Providing early youth-centered vocational training for youth with developmental disabilities positively increases their soft skills and paid and unpaid employment experiences.

IMPACT 2.0

Report Cohort 2

March 1, 2025

Rachelle Hole & Laura Mudde

Canada

BRITISH COLUMBIA

This program is funded by the Government of Canada and the Province of British Columbia.

THE UNIVERSITY OF BRITISH COLUMBIA

Canadian Institute for Inclusion and Citizenship

British Columbia Employment Network

IMPACT Project Partners:
Aspire Richmond
Burnaby Association for Community Inclusion
Inclusion Chilliwack Society
Community Living Society
Community Living Victoria
Kyndred Community Living Society
Inclusion Langley Society
Inclusion Powell River Society
PosAbilities Association of British Columbia
UNITI

Project Manager:
Iryna Dubeniuk

Project Consultant:
Seema Tripathi

THE UNIVERSITY OF BRITISH COLUMBIA
Canadian Institute for Inclusion and Citizenship

Canadian Institute for Inclusion and Citizenship
University of British Columbia
Phone 604 822 5872
Email: cic.ubc@ubc.ca

Research Team:
Rachelle Hole, PhD
Laura Mudde, PhD

Contact Information
Dr. Rachelle Hole
rachelle.hole@ubc.ca

To cite this report:

Hole, R., & Mudde, L. (February 28, 2025). IMPACT 2.0: Report Cohort 2. *Ministry of Social Development and Poverty Reduction & The BC Employment Network*. 61 pages.

Executive Summary

The first IMPACT project began in 2020 with eight member organizations of the BC Employment Network (BCEN: https://bcenetwork.ca), serving BC's Lower Mainland and Southern Vancouver Island. After the initial three years, the Project Partners and its arms-length evaluator at the University of British Columbia gladly accepted a second three-year contract for IMPACT 2.0. In February of 2024, the Canadian Institute for Inclusion and Citizenship (CIIC) reported on IMPACT 2.0 Cohort 1. The findings of that first cohort of IMPACT 2.0., with its adapted research hypotheses, illustrated how the now ten BCEN member organizations supported 103 youth and 102 parents/carers in the 2023 summer program. Cohort 1 findings demonstrated that interventions geared towards job development and on-the-job training were statistically significant related to an increase in employment outcomes for the 103 youth. In addition, a gender-based analysis showed that, although not statistically significant different, some gender-based discrepancies were visible as youth that identified as male obtained more paid employment experiences than those who identified as female. Overall, IMPACT 2.0 Cohort 1 youth and parental feedback indicated youth benefitted from and enjoyed their participation in IMPACT 2.0 in 2023.

IMPACT 2.0 Cohort 2 continued the research objectives as set out in the Project's renewal. As a reminder of our Project objectives, IMPACT 2.0 addresses the low employment rates and earnings for individuals with intellectual and developmental disabilities (IDD) in BC, Canada (CLBC, 2019; Inclusion Canada, n.d.). The partnership project between the BCEN and the CIIC is funded by the BC Ministry of Social Development and Poverty Reduction and seeks to reduce employment disparities in an effort to improve social inclusion for people with IDD. Specifically, IMPACT 2.0 provides skill building and employment experiences for youth in the process of transitioning out of high school environments. Central to the Project's success are the ten project partners and BCEN members who provide the vocational training and planning specific to the unique needs of transitioning youth with IDD between the ages of 15 – 19, in preparation for future employment.

IMPACT 2.0 investigates what types of, or methods of, vocational training and planning practices foster the most positive and effective employment outcomes. All ten project partners co-designed and delivered youth-centered vocational training and planning during the summer of 2024. The CIIC research team and project leadership continues to operate with approval from the UBC Behavioural Research Ethics Board, with this report providing an assessment and evaluation of the second cohort. We analyzed the de-identified data from 115 youth and 115 parents/carers that were part of IMPACT 2.0

in 2024. All data was collected by the ten project partners' vocational specialists between June and October 2024.

