COVID- 19 related. Agencies and the individual mentors continued to provide some of their program to either an online or COVID regulated format. It is interesting to note that the work confirmations correlated to both the number of in-person and virtual hours spent in agency interventions. This might suggest that some of the hybrid delivery of the IMPACT programming and/or the youths' comfort with online engagement is less about the method of contact and more about the number of hours spent either in-person or online. Nevertheless, it should not be underestimated that youth and employment specialists all must work with the mental strain and the fear connected to COVID-19. The youth's experience within the programming of the eight agencies are diverse and reflect different coping mechanisms and resilience, both online and in-person. Regardless of COVID limitations, results show an overall positive outcome for most of the actively engaged youth. Victories include the mentorship experience and overall appreciation of the connection made between youth and their employment specialists.

In 2022, Cohort 3 dealt with fewer challenges related to COVID-19 with health restrictions being lifted, although limitations were still apparent. Some agencies and the individual mentors opted to engage with their youth online, while others opted for in-person and others opted for a hybrid approach. And, while the effects of COVID-19 were still present, the pandemic has taught us the value of the possibilities of remote and virtual engagement. Not all interventions with youth are uniform across the agencies and, instead, tailored to the agency's model of engagement and the youth's level of engagement.

7.2 Moving Forward

Based on our learnings from IMPACT 1.0, we are eager to engage in a new version of the project: IMPACT 2.0. Informed by knowledge gained in our initial work together, IMPACT 2.0 will expand the focus of the research to examining best practices in supporting transitioning youth as they are in their high school transition years. While current research underscores the importance and success of supported employment in obtaining positive labour market participation for job seekers with developmental disabilities, little is known about the specifics of best practices in supported employment for transitioning youth with developmental disabilities. Thus, the research question guiding IMPACT 2.0 is, "What are the best practices for employment interventions to support transitioning youth with developmental disabilities to secure inclusive paid employment as they transition from high school?" This knowledge will benefit service providers offering supported employment supports provincially, nationally, and internationally. In addition, IMPACT 2.0 will build on the success of the IMPACT project by engaging at least 120 youth with developmental disabilities ("youth") from across British Columbia in the project each year for three years for an additional 360 youth. Impact 2.0 will also expand its project to other communities by increasing its partners from eight to ten. We will continue to use some instruments from IMPACT 1.0 for the next iteration in order to compare results where possible, and will continue to incorporate a GBA+ analysis throughout IMPACT 2.0.

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Appendix A: Methods

IMPACT uses a concurrent mixed methods formative design to evaluate the outcomes of IMPACT over three cohorts (Creswell & Plano Clark, 2011). Cohort 1 and Cohort 2 experienced COVID-19-related restrictions. Cohort 3 experienced these restrictions to a lesser extent, as for instance mask mandates had been lifted and larger gatherings were allowed. Nevertheless, the eight organizations at times used modified interventions to align with public health orders and health safety. The intervention diaries used to document the intervention activities are reflective of these modified interventions in which some occurred in online settings and some in direct in-person settings. In light of these limitations, the guiding research questions were: "*In what ways is intervening early with youth effective in producing positive employment related outcomes?*" and, "*What methods of intervention are statistically correlated to the employment outcomes of the youth?*"

1.1 Recruitment and sampling

Several inclusion criteria guided the selection and recruitment of the youth participant sample: 1) aged between 15 and 19 years at the start of the program, 2) has a diagnosed IDD, and 3) the youth have a parent/caregiver to provide consent if the youth is under 19, the age of majority in BC. All eight agencies approached recruitment through a variety of means. A recruitment flyer was distributed to local organizations positioned to assist with recruitment (e.g., Inclusion BC, STAIDD Navigators, and CLBC). In addition, agencies recruited through their local school districts, and internal resources. Each agency held virtual or an in-person information session with potential youth and their caregivers, or in-person individual sessions when requested. Interested youth were invited to participate. Youth who declined were invited to participate as part of the control group. In total, 253 youth actively participated in an IMPACT summer program dispersed across the eight organizations. The number of active participants per agency across all three cohorts was as follows: one agency had 28 active participants; two agencies had 29 participating youth; one agency recruited 30 active youth; one agency recruited 31 youth; one agency recruited 32 youth; one agency recruited 35 youth; and one agency had 39 actively participating youth. Agency interventions included meetings with the youth in-person or virtually and individual youth diaries included details about those meetings and whether they were one-on-one or in a group setting. Thirty youth across these agencies were not exposed to any interventions and became the control group. These control group youth completed the

entrance and exit interviews, including the questions about their self-determined level of support, overall support, knowledge about employment, and the Meticulon Assessment Survey (MAS). However, these control group youth did not receive any employment interventions from the agencies outside of the completion of the entrance and exit interview.

1.2 Data collection

Upon consenting to participate in the program, entrance interviews were conducted prior to commencing the program. Entrance interviews were conducted in-person, unless a virtual meeting was appropriate given COVID protocols. Throughout the intervention, staff kept intervention diaries documenting the activities during the program, both directly with the youth and on behalf of the youth, and logged employment experiences (paid and unpaid). Employment outcomes (paid and unpaid) were also documented at the end of the program. Each youth was given a $25 gift card four times during their involvement in IMPACT. They received a gift card following the entrance and exit interviews and monthly during their time in the program. Youth in the control group were given a $25 gift card after both the entrance and exit interviews as well.

Results regarding agency intervention and youth engagement were collected using several instruments. Pre- and post-interviews were conducted directly with the youth and their parents/caregivers. For the purposes of this appendix, “parent(s)” will be used as an umbrella term to refer to parents/caregivers/guardians. The entrance interviews with the youth include demographic information (e.g., age, level of education, self-identified level of disability/support needed), questions about the youth’s knowledge of employment, and the MAS (MAS, 2020). The entrance interviews with the parents include demographic information about the youth (e.g., age, gender, ethnicity, level of disability/support needed) and the MAS. The exit interviews for the youth repeated the knowledge of employment questions, the MAS, and supplementary questions about the youth’s experience in the program. The parent exit interview repeated the MAS for their youth. In addition, agency staff were instructed to systematically record their youth’s intervention activities (activities conducted on-behalf of the youth and activities conducted directly with the youth) to document the youth’s and employment specialists’ activities as they relate to program delivery and employment experiences (paid and unpaid). Finally, a short parent reflection survey was conducted to explore parents’ evaluation of the IMPACT Program through a Qualtrics survey. Cohorts 2 and 3 used the changed scales,

proposed after the pilot (Cohort 1) to better reflect the agencies' interventions and the youth's experience in IMPACT (Appendix C). The next section details the measures used in the data collection process.

1.3 Measures

Evaluation of IMPACT is based on data gleaned from the youth themselves in their entrance and exit interviews. Youth answered questions about their general knowledge of employment and expectations for the IMPACT program. Youth completed the MAS, which consists of 11 predictive domains of getting a job and keeping a job. In addition, employment specialists asked youth four questions related to their experience with IMPACT and their overall satisfaction with the interventions. Parents provided additional feedback and reflection about IMPACT and their youth's engagement. Similar to the youth, parents completed the MAS and answered questions that allowed for the evaluation of the IMPACT program.

The entrance interviews first collected demographic data. Participants and their parents completed questions about the youth's sex/gender, age, ethnicity, minority status, and highest completed level of education. These questions were followed by scales and multiple-response questions to gain further insight into the youth's baseline employment experiences before engagement with IMPACT. These demographic and baseline questions were followed by the Arc's Level of Support Subscale derived from the Arc's Self-Determination Scale (Wehmeyer 1995) that was developed to assess the level of self-determination of adults with mental and developmental disabilities (p. 5). This project specifically adopted the Arc's Level of Support Subscale to enable students to self-assess the level of support needed in seven areas of assistance (Wehmeyer 1995, p. 6). The Level of Support subscale consists of 7 questions (see below) along a 3-point scale. Youth indicated "None" (1 point), "A Little" (2 points), or "A Lot" (3 points) of support needed in response to each question.

Arc's Level of Support Subscale questions:

- When it comes to self-care how much support/assistance do you need?
- When it comes to learning how much support/assistance do you need?
- When it comes to mobility how much support/assistance do you need?
- When it comes to self-direction how much support/assistance do you need?
- When it comes to receptive and expressive language how much support/assistance do you need?

• When it comes to capacity for independent living how much support/assistance do you need?
• When it comes to economic self-sufficiency how much support/assistance do you need?

This is an additive scale, with scores divided by seven constrained to values between one and three; the higher the score, the greater the self-assessed need for support. The mean score then represents a general tendency to “None”, “A Little”, or “A Lot” of support needed in the seven areas questioned.

Another closely related general question in connection to the Arc’s Level of Support Subscale asked youth about their overall need for support during the day. This overall question consists of a 5-point scale ranging between 1 and 5: “None” (1 point), “A Little” (2 points), “A Medium Amount” (3 points), “A Lot” (4 points), to “I need support all the time” (5 points).

To assess the influence of employment interventions on the youth to see whether and how a tailored approach will improve future employment outcomes, entrance surveys inquired about their previous work experiences in direct response format. Questions asked about previous paid, and/or volunteer work experiences and whether the youth was ‘currently employed’ at the time of the entrance interview. Youth were subsequently asked about their work experiences and employment outcomes at the exit interview. This is important in order to gauge change in employment outcomes over time and to assess the effectiveness of IMPACT in providing meaningful employment training and engagement with the youth. Agencies collected data related to the individual youth’s work experiences at entrance and exit interviews. Pie charts and tables are used in the results section of this report to demonstrate any change in the youth’s previous work experiences and work experiences gained through participation in IMPACT based on the entrance and exit interview data. These figures also distinguish between paid and unpaid work experiences.

Entrance and exit Interviews for both youth and parents included the MAS. The MAS was originally developed by Meticulon Consulting (2020) as an assessment instrument covering multiple predictive domains for getting a job and job retention based on the research evidence. Meticulon Consulting (2020) provides employment support to working-age individuals with autism spectrum disorder and their consulting and MAS Inventory are used to support these individuals with their employment journey. This scale allows for an assessment of the youth’s employment capacities and capability domains or employability skills. The MAS includes the following employment domains:

• Time Expectations (3 questions);
• Organization (4 questions);
• Authority (3 questions);
• Teamwork (4 questions);
• Perseverance (3 questions);
• Responsibility (3 questions);
• Motivation Level (3 questions);
• Mindfulness (3 questions);
• Self-Awareness (3 questions);
• Communication Skills (2 questions);
• Personal Appearance (1 question).

These questions were given values according to a 5-value Likert-scale ranging from “Strongly Disagree”, “Disagree”, “Neither Agree nor Disagree”, “Agree”, to “Strongly Agree”. Points allotted to these answers range from 1 to 5, respectively.

Youth were also asked fill-in-the-blank questions related to their general knowledge about employment. Table 3 displays the 5 questions asked. Question 1, 2, and 3 could be answered with “Nothing”, “A little”, “A fair amount” or “A lot” for 1 to 4 points, respectively. For question 4, answer options were “Not excited”, “A little excited”, “Fairly excited” or “Very excited” followed by question 5 with answer options “Not confident”, “A little confident”, “Fairly confident” or “Very confident”. These response categories were assigned from 1 to 4 points. Individual mean scores for these five questions are calculated based on the youth’s responses at both entrance and exit interviews to gauge change over time in their knowledge about employment after IMPACT interventions.

For the three cohorts, parents provided additional feedback and reflection about IMPACT and their youth’s engagement in a Qualtrics survey. Parents completed this 10-minute questionnaire to reflect on their youth’s experience in the IMPACT program through five statements. These statements ranged in possible responses from “Strongly disagree” to “Strongly agree” on a 5-point Likert-response to gauge appreciation for the program as observed by the parent/caregiver (each statement ranging from 1 point – 5 points, respectively). Additionally, parents in cohorts 2 and 3 also completed the MAS during the entrance and exit interview phases to systematically capture their perspectives about their youth’s involvement with IMPACT and change over time in those 11 employability domains.

Lastly, follow-up interviews were conducted eight to ten months after the IMPACT exit interviews to gauge continued employment and satisfaction among youth regarding their IMPACT experience. This is included questions about employment along a 5-item Likert-scale and some open-ended questions.

Appendix B: Table corresponding to Results and Discussion Sections

1. Demographic descriptive statistics (n=253)

Tables B1 to B6 display the demographic statistics for the 253-participating youth (n=253). Please consult the individual IMPACT reports for Cohort specific data (Hole et al., 2021; Hole et al., 2022; Hole et al., 2023).

Table B1: Gender

	Frequency	Percent
Male	184	72.7
Female	65	25.7
Non-binary	2	.8
Prefer not to answer	2	.8
Total	253	100.0

Table B2: Age

Age at Entrance Interview	
Mean	17.06
Minimum	14
Maximum	19

Table B3: Age Distribution

	Frequency	Percent
14	1	.4
15	28	11.1
16	49	19.4
17	81	32.0
18	65	25.7
19	29	11.5
Total	253	100.0

Table B4: Ethnicity

Does the youth identify as Indigenous, that is,		
	Frequency	Percent
Yes	15	6.0
No	223	89.6
Prefer not to answer	11	4.4
Total	249*	100

* 4 missing

Table B5: Minority

Does the youth identify as a visible minority?		
	Frequency	Percent
Yes	91	36.1
No	147	58.3
Prefer not to answer	14	5.6
Total	252*	100.0

* 1 missing

Table B6: Education

Education level finished at the start of IMPACT		
	Frequency	Percent
Grade 8	1	.4
Grade 9	6	2.4
Grade 10	48	19.1
Grade 11	72	28.7
Grade 12	96	38.2
Grade 13 and over	28	11.2
Total	251*	100.0

* 2 missing

2. Supports

Tables B7 and B8 refer to the data in response to questions about self-determined level of support needed across all three cohorts for the Arc's Level of Support Subscale (n=253). Tables B9 and B10 look at the overall support needed as identified by the youth and the parents (n=181). Table B11 provides the statistically significant correlation between the Arc's Subscale and the Overall Support for youth in Cohorts 2 and 3 (n=181).