Similar to Cohort 1, five project partners provided the youth in Cohort 2 with a prescribed three-stage approach of vocational training and planning. This three-stage approach follows a sequentially offered pattern of vocational activities: first, discovery and career exploration; second, skill building; and third, job development as the final stage to the summer program. The other five project partners provided the youth with an agency specific or 'free' intervention framework when offering their vocational training and planning. Contrary to the three-stage approach, these five project partners did not follow a sequential pattern in offering the youth vocational activities and training. These different approaches, splitting the cohort in 63 youth following the three-stage and 52 youth participating in the free intervention approach, support the research effort to test whether the type, time, and sequence spent in tailored vocational activities matters for the youth's reported employment experiences and outcomes. The distinction between these two approaches is meant to elucidate which framework would be more effective for vocational training and benefit the youth's experiences and employment outcomes most. In addition, IMPACT 2.0 data analysis assessed potential gender-based discrepancies in vocational training and planning experiences and employment outcomes.

The data presented and analyzed in this report relates to information gathered through project partners' entrance and exit interviews with youth and their parents/carers, youth-based intervention or activity diaries, and separate focus groups with some youth, parents/carers, and vocational specialists. Before the start of the summer program, vocational specialists completed 'entrance' interviews with the youth and their parent(s)/carer(s). These interviews included demographic questions, a self-assessment of level of support need (level of disability), questions about the youth's knowledge of employment, potential previous employment experiences, and the completion of a Meticulon Assessment Survey (MAS, 2020).[1] After the summer program, vocational specialists completed 'exit' interviews with the youth and their parent(s)/carer(s). These interviews repeated questions about the youth's knowledge of employment, new employment experiences, and the MAS. Exit interviews also included questions about the youth's experiences during the vocational training and planning interventions they participated in over the summer. The youth-based intervention or activity diaries allowed vocational specialists to systematically record the youth's activities in an individualized and ongoing report to document what specific vocational training and planning the youth engaged in during the summer, whether they were part of the three-stage or the free

[1] The MAS is an assessment instrument covering 12 domains or "soft skills" as predictors for obtaining and retaining future employment.

intervention approach, as well as their level of participation in activities. Finally, the Project Consultant offered youth, parents/carers, and vocational specialists an opportunity to participate in focus groups to reflect on their experiences during the summer program in November of 2024.

In summary, findings of Cohort 2 of IMPACT 2.0 reveal that higher levels of participation and time spent in tailored interventions increased employment outcomes. Especially interventions geared towards job development were statistically significant related to an increase in employment outcomes for the 115 youth. Youth who adhered to the three-stage approach in vocational activities were more likely to experience an increase in their employment experiences the more time they spent in job development. The youth that followed the free intervention approach were more likely to experience an increase in employment experiences the more time they spent in discovery and job development. Employment outcomes were not found to be different when comparing intervention approaches. A gender-based analysis of the data shows that similar to Cohort 1, youth who identified as male obtained relatively more paid employment experiences than females. Even though females obtained more employment experiences per person, these were more often unpaid work experiences. However, this observed numerical difference did not appear to be statistically significant.

Overall, findings from the exit interviews and the focus groups indicate that youth benefitted from and enjoyed their participation in the IMPACT program. The findings from IMPACT 2.0 Cohort 2 align with the positive findings from IMPACT 2.0 Cohort 1. Exit interviews, intervention diaries, and additional focus group discussions reveal ongoing enthusiasm among the youth and their parents/carers about IMPACT 2.0 and the offered vocational training and planning.

Table of Contents

Introduction

Employment is a key aspiration for many individuals with intellectual and developmental disabilities (IDD) and is a pathway to foster social inclusion (Mogensen et al., 2023). This aspiration requires creating intentional employment opportunities for people with IDD transitioning from education to employment environments. A key predictor for obtaining employment for individuals with IDD is early vocational support, particularly when youth are transitioning out of school environments (Awsumb et al., 2022; Bowman et al., 2022; Cimera et al., 2013; 2014; Mazzotti et al., 2021; Mogensen et al., 2023; Sung et al., 2015).