Table B7: Arc's Level of Support Subscale

Arc's 7-item subscale	
Valid	245
Missing	8
Mean	1.8720
Std. Deviation	.37161

Table B8: Arc's Level of Support Subscale Descriptive Statistics

	N	Mean	Std. Deviation
When it comes to self-care how much support/assistance do you need?	253	1.381	.5650
When it comes to learning how much support/assistance do you need?	252	2.216	.5373
When it comes to mobility how much support/assistance do you need?	253	1.441	.6846
When it comes to self-direction how much support/assistance do you need?	251	1.857	.6583
When it comes to receptive and expressive language how much support/assistance do you need?	250	1.814	.6754
When it comes to capacity for independent living how much support/assistance do you need?	250	2.196	.7153
When it comes to economic self-sufficiency how much support/assistance do you need?	251	2.215	.7494
Valid N (listwise)	245		

Table B9: Overall Support identified in Cohorts 2 and 3

*What level of support do you need to do the things you do? **		
	Youth	Parent
Valid	180	171
Missing	1	10
Mean	2.844	3.067
Std. Deviation	.9503	.8436

*Minimum is 1.0 and maximum is 5.0

Table B10: Overall Support Distribution for Youth in Cohorts 2 and 3 (n=181)

	Frequency	Percent
None	11	6.1
A little	53	29.4
Both a little and a medium	3	1.7
A medium amount	74	41.1
Both a medium amount and a lot	1	.6
A lot	28	15.6
I need support all the time	10	5.6
Total	180*	100.0

* 1 missing

Table B11: Correlation Arc's Level of Support Subscale and Overall Support

		What overall level of support do you need (Youth)	*What overall level of support does your youth need (Parent)*
What overall level of support does your youth need (Parent)	Pearson Correlation	.287***	1
	Sig. (2-tailed)	<.001	
	N	170	171
Arc's 7-item subscale	Pearson Correlation	.538***	.359***
	Sig. (2-tailed)	<.001	<.001
	N	179	170

*. p ≤ .05.
**. p ≤ .01.
*** p ≤ .001.

3. Employment

Tables B12 to B18 relate the paid and unpaid work experiences of the 253 youth. Tables B12 to B15 refer to work experiences and employment before IMPACT intervention, as data collected by the agency employment specialists during the entrance interviews. Tables B16 to B18 refer to work experiences and employment after IMPACT intervention, as data collected by the agency employment specialists during the exit interviews. Figures B1 to B3 provide Cohort specific data about the youth's work experiences before and after IMPACT interventions. Figures B4 and B5 provide summative data about the youth's work experiences before and after IMPACT interventions, including sex/gender distribution.

Table B12: Employed at Entrance Interview

	Frequency	Percent
Yes	38	15.0
No	215	85.0
Total	253	100

Table B13: Previously Employed

	Frequency	Percent
Yes	67	26.5
No	186	73.5
Total	253	100

Table B14: Unpaid Work Experiences

	Frequency	Percent
Yes	192	75.9
No	61	24.1
Total	253	100

Table B15: Paid and Unpaid Work Experiences of Youth before IMPACT Program

	Frequency	Percent
None	50	19.8
Only unpaid experiences	119	47.0
Only paid experiences	14	5.5
Both unpaid and paid	70	27.7
Total	253	100.0

Table B16: Paid Work Experiences through IMPACT

	Frequency	Percent
Yes	114	45.1
No	139	54.9
Total	253	100

Table B17: Unpaid Work Experiences through IMPACT

	Frequency	Percent
Yes	125	49.4
No	128	50.6
Total	253	100

Table B18: Paid and Unpaid Work Experiences after IMPACT Program

	Frequency	Percent
None	16	6.3
Only unpaid experiences	84	33.2
Only paid experiences	22	8.7
Both unpaid and paid	131	51.8
Total	253	100.0

Figure B1: Employment before and after IMPACT Cohort 1 (n=72)

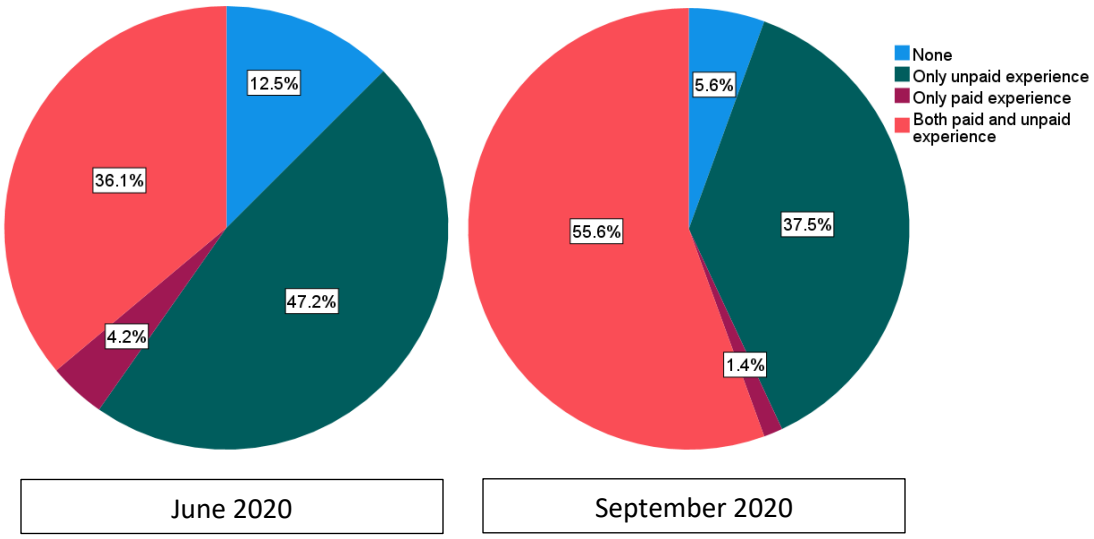


Figure B2: Employment before and after IMPACT Cohort 2 (n=91)

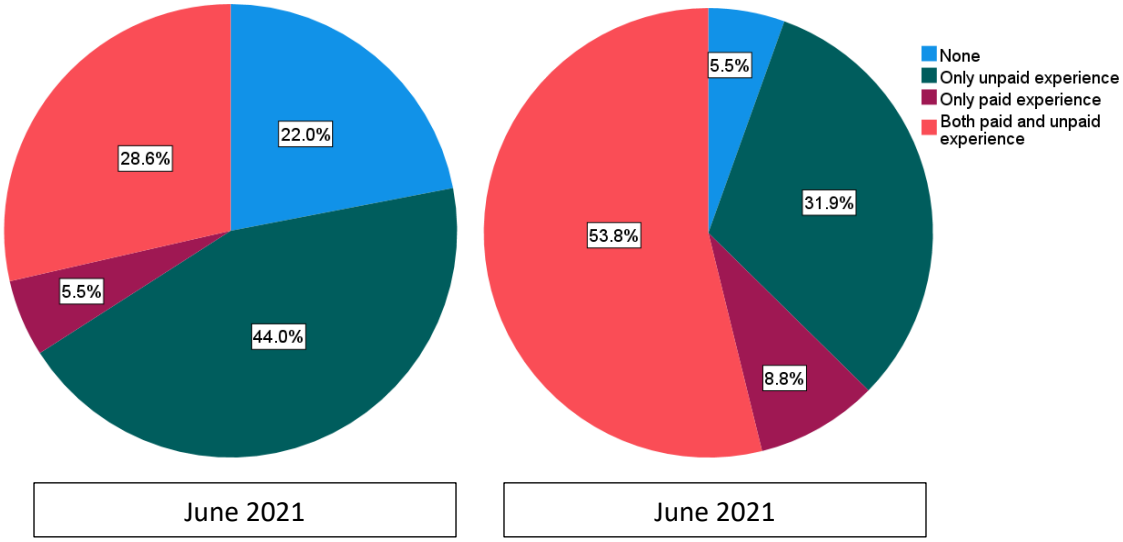


Figure B3: Employment before and after IMPACT Cohort 3 (n=90)

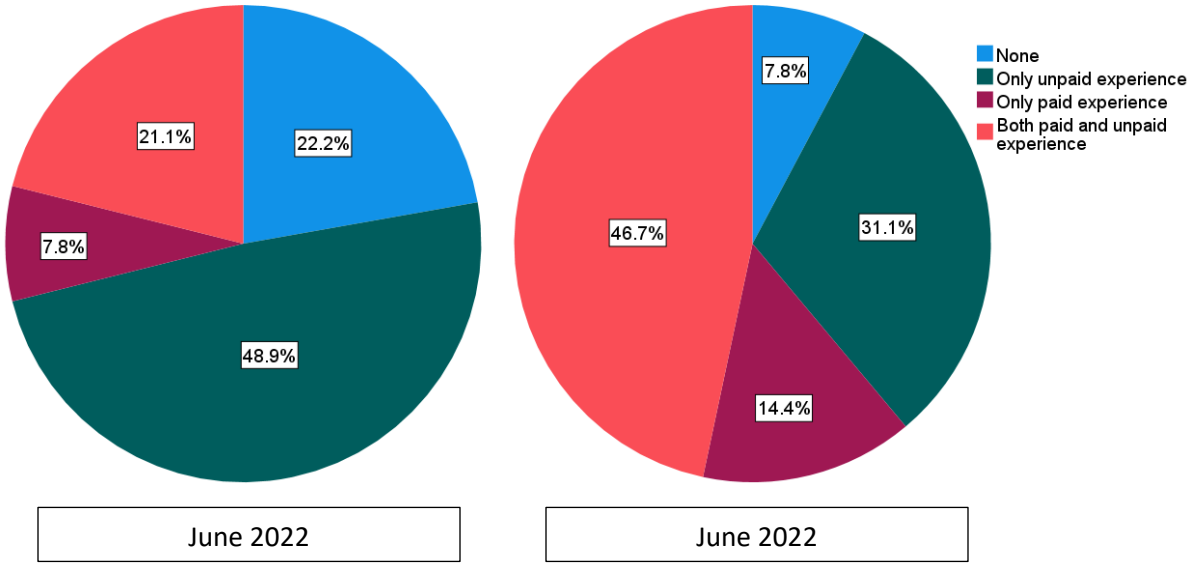


Figure B4: Employment before and after IMPACT all cohorts (n=253)

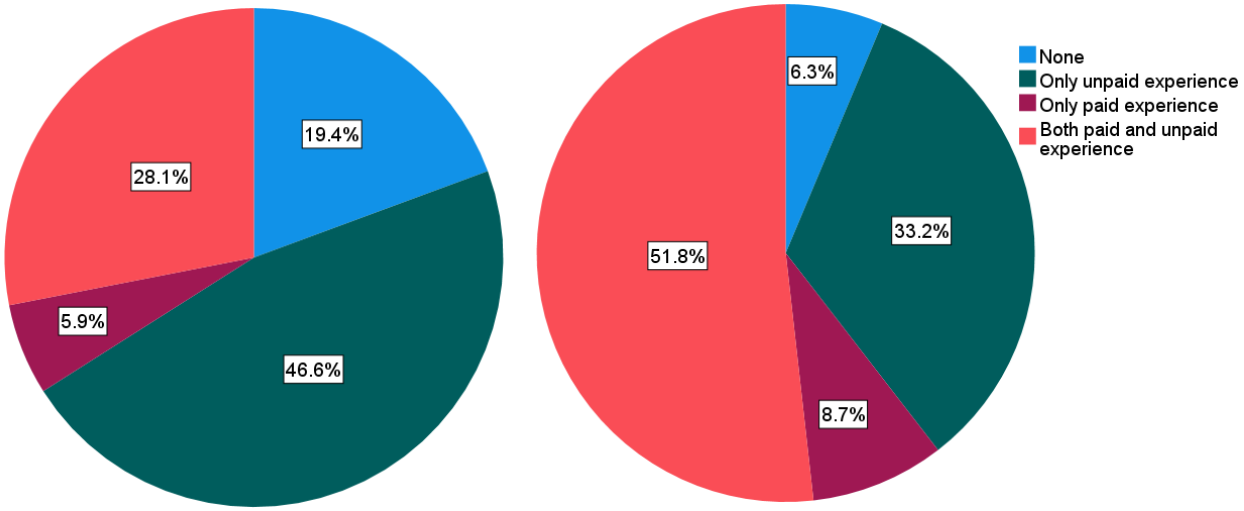
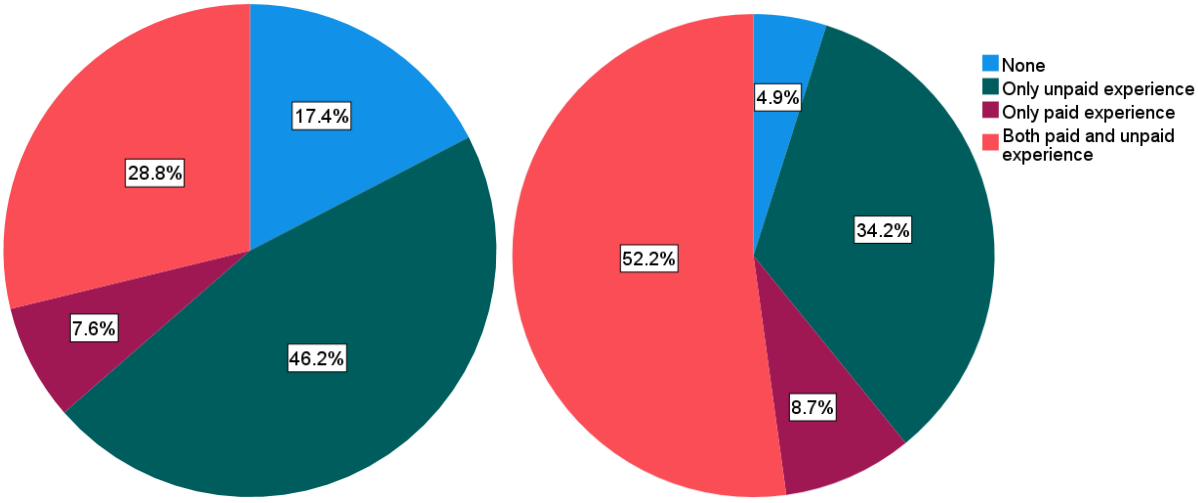
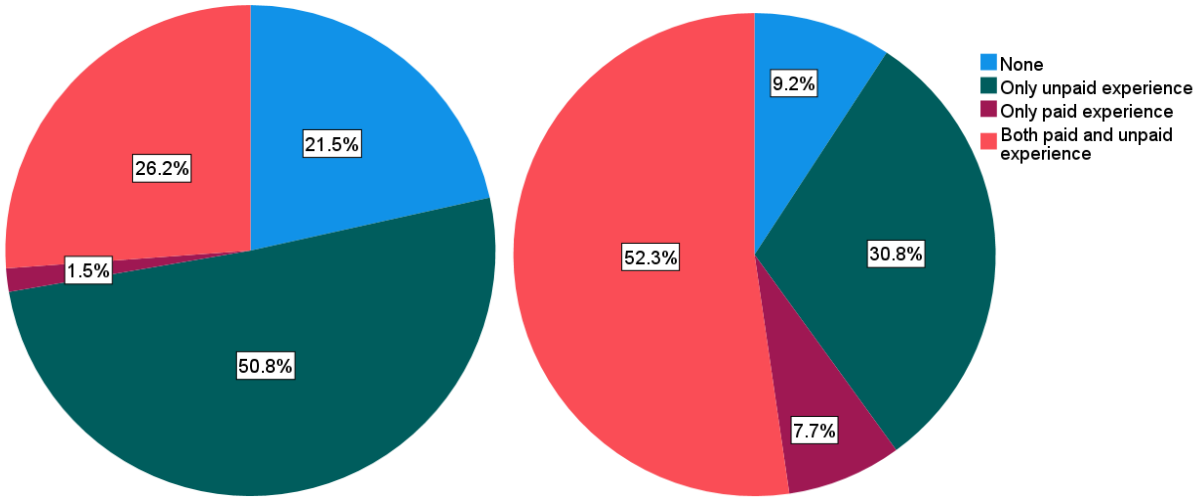


Figure B5: Sex/Gender Distribution Employment before and after IMPACT (n=249)[29]

Male youth (n=184)



Female youth (n=65)



[29] Two non-binary participants and two participants who preferred not to answer the entrance interview question about their sex/gender are excluded in this figure as their representation presents too small a number to constitute a group for the purpose of visualizing the gained work experiences across cohorts for participating youth.