Specifically, research shows working-age individuals with IDD who were employed upon completion of high school were likely to remain employed and to receive competitive wages (Burgess & Cimera, 2014; Cimera et al., 2014; Sung et al., 2015). Research by Bowman et al. (2022), Mazzotti et al. (2021), and Mogensen et al. (2023) demonstrates that early employment or career and technical education (CTE) led to better employment outcomes for transition-aged youth after high school. Moreover, individuals with previous employment or in active employment were likely to remain employed and to receive competitive wages (Cimera et al., 2014; Mazzotti et al., 2021; Pearson et al., 2020; Sung et al., 2015).

To date, research on early vocational training to support youth in obtaining employment has tended to concentrate on youth-specific 'job tasks' associated with a particular job (e.g., within retail, stocking shelves, or working a cash register), and not necessarily been youth- or person-centered, meaning tailored to the individual's unique strengths and interests. Although a growing number of studies focus on vocational training for effective career planning as an established predictor of employment outcomes (e.g., Cheak-Zamora et al., 2015; Mazzotti et al., 2021; Seaman & Cannella-Malone, 2016; Sung et al., 2015), the majority this research does not address a Canadian context or the importance of a youth or person-centered approach. A notable exception is a recent study by Bowman and colleagues (2022) in Ontario, Canada. They found that "starting early, taking a person-directed approach to planning" (p. 4156) led to improved transitions to employment for youth with disabilities.

Apart from research by Bowman and colleagues (2022), there is a scarcity of research on Canadian community-based vocational training programs focused on youth with IDD transitioning from school to employment environments (see also Khayatzadeh-Mahani et al., 2020). Some available research demonstrates that transition initiatives and planning are "falling short" (Cheak-Zamora et al., 2015; Nord, 2020; Smith et al., 2021; Sung et al., 2015). In the province of British Columbia (BC), approximately one in five

(21.35%) adults with IDD report having had some form of paid employment (personal communication CLBC, Feb. 24, 2024). However, employed individuals with IDD tend to receive lower wages (typically minimum wage) and work fewer hours when compared to individuals without IDD (Almalky, 2020; Carter et al., 2012; Grossi et al., 2020; Khayatzadeh-Mahani et al., 2020; Smith et al., 2021). These statistics are striking given the importance of employment as a means to social inclusion (Almalky, 2020; Mogensen et al., 2023).

IMPACT 1.0 showed that youth-centered vocational training and planning positively impacted employment outcomes. IMPACT 2.0 investigates what types of tailored vocational training and planning practices are most effective in contributing to the youth their knowledge about employment, employment experiences, and future employment outcomes.

The overarching question informing IMPACT 2.0 research is, "*In what ways is intervening early with youth effective in producing positive employment related outcomes?*"

The hypotheses guiding this research question are:

I. Intervening early with youth with IDD using a tailored approach in vocational training and planning that considers each youth's unique strengths and interests will improve future employment outcomes for these youth.

II. Tailored interventions that incorporate activities of discovery and career exploration first, skill building second, and job development third will improve employment outcomes for participating youth.

III. Using a tailored approach that considers each youth's unique strengths and interests will mitigate gender-based discrepancies visible in everyday experiences of youth with IDD.

1. Methods

IMPACT 2.0 uses a concurrent mixed methods formative design to evaluate the vocational training and planning outcomes of the summer program(s) of ten project partners (Creswell & Plano Clark, 2011). Five of the ten project partners (hereafter referred to as Group 1) were instructed to organize their vocational training and planning according to a prescribed intervention design with a focus on three stages: 1) discovery and career exploration interventions, 2) skill building interventions, and 3)

interventions specific to searching for and obtaining a job. The other five project partners did not adhere to this three-stage intervention structure (hereafter referred to as Group 2) and were free to offer tailored interventions in any order or frequency as they saw fit, similar to the youth-centered interventions available during IMPACT 1.0.

1.1 Recruitment and Sampling

Eligibility and inclusion criteria for youth to participate in the 2024 cohort meant that:

1) The youth had to be 16, 17, 18, or 19 years of age as of June 1st, 2024;
2) The youth had to have a diagnosis of IDD;
3) The youth (or their parent/carer if under the age of majority) had to give consent for participation in the project.
4) The youth had to be a unique participant, not having previously participated in IMPACT.