4. Agency Data

Tables B19 to B23 display the specific data gleaned from agency intervention and employment diaries. Tables B19, B21, and B23 refer to agency data for all three cohorts. Tables B20 and B22 refer to agency data for Cohorts 2 and 3. Following feedback after the Cohort 1 pilot run for IMPACT, Cohorts 2 and 3 more consistently included agency reporting on the employment specialist interventions reflected in these two tables (see also Appendix C). Tables B19 to B23 specify the type of employment in a multiple response set (Table B19), sectors of employment (Table B20), level of engagement with IMPACT activities and interventions (Tables B21 and B22), and a follow question about employment (Table B23).

Table B19: Work Experiences of Youth that gained Work Experience (n=253)[30]

Type of Employment	Frequency
Full-time	4
Full-time Seasonal	9
Part-time	50
Part-time Seasonal	35
Contract	22
Self-employed	8
Work experience	150
Total	278

* For the 184 youth that gained employment experiences across the three cohorts.

Table B20: Work Confirmation Sectors of Industry (n=181)

	1st Work Confirmation	*2nd Work Confirmation*	*3rd, 4th, 5th Work Confirmation*	*Total Work Confirmations per Sector*
Health Occupations	2	-	-	2
Manufacturing/Utilities	6	-	-	6
Business/Finance	8	-	-	8
Arts/Culture/Recreation/Sport	12	-	-	12
Education/Law/Social	17	10	-	27
Trades/Transport/Equipment	27	5	10	42
Sales/Service	35	7	6	48
Natural	20	15	21	56

[30] For data per cohort, please see Hole et al., 2021, p. 30, Hole et al., 2022, p. 50, and Hole et al., 2023, p. 44.

Table B21: Youth's Level of Engagement per Intervention Diaries (n=253)

	Frequency	Percent
Minimally engaged 0% - 25%	9	3.6
Somewhat engaged 26% -	19	7.5
Engaged 51% - 75%	43	17.0
Very engaged 76% - 100%	182	71.9
Total	253	100

Table B22: Interventions (n=181)

	Minimum	Maximum	Mean	Std. Deviation
Total time spent (minutes)	337	11970	3229	1972.6
Total time spent in interventions on behalf of the youth (minutes)	30	2760	853	618.4
Total time spent in interventions directly with youth (minutes)	150	10885	2384	1580.3
Total time spent virtually or via electronic means of communication (minutes)	0	2700	465	635.2
Total time spent directly - in-person (minutes)	0	10885	1918	1780.7

Table B23: After IMPACT (n=253)

Continued Paid Employment at Exit*	Frequency	Percent
Yes	64	52.5
No	58	47.5
Total	122	100

* This only refers to those youth that gained paid employment during IMPACT

5. Evaluation

Tables B24 to B28 correspond to feedback questions asked during exit interviews to gauge the youth's IMPACT experience across all three cohorts.

Table B24: Descriptive statistics Youth Experience*

	N	Mean
I like my experience in the program	249	4.07
I enjoyed the activities while participating in the program	231	3.98
I learned different ways about how to get a paid job during the program	243	3.80
I feel that the things I learned during my time in the program will help me get a paid job in the future.	245	4.00
Valid N (listwise)	221	

* Range from 1.0 to 5.0.

Table B25: Youth Program Experience

Statement: *I like my experience in the program*	Frequency	Percent
Strongly disagree	2	.8
Disagree	1	.4
Neutral	53	21.3
Agree	115	46.2
Strongly agree	78	31.3
Total	249*	100.0

* 4 missing.

Table B26: Youth Program Appreciation

Statement: *I enjoyed the activities while participating in the program*	Frequency	Percent
Strongly disagree	1	.4
Disagree	7	3.0
Neutral	45	19.5
Agree	121	52.4
Strongly agree	57	24.7
Total	231*	100.0

* 22 missing.

Table B27: Youth Program Skills

Statement: *I learned different ways about how to get a paid job during the program*	Frequency	Percent
Strongly disagree	2	.8
Disagree	12	4.9
Neutral	60	24.7
Agree	128	52.7
Strongly agree	41	16.9
Total	243*	100.0

* 10 missing.

Table B28: Youth Perceptions Future Employment

Statement: *I feel that the things I learned during my time in the program will help me get a paid job in the future*	Frequency	Percent
Strongly disagree	2	.8
Disagree	2	.8
Neutral	55	22.4
Agree	121	49.4
Strongly agree	65	26.5
Total	245*	100.0

* 8 missing.

6. Meticulon Assessment Survey (MAS) and Knowledge about Employment

Table B29 displays the Paired Samples t-Test for the MAS inventory per employment skill domain at the entrance and the exit interviews for the 253-participating youth. The eleven domains (Time expectations, Organization skills, Authority, etc.) are paired according to their entrance and exit scores for each participant. Table B30 reflect the Knowledge about Employment at entrance and exit for Cohort 1 before the scale was adjusted (see also Appendix C). Table B31 engages with the Knowledge about Employment at entrance and exit for Cohorts 2 and 3 accounting for sex/gender differences.

Table B29: Paired Samples t-Test MAS (n=253)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Time Expectations at Exit - Entrance	.14361	.78076	.04909	.04694	.24028	2.926	252	.004**
Organization Skills at Exit - Entrance	.11032	.78635	.04954	.01276	.20788	2.227	251	.027*
Authority at Exit - Entrance	.20238	.70290	.04428	.11518	.28959	4.571	251	<.001***
Teamwork at Exit - Entrance	.18700	.63282	.03986	.10849	.26551	4.691	251	<.001***
Perseverance at Exit - Entrance	.14021	.68546	.04318	.05517	.22525	3.247	251	.001**
Responsibility at Exit - Entrance	.10738	.73971	.04651	.01579	.19897	2.309	252	.022*
Motivation at Exit - Entrance	-.03623	.59771	.03758	-.11024	.03777	-.964	252	.336
Mindfulness at Exit - Entrance	.08664	.68637	.04324	.00149	.17179	2.004	251	.046*
Self-Awareness at Exit - Entrance	.14800	.71813	.04542	.05855	.23745	3.259	249	.001**
Communication at Exit - Entrance	.06200	.72058	.04557	-.02776	.15176	1.360	249	.175
Appearance at Exit - Entrance	.18651	.98238	.06188	.06463	.30839	3.014	251	.003**

* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .001$.

Table B30: Knowledge about Employment Cohort 1 (n=72)[31]

Question	Mean Entrance	Mean Exit	p-value
When it comes to employment, I know ____ about how to start looking for a job.[32]	1.87	2.27	<.001***
When it comes to employment, I know ____ about the kind of job I want.[33]	2.14	2.37	.028**
When it comes to employment, I know ____ about what qualities employers are looking for in a good employee.	2.10	2.53	<.001***
When it comes to getting a job, I feel ____ confident about working.	2.20	2.35	.028**
When it comes to getting a job, I feel ____ excited.[34]	2.20	2.31	.155

* p ≤ .05.
** p ≤ .01.
*** p ≤ .001.

Table B31: Knowledge about Employment analyzed for sex/gender differences (n=177)[35]

Question	Mean Entrance Male	Mean Exit Male	p-value Male	Mean Entrance Female	Mean Exit Female	p-value Female
When it comes to employment, I know ____ about how to start looking for a job.	2.23	2.63	<.001***	2.40	2.87	<.001***
When it comes to employment, I know ____ about the kind of job I want.	2.42	2.89	<.001***	2.60	2.94	.012*
When it comes to employment, I know ____ about what qualities employers are looking for in a good employee.	2.41	3.00	<.001***	2.65	3.17	<.001***
When it comes to getting a job, I feel ____ confident about working.	2.94	3.18	.017*	2.93	3.10	.225
When it comes to getting a job, I feel ____ excited.	2.63	2.96	<.001***	2.65	2.90	.077

* p ≤ .05. ** p ≤ .01. *** p ≤ .001.

[31] In Cohort 1, these fill-in-the-blank questions were posed according to a 3-point scale (Hole et al., 2021, p. 7).
[32] 2 missing.
[33] 2 missing.
[34] 2 missing.
[35] The sex/gender comparison refers to those youth in Cohort 2 and 3 that identified as male or female. Those four identifying as non-binary or preferred not to answer the entrance interview question related to their sex/gender are not included in this table.

7. Control Group

Demographic data for the 30-control group youth (n=30) is made visible in Tables B32 to B39. Tables B40 to B43 relate their employment details. Table B44 provides the Paired Samples t-Test for the MAS inventory similar to Table B29 for the participating youth.

Table B32: Sex/Gender

		Frequency	Percent
Control Group	Male	21	70.0
	Female	9	30.0
	Total	30	100.0
Participant Group	Male	184	72.7
	Female	65	25.7
	Non-binary	2	.8
	Prefer not to answer	2	.8
	Total	253	100.0

Table B33: Age

Control Group	N=30
Mean	16.47
Median	16.00
Std. Deviation	1.332
Participant Group	N=253
Mean	17.06
Median	17.00
Std. Deviation	1.179

Table B34: Ethnicity

		Frequency	Percent
Control Group	Yes	1	3.3
	No	28	93.3
	Prefer not to answer	1	3.3
	Total	30	100.0
Participant Group	Yes	15	6.0
	No	223	89.6
	Prefer not to answer	11	4.4
	Total	249*	100.0

* 4 missing.

Table B35: Minority

		Frequency	Percent
Control Group	Yes	7	23.3
	No	21	70.0
	Prefer not to answer	2	6.7
	Total	30	100.0
Participant Group	Yes	91	36.1
	No	147	58.3
	Prefer not to answer	14	5.6
	Total	252*	100.0

* 1 missing.

Table B36: Education

		Frequency	Percent
Control Group	Grade 9	2	7.1
	Grade 10	5	17.9
	Grade 11	13	46.4
	Grade 12	7	25.0
	Grade 13 and over	1	3.6
	Total	28*	100.0
Participant Group	Grade 8	1	.4
	Grade 9	6	2.4
	Grade 10	48	19.1
	Grade 11	72	28.7
	Grade 12	96	38.2
	Grade 13 and over	28	11.2
	Total	251**	100.0

* 2 missing. ** 2 missing.

Table B37: Arc's Level of Support Subscale

Control Group	N	Valid	30
		Missing	0
	Mean		1.7381
Participant Group	N	Valid	245
		Missing	8
	Mean		1.8720

Table B38: Arc's Level of Support Subscale Descriptive Statistics Control Group

	N	Mean	Std. Deviation
When it comes to self-care how much support/assistance do you need?	30	1.267	.5208
When it comes to learning how much support/assistance do you need?	30	2.233	.5040
When it comes to mobility how much support/assistance do you need?	30	1.433	.6789
When it comes to self-direction how much support/assistance do you need?	30	1.700	.7022
When it comes to receptive and expressive language how much support/assistance do you need?	30	1.800	.6644
When it comes to capacity for independent living how much support/assistance do you need?	30	1.933	.7849
When it comes to economic self-sufficiency how much support/assistance do you need?	30	1.800	.7144

Table B39: Overall Support

	N	Valid	20
		Missing	10
	Mean		2.850
	N	Valid	180
		Missing	73
	Mean		2.844

7.1 Control Group Employment Data

Table B40: Employed at Entrance

		Frequency	Percent
Control Group	Yes	4	13.3
	No	26	86.7
	Total	30	100
Participant Group	Yes	38	15.0
	No	215	85.0
	Total	253	100

Table B41: Previous Paid Work Experiences

		Frequency	Percent
Control Group	Yes	10	33.3
	No	20	66.7
	Total	30	100
Participant Group	Yes	67	26.5
	No	186	73.5
	Total	253	100

Table B42: Previous Unpaid Work Experiences

		Frequency	Percent	
Control Group	Yes	20	66.7	
	No	10	33.3	
	Total	30	100	
Participant Group	Yes	192	75.9	
	No	61	24.1	
	Total	253	100	

Table B43: Gained Paid Employment

		Frequency	Percent
Control Group	Yes	4	13.3
	No	26	86.7
	Total	30	100
Participant Group	Yes	114	45.1
	No	139	54.9
	Total	253	100

Table B44: Gained Unpaid Employment

		Frequency	Percent
Control Group	Yes	6	20.0
	No	24	80.0
	Total	30	100
Participant Group	Yes	125	49.4
	No	128	50.6
	Total	253	100

Table B45: Paired Samples t-Test MAS Control Group

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Time Expectations at Exit - Entrance	.06667	1.11898	.20430	-.35117	.48450	.326	29	.747
Organization Skills at Exit - Entrance	-.07500	1.11253	.20312	-.49042	.34042	-.369	29	.715
Authority at Exit - Entrance	-.13333	1.08490	.19808	-.53844	.27178	-.673	29	.506
Teamwork at Exit - Entrance	-.25000	1.07479	.19623	-.65133	.15133	-1.274	29	.213
Perseverance at Exit - Entrance	-.22619	1.05430	.19924	-.63501	.18263	-1.135	27	.266
Responsibility at Exit - Entrance	-.10000	1.16511	.21272	-.53506	.33506	-.470	29	.642
Motivation at Exit - Entrance	-.13333	1.09545	.20000	-.54238	.27571	-.667	29	.510
Mindfulness at Exit - Entrance	-.21111	1.03013	.18808	-.59577	.17355	-1.122	29	.271
Self-Awareness at Exit - Entrance	-.12222	1.12948	.20621	-.54398	.29953	-.593	29	.558
Communication at Exit - Entrance	-.13333	1.05808	.19318	-.52843	.26176	-.690	29	.496
Appearance at Exit - Entrance	-.26667	1.14269	.20863	-.69336	.16002	-1.278	29	.211

* p ≤ .05.
** p ≤ .01.
*** p ≤ .001.