The ten project partners recruited youth using recruitment flyers distributed to local organizations that are well-positioned to assist with recruitment (e.g., Inclusion BC, STADD Navigators, and CLBC). Partners recruited through their local school districts and some partners who provide other services to youth utilized their built-in referral sources. In total, 115 youth actively participated in this second cohort of IMPACT 2.0, completing both entrance and exit interviews in 2024.[2] All youth had a parent/carer complete the accompanying entrance and exit interviews. Sixty-three youth (54.8%) participated in the three-stage intervention approach, while 52 youth (45.2%) participated in the free intervention approach.

1.2 Data Collection

After securing participant consent from the youth or their parent/carer to participate in the program, project partner vocational specialists conducted entrance interviews with the youth and parents/carers (hereafter referred to as T1). These interviews at T1 established the baseline data. During the summer program, vocational specialists kept individual intervention diaries documenting every youth's participation in vocational training and planning activities as well as their level of participation. At the end of the summer, vocational specialists conducted exit interviews with the youth and their parent/carer (hereafter referred to as T2). These interviews at T2 established changes

[2] Of the original 121 youth that were recruited to participate in the summer program in 2024, six participants and their parent(s)/carer(s) were ultimately excluded from the data analysis. Reasons for exclusion in this report were based on participants exiting the project and included family emergency, mental health challenges, hospitalization, and scheduling conflicts. Two of the six excluded participants could simply not be reached to continue their participation or to complete an exit interview.

to the different measures over the course of the summer. In addition, the project manager and consultant compiled work confirmation information from all project partners regarding unpaid and paid employment experiences gained by the youth during their Project participation.

Each youth received a $25 gift card four times following interviews at T1 and T2 and monthly during the summer program. In terms of evaluation, both youth and parents/carers' interviews at T2 included questions regarding their experiences in IMPACT 2.0. Additional voluntary recruitment for focus groups was organized by the Project Consultant and these groups were audio-recorded through a UBC-secure Zoom account, in line with ethics requirements set out by the UBC Ethics Board. The next section details the measures used in the data collection process.

Measures

The evaluation of Cohort 2 is based on the data collected at T1 and T2, recordings in the intervention or activity diaries, and the data from separate focus groups. At T1, youth answered questions about their gender identification, age, and highest completed Grade or level of education as of June 2024. Youth were asked to self-identify their level of support required in seven areas of support/assistance in the Level of Support Subscale and their overall need for support during the school or work day. T1 asked youth to relate their previous unpaid and paid employment experiences as well as their general knowledge about employment and expectations for participation in the summer program. Youth completed the MAS, consisting of twelve predictive domains or "soft skills" for getting and keeping a job. At T2, youth answered questions about potential unpaid and paid employment experiences they gained during the summer program. Similar to T1, youth shared their general knowledge about employment and completed the MAS. T2 also included questions for youth about their program experiences and their overall satisfaction with IMPACT 2.0. Parents/carers completed additional demographic questions about their youth, perceived levels of support needs, and the MAS at T1. At T2, parents/carers were asked to reflect on their youth's experiences during the summer program, to report any observed differences in demeanor, and to complete the MAS. Individual intervention or activity diaries for every youth included information about the vocational training and planning activities the youth participated in and their level of participation. Evaluation of these diaries included the forecasting and analysis of interventions as following either the three-stage or free intervention approach. The dependent employment outcome was assessed based on the multiple variables (interventions) reported for participants, comparing the three-stage approach (Group 1) to the free intervention approach (Group 2) and their relation to employment outcomes. Focus groups with youth, parents/carers, and vocational specialists provided additional qualitative data related to their observations about IMPACT 2.0.

Employment Experiences and Outcomes

Employment experiences and outcomes were measured based on unpaid and paid employment experiences at T1 and T2. Project partners reported on participants' previous employment experiences at T1 and documented experiences gained while participating in IMPACT 2.0 at T2. Reported results (T2 – T1) were analyzed as change in employment experiences. Previous employment experiences collected at T1 included the responses: "No previous experience", "Only unpaid experience", "Only paid experience", or "Both paid and unpaid experience". While the youth participated in IMPACT 2.0, vocational specialists kept track of any employment experiences gained in youth intervention diaries. Any unpaid and paid experiences gained during the summer of 2024 were recorded at T2. Responses included: "No experience gained" (0 points), "Only unpaid experience gained" (1 point), "Only paid experience gained" (2 points), or "Both paid and unpaid experience gained" (3 points).[3]