8. Parental Reflections about Youth

Tables B46 to B51 reveal the data gleaned from the parent/caregiver/guardian online Qualtrics survey distributed in the fall for all three Cohorts. Table B51 reflects the Meticulon Assessment Survey completed by the parents/caregivers/guardians at entrance and exit in perceived eleven domains of employability during Cohort 2 and 3.

Table B46: Parent/Caregiver Guardian Relation to Youth

	Frequency	Percent
Parent	96	94.12
Guardian	1	.98
Relative	1	.98
Caregiver	1	.98
Other	3	2.94
	102	100

Table B47: Parental Program Satisfaction

Statement: *I am overall satisfied with our experience with IMPACT*	Frequency	Percent
Strongly Agree	52	50.98
Agree	36	35.29
Neutral	9	8.82
Disagree	3	2.94
Strongly disagree	2	1.96
Total	102	100

Table B48: Parental Reflection on Youth's Experience in IMPACT

Statement: *Your youth enjoyed learning and experiencing employment related activities*	Frequency	Percent
Strongly Agree	47	46.08
Agree	40	39.22
Neutral	12	11.76
Disagree	2	1.96
Strongly disagree	1	0.98
Total	102	100

Table B49: Parental Reflections on Youth's Future Employment

Statement: *I feel that the things my youth learned during our time with the program will help them to get a paid job in the future*	Frequency	Percent
Strongly Agree	43	42.13
Agree	47	46.08
Neutral	9	8.82
Disagree	2	1.96
Strongly disagree	1	0.98
Total	102	100

Table B50: Parental Reflections on Youth's Barriers to Employment

Statement: *I feel like the program addressed potential barriers to employment through skill and ability training*	Frequency	Percent
Strongly Agree	30	29.41
Agree	47	46.08
Neutral	19	18.63
Disagree	5	4.90
Strongly disagree	1	.98
Total	102	100

Table B51: Parental Reflection on Soft Skills

Statement: *I feel like the program improved the soft skills of my youth*	Frequency	Percent
Strongly Agree	29	28.43
Agree	54	52.94
Neutral	14	13.73
Disagree	4	3.92
Strongly disagree	1	.98
Total	102	100

Table B52: Paired Samples t-Test MAS Parents/Caregivers/Guardians Group

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Time Expectations Exit - Entry	.13211	.70867	.05534	.02284	.24138	2.387	163	.018*
Organization Exit - Entry	.11061	.63279	.04926	.01334	.20788	2.245	164	.026*
Authority Exit - Entry	.15161	.72027	.05590	.04123	.26199	2.712	165	.007**
Teamwork Exit - Entry	.09470	.64261	.05003	-.00408	.19348	1.893	164	.060
Perseverence Exit - Entry	.10743	.65057	.05049	.00773	.20713	2.128	165	.035*
Responsibility Exit - Entry	.15170	.65752	.05088	.05124	.25215	2.981	166	.003**
Motivation Level Exit - Entry	.00000	.67775	.05276	-.10418	.10418	.000	164	1.000
Mindfulness Exit - Entry	-.01212	.59769	.04653	-.10400	.07975	-.261	164	.795
Self-Awareness Exit - Entry	.06442	.77564	.06075	-.05555	.18439	1.060	162	.291
Communication Exit - Entry	.12828	.73359	.05711	.01552	.24105	2.246	164	.026*
Appearance Exit - Entry	.13855	1.00095	.07769	-.01484	.29195	1.783	165	.076

* p ≤ .05.
** p ≤ .01.
*** p ≤ .001.

9. Follow-Up Interviews Cohorts 1 and 2

Tables B53 to B60 reflect youth responses from the follow-up interviews completed for Cohort 1 and 2 approximately eight to ten months after the exit interviews were completed. For Cohort 1, 68 youth completed follow-up interviews and for Cohort 2 this was completed by 65 youth. Cohort 3 will be asked to complete a follow-up interview in the Spring of 2023. Tables B56 to B60 reflect answers from participating youth that filled out the follow-up interview, as control group participants could not speak to the statements about their experience since they did not receive or participate in any IMPACT interventions. Table B59 and B60 reflect two follow-up

questions that include the answer option ‘N/A’ or not applicable since not all youth gained paid or unpaid work experiences.

Table B53: Paid Employment After IMPACT

Question: *Did you get a paid job during or after IMPACT?*		Frequency	Percent
Control	Yes	1	7.1
	No	13	92.9
	Total	14	100.0
Participant	Yes	43	36.1
	No	76	63.9
	Total	119	100.0

Table B54: Continued Employment After IMPACT

Question: *Are you still working in this job?*		Frequency	Percent
Control	Yes	1	100.0
	No	0	0.0
	Total	1	100.0
Participant	Yes	29	67.4
	No	14	32.6
	Total	43	100.0

Table B55: Unpaid Employment After IMPACT

Question: *Did you participate in a volunteer position during or after IMPACT?*		Frequency	Percent
Control	Yes	1	7.1
	No	13	92.9
	Total	14	100.0
Participant	Yes	46	38.7
	No	73	61.3
	Total	119	100.0

Table B56: Reflection IMPACT Experience (1)

Statement: *I liked my experience in the IMPACT Program*	Frequency	Percent
Neutral	14	11.8
Agree	53	44.5
Strongly agree	52	43.7
Total	119	100.0

Table B57: Reflection IMPACT Experience (2)

Statement: *I enjoyed the activities while participating in the IMPACT Program*	Frequency	Percent
Disagree	3	2.5
Neutral	15	12.6
Agree	59	49.6
Strongly agree	42	35.3
Total	119	100.0

Table B58: Reflection Knowledge Retention (1)

Statement: *I remember the different ways to get a paid job I learned about during the IMPACT Program*	Frequency	Percent
Strongly disagree	1	.8
Disagree	7	5.9
Neutral	26	21.8
Agree	65	54.6
Strongly agree	20	16.8
Total	119	99.9*

The percentage appears incorrect as a result of rounding.

Table B59: Reflection Knowledge Retention (2)

Statement: *The things I learned during my time in the IMPACT Program helped me to get a paid job*	Frequency	Percent
Disagree	6	5.0
Neutral	5	4.2
Agree	24	20.2
Strongly agree	28	23.5
N/A	56	47.1
Total	119	100.0

Table B60: Reflection Knowledge Retention (3)

Statement: *The things I learned during my time in the IMPACT Program helped me to get a volunteer job*	Frequency	Percent
Disagree	6	5.0
Neutral	16	13.4
Agree	26	21.8
Strongly agree	12	10.1
N/A	59	49.6
Total	119	99.9*

The percentage appears incorrect as a result of rounding.

Appendix C: Changes post Cohort 1

The first cohort and pilot of IMPACT brought forward some considerations for the continuation of the IMPACT project and program. In general, given COVID-19 restrictions and this being the pilot cohort, 2020 results proved promising and informed the future cohorts in terms of strengthening instruments and improve the statistical results and potential analysis.

Instruments

Several instruments employed for cohort 1 revealed some revisions were needed to better engage with the youth answering the questions and increase the systematic and concise collection of data. The collaboration between the agencies and the Canadian Institute for

Inclusion and Citizenship showed some areas of the entrance and exit interview that could be slimmed down, due to repetitiveness and other areas that required more direct prompting of questions. Moving forward, youth responses to the questions reveals some demographic questions important for data analysis are better asked from parents/caregivers/guardians to ensure the systematically dependable collection of data. Moreover, the Meticulon Assessment Survey questionnaire will be distributed to the direct parent/guardian/caregiver in the future cohorts as well. This MAS inventory is important from the youth's own perspective in relation to these domains linked to future employability, and could be made even more interesting when assessed from the parent/guardian/caregiver perspective as well.