Knowledge about Employment

At T1 and T2 vocational specialists asked youth to complete seven questions about their knowledge about employment. These seven fill-in-the-blank questions included four possible responses: "Nothing/No/Not" (1 point), "A Little/Some" (2 points), "A Fair Amount (of)" (3 points), to "A Lot (of)" (4 points). Individual mean scores for these seven questions were calculated at T1 and T2 to gauge change over time in the youth's knowledge about employment.[4]

Questions:

1) When it comes to employment, I know about how to start looking for a job.
2) When it comes to employment, I know about the kind of job I want.
3) I have skills or knowledge about the job that I want.
4) When it comes to employment, I know about how to do a job interview.
5) When it comes to employment, I know about what qualities employers are looking for in a good employee.
6) When I think about getting a job, I feel excited about working.
7) When I think about getting a job, I feel confident.

[3] The rationale behind scoring unpaid, paid, or both types of employment in this manner was derived from CLBC (2019) and realities of employment among youth with IDD aged 15-19. The different scores assigned to unpaid (1) and paid (2) employment experiences were based on evidence that unpaid employment experiences among youth with IDD are easier to obtain than paid employment for competitive wages (CLBC, 2019). The highest value for both unpaid and paid employment experiences is based on the idea that more exposure to work environments leads to more knowledge about employment and is a better predictor for obtaining and retaining future employment.

[4] The Cronbach's Alpha for the 7-item Knowledge about Employment scale is .74.

Level of Support Subscale

The Level of Support Subscale was adopted from the Arc's Self-Determination Scale (Wehmeyer, 1995) to enable participating youth to self-assess their level of support needed in seven areas of assistance at T1. The subscale consists of seven questions (see below) along a 3-point scale. Answer options are "None" (1 point), "A Little" (2 points), or "A Lot" (3 points) to indicate support needed in each area of assistance.

Questions:

1) When it comes to self-care how much support/assistance do you need?
2) When it comes to learning how much support/assistance do you need?
3) When it comes to mobility how much support/assistance do you need?
4) When it comes to self-direction how much support/assistance do you need?
5) When it comes to receptive and expressive language how much support/assistance do you need?
6) When it comes to capacity for independent living how much support/assistance do you need?
7) When it comes to economic self-sufficiency how much support/assistance do you need?

This subscale is an additive scale, with total scores divided by the number of items, constraining the 7-item scale score to values between 1 and 3; the higher the score, the greater the self-assessed need for support.[5]

Overall Support Need

Both youth and their parents/carers were asked about the youth's overall support need during the school or work day at T1. This question consists of a 5-point scale ranging from "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). The higher the score, the greater the assessed need for overall support.

Meticulon Assessment Survey (MAS)

Both youth and their parents/carers completed the MAS at T1 and T2. The MAS was originally developed by Meticulon Consulting (2020) as an assessment instrument covering multiple predictive domains or "soft skills" for obtaining and retaining a job. Meticulon Consulting (2020) provides employment support to working age individuals with autism spectrum disorder and the survey is used to support these individuals with identifying their strengths and needs on their employment journey. These twelve

[5] The Cronbach's Alpha for the 7-item Level of Support Subscale is .66.

domains allow for an assessment of the youth's employment capacities as observed by the youth themselves and by their parents/carers. The twelve MAS domains refer to the following "soft skills":

- Time Expectations (3 items).
- Organization (4 items).
- Authority (3 items).
- Teamwork (4 items).
- Perseverance (3 items).
- Responsibility (3 items).
- Motivation Level (3 items).
- Mindfulness (3 items).
- Self-Awareness (3 items).
- Communication Skills (3 items).
- Comprehension (3 items).
- Personal Appearance (3 items).

Each individual item refers to a set of questions that are valued according to a 5-value Likert-scale ranging from "Strongly Disagree" (1 point), "Disagree" (2 points), "Neither Agree nor Disagree" (3 points), "Agree" (4 points), to "Strongly Agree" (5 points). Individual item scores are added up and divided by the number of items in each respective domain, resulting in twelve scores ranging from 1 to 5. A higher score indicates better soft skills.[6]

Intervention Diaries

Each youth had an individual intervention or activity diary. Vocational specialists recorded the various vocational training and planning activities the youth participated in. At the start of IMPACT 2.0's second cohort, the same five project partners as during Cohort 1 followed the intervention guide for the three-stage tailored intervention approach (Group 1). The three sequential stages refer to; 1) the discovery stage, 2) the skill building stage, and 3) the job development stage. The purpose of each of these stages was to incrementally increase the youth's knowledge about their unique skills and opportunities by discovering their preferred career path or employment opportunities, building the required skills and empowerment to pursue that career path, and developing connections and participating in employment experiences aimed at obtaining and retaining employment. The other five project partners (Group 2) provided tailored interventions according to a free intervention approach also observed in Cohort 1 and in IMPACT 1.0. Group 2 did not adhere to the three-stage intervention approach

[6] The Cronbach's Alpha for the 38-item MAS scale is .90.

followed by Group 1. Project partners adhering to the three-stage approach and the free intervention approach recording the time spent for each of their youth in different vocational training and planning exercises. In turn, the time spent in different activities was analyzed together with the youth's gained employment experiences during IMPACT 2.0 to estimate the impact of interventions on employment experiences as predictors for future employment.

Level of Participation

Vocational specialists completed intervention diaries for each youth to assess the level of their participation in vocational activities. This helped measure how involved the youth were during the summer program. The level of participation was scored as "1% - 25% participation" (1 point)"; "26% - 50% participation" (2 points); "51% - 75% participation" (3 points); or "76% - 100% participation" (4 points), presenting a level of participation variable ranging from 1 to 4, with a higher score indicating a greater level of participation.

Evaluation Responses

T1 and T2 contained some questions pertaining to program expectations at T1 and program evaluation at T2. At T1, youth were asked about their goals for participating in the program involving statements with "Yes", "No", or "Unsure" answer options.

Statements:

- I want to get a job.
- I want to know more about getting a job.
- I want to know what kinds of jobs I can do.

At T2, youth were asked about their experiences. Six statements were valued according to a 5-value Likert-scale ranging from "Strongly Disagree" (1 point), "Disagree" (2 points), "Neither Agree nor Disagree" (3 points), "Agree" (4 points), to "Strongly Agree" (5 points). A higher score reflects a higher level of positive experience.

Statements:

- I liked the IMPACT Program.
- I enjoyed the activities during the IMPACT Program.
- I learned different ways about how to get a paid job during the IMPACT Program.
- What I have learned in the IMPACT Program will help me get a paid job in the future.
- The activities I participated in during the IMPACT Program helped me discover what kind of paid job I want to get in the future.

- I was given the right amount of support to participate in the IMPACT Program.

Parents/carers also evaluated the summer program at T2. Feedback questions about their youth's experiences included five 5-value Likert-scale questions ranging from "Strongly Disagree" (1 point), "Disagree" (2 points), "Neither Agree nor Disagree" (3 points), "Agree" (4 points), to "Strongly Agree" (5 points). Higher scores reflect higher positive associations with their youth's participation in the program.

Statements:

- I am overall satisfied with our experience with the IMPACT Program.
- My youth enjoyed learning and experiencing employment related activities.
- My youth learned skills during our time with the program that will help them get a paid job in the future.
- The program addressed potential barriers to employment experiences through training and engagement with job skills.
- The program improved my youth's soft skills (soft skills refer to social and emotional skills, such as confidence and communication).

An additional three questions in "Yes" or "No" open question format allowed parents/carers to specify attained employment experiences and observed changes in their youth's behaviour.

Statements:

- As a parent/guardian/caregiver, I noticed changes in my youth's behaviour, attitude, and actions during the course of the IMPACT program.
- If your youth attained paid employment, this job was well suited to their interests and/or skills.
- If your youth attained unpaid employment, this job was well suited to their interests and/or skills.