Sex/Gender based analysis

As indicated in the report's results and discussion, male-identifying youth with DD are more represented in research and employment opportunity programs than female-identifying youth displaying the same needs. Youth with IDD experience discrimination when entering or trying to engage with employment options and the job market. Their intersectional experience or axis of difference such as race, ethnicity, visible minority status, and gender intersect in different ways. Gender proves to be instrumental in gaining access to support and programs that focus on employment. Moving forward it would be interesting to see if IMPACT can add to the academic literature on how this question of access and engagement disparity experienced by the different gendered groups starts early on in education and other community-based and even parental engagement with youth in the DD spectrum.

The Control Group

As mentioned throughout the report, the importance of a control group is found in assessing the effectiveness of IMPACT interventions through a sample of youth not receiving any interventions. These youth are important to assess change over time as they answer the entrance and exit interview questions related to past and present employment experiences, knowledge about employment, and self-assessed strength in employment domains without receiving interventions. Based on the number of youth in the control group for cohort 1, a comparative analysis and more complex statistical questions were not feasible due to low sample size. However, with the continuation of IMPACT and around 30 or 40 control group

participants, this will become more important and indicative of the success rate of IMPACT interventions in relation to our research objective and employment outcomes.

The Parent/Guardian/Caregivers

The parent/guardian/caregiver survey is the result of a pilot online survey distributed in September and October of 2020. As shown in the results and addressed in the discussion, the 31 responses gained from this survey provided additional useful information regarding the youth, their engagement, and the results of IMPACT interventions. Soft skills addressed in the MAS inventory prove to be visible in other aspects of the youth's lives as well. The parent/guardian/caregiver survey indicates a positive response to IMPACT interventions and affirmation of the youth's capabilities in the open answer questions. This result combined with the agency's observations about the youth together with the perspectives of parents/guardians/caregivers created the idea to engage more with this group of people in close contact with the youth to measure and analyse the tailored approach of the IMPACT interventions and to increase the success rate and employment engagement of the youth connected to these agencies and employment programs.

Agency Assessments and Reporting

An important part of the assessment of IMPACT and the tailored approach envisioned in the study objective is based on reporting of the youth by IMPACT mentors and coaches. The eight agencies receive training and support from their own agency, other agencies, and feedback through the Canadian Institute for Inclusion and Citizenship to ensure the collection of data is conducted consistently and similarly across all agencies. The personal intervention diaries and employment results are catalogued in spreadsheets by the agency and the mentors after each engagement with or on behalf of the youth. As came forward in cohort 1, it is extra important to ensure a consistent and similar process in all agency bodies to ensure the statistical analysis of this data. Additional training and support will be provided in 2021 to show the results of the agency mentors reporting from the perspective of the statistical team at UBC. Transparency and feedback will aim to more clearly communicate the importance of the intervention diaries and the ways in which consistent completion of these diaries, interventions, and employment outcomes improves the reporting on each agency's hard and diligent work.

Interviews with Employers

Part of assessing the employment outcomes of the youth engaged with IMPACT will be assessed through follow up interviews with short- and long-term employers. Short questionnaires will be distributed and engage with some of the employment outcomes from the perspective of the employer or direct manager engaged with the youth.

Follow-up Interviews

In combination with interviewing the employers, IMPACT mentors from the different agencies will follow up with their youth and ask questions regarding their continued employment and job market interactions. This is to gage the long-term impact of the interventions and skills learned through IMPACT.

Proposal adjustments IMPACT 2.0

The 2022 IMPACT Cohort 3 demonstrated positive results. Similar to Cohort 2, but less defined by the COVID-19 pandemic, we recognize the incredible work, flexibility, and commitment of the eight partner agencies. While navigating their ongoing roles to support individuals with IDD in the agencies, the partnering agencies were able to actively, creatively, and safely engage with 100 youth with positive results. This third cohort continued the positive results also seen in Cohort 2 and propelled the considerations for the continuation for the IMPACT Project in 2023. In general, the results of this third cohort will provide considerable strength in terms of the statistical results and potential analysis together with Cohort 2.

After careful consideration and recognition of the success of Cohort 2 despite COVID-19 restrictions, agencies committed whole heartedly in proceeding with Cohort 3. This included the considerations related to the suspension of research with human participants to ensure the evaluation could proceed with UBC BREB Ethics approval in 2022 with several pandemic restrictions lifted. The interview instruments introduced in Cohort 1 and adapted in Cohort 2 to better capture youth responses during entrance and exit interviews as well as more concise recording of the youth interventions and work confirmations and parent involvement were also used for Cohort 3. Similarly, parents/caregivers/guardians completed MAS interviews to capture the observed increase of the youth's soft skills and employability domains by the people closest to them.

The Control Group

Moving forward, we hope to see increased numbers of youth in the control group. That said, it is an ethical imperative of the agencies participating to not deny support to youth who indicate a desire to be involved in the program. Moving forward we will continue to invite those who express interest to participate but then decline to participate in entrance and exit interviews, and as such be added to our control group. Based on the number of youth in the control group for cohort 2, a comparative analysis and more complex statistical questions were not feasible due to low sample size. However, with the continuation of IMPACT and around 30 or 40 control group participants across the three cohorts (while not ideal statistically), we will undertake more complex analyses as our sample sizes allow for the summative evaluation of impact assess the success rate of the IMPACT program.

The Parent/Caregivers

The parent/caregiver survey is the result of a pilot online survey distributed in September and October of 2021. As shown in the results and addressed in the discussion, the 43 responses gained from this survey provided additional useful information regarding the youth, their engagement, and the results of IMPACT interventions. Soft skills addressed in the MAS inventory prove to be visible in other aspects of the youth's lives as well. The parent/caregiver survey indicates a positive response to IMPACT interventions and affirmation of the youth's capabilities in the open answer questions. This result combined with the agency experiences with the parents/caregivers created the idea to engage more with this group of people in close contact with the youth to measure and analyse the tailored approach of the IMPACT interventions and to increase the success rate and employment engagement of the youth connected to these agencies and employment programs.

Agency Assessments and Reporting

An important part of the assessment of IMPACT and the tailored approach envisioned in the study objective is based on reporting of the youth by IMPACT employment specialists. For Cohort 1, the staff conducting data collection received training from the project consultant and lead researcher (Hole) from the UBC Canadian Institute for Inclusion and Citizenship to ensure the collection of data was conducted consistently and similarly across all agencies. The personal intervention diaries and employment results were catalogued in spreadsheets by the

agency employment specialists after each engagement with or on behalf of the youth. Upon review of the data for Cohort 1, we highlighted a need to further ensure a systematic and consistent process of data collection across all agencies. Additional training and support was provided to the employment specialists involved with data collection for Cohort 2. Again, training and support will be provided to ensure rigorous data collection for Cohort 3. More detailed description of the rationale for reporting will be provided and we will review the diaries after one week of data collection to provide feedback to the employment specialists in order to ensure consistent documentation of activities is occurring. Consistent completion of these diaries, interventions, and employment outcomes improves the reporting on each agency's hard and diligent work and is necessary in order to compare outcomes across agencies and evaluate the outcomes of IMPACT.

Follow-up Interviews Cohort 3

In the spring of 2023, IMPACT mentors from the different agencies will follow up with their youth and ask questions regarding their continued employment and job market interactions. This is to gage the long-term impact of the interventions and skills learned through IMPACT and will be included in the next phase of IMPACT to commence in 2023.