Focus Groups

After T2, the Project Consultant sent out an invitation to youth, parents/carers, and vocational specialists to invite people to participate in voluntary focus groups. A semi-structured interview guide supported these focus groups, which were meant to gauge observations about IMPACT 2.0, personal experiences regarding participation in the program, and opinions about the three-stage and free intervention approach offered in IMPACT 2.0. Results summarized later in this report present the themes resulting from the analysis of the focus group data.

1.3 Fidelity of Intervention and Implementation

The methods and measures employed in IMPACT 2.0 require a brief comment about the fidelity of implementation of the intervention. According to Breitenstein et al. (2010), “implementation fidelity is the degree to which an intervention is delivered as intended and is critical to successful translation of evidence-based interventions into practice” (p. 164). This refers to a definition of implementation fidelity as the degree to which a program is delivered as intended.

The ten project partners through the BCEN collaborated with the research team and the partner manager and consultant to ensure that interventions were faithfully administered as intended and accurately registered in the pre- and post-intervention interviews, intervention diaries, and work confirmations document. The fidelity of intervention was supported by mandatory training sessions on research ethics, data management, and data collection procedures for all vocational specialists over the course of five days prior to the start of the summer program.

Previously established relations through IMPACT with eight of the ten project partners and the first cohort of IMPACT 2.0 improved knowledge about the accurate administration and recording of data at T1 and T2. Practical observations and feedback from project partners supported with the collection of data in the intervention diaries. The roles of the Project manager and consultant were of particular importance in ensuring the correct notation of results by all ten agencies. The research team communicated with the project partners, manager, and consultant to accurately report the results for this second cohort of IMPACT 2.0. This included further clarification for consistent reporting in the intervention diaries; improving the overall fidelity of the intervention diaries as an important measure of the type of interventions connected to improved employment outcomes.

1.4 Data Analysis

SPSS data analysis software (IBM SPSS Statistics Data Editor 29) was used to record the interventions and analyze the data. We ran an independent samples t-test to establish whether there is support for Hypothesis II. Youth responses regarding their knowledge about employment at T1 and T2 were compared, using paired samples t-tests to assess statistical significance of differences between means. Similarly, we compared the MAS 12-item scale scores over time using paired samples t-tests for the youth and parents/carers. This comparison allowed us to compare the youth’s perceptions about themselves in these MAS employability domains at T1 and T2 with the parent/carer perspectives about their youth’s soft skills at T1 and T2. We included Pearson’s two-tailed bivariate correlation analyses related to each of the measures

outlined above. We ran further correlation analyses to see what types of vocational activities were correlated with the youth's paid and unpaid employment outcomes. Specifically, change in employment scores (T2-T1), change in MAS scores (T2-T1), change in knowledge about employment (T2-T1), and level of participation were analyzed for statistically significant relations. In particular, this report paid attention to differences in reported results between Group 1 and Group 2, a gender-based analysis, age-based analysis, support-based analysis, and intervention-based analysis as set out in the discussion below (section 3).

2. Results[7]

For this second cohort of IMPACT 2.0, 115 youth participated and completed both T1 and T2 with their vocational specialists.[8]

Gender

With respect to gender identification at T1, 82 of the youth identified as male (71.3%), 31 youth identified as female (27.0%), and two youth (1.8%) identified as transgender, a gender variant or non-binary, or preferred not to answer (Table A1). When comparing groups, Group 1 included 45 youth who identified as male (71.4%) against 37 who identified as male (71.2%) in Group 2. Group 1 contained 16 youth who identified as female (25.4%) and in Group 2, 15 youth (28.8%) identified as female (Table A2).

Age

The average age at T1 for 115 youth was 17 years old (Table A3). When comparing groups, both youth in Group 1 and Group 2 were of similar age (Table A4). An independent samples t-test of age at T1 showed no significant difference between the two groups based on age.

Ethnicity and Minority Status

When asked about ethnicity and minority status, 14 youth (12.2%) identified as Indigenous (First Nation, Metis, Inuit). Ninety-nine youth (86.1%) did not identify as Indigenous and two youth (1.7%) preferred not to answer this question (Table A5). When comparing groups, nine youth in Groups 1 (14.3%) and five youth in Group 2 (9.6%) identified as Indigenous (Table A6). When asked about their visible minority status, 38 youth (33.0%) of the complete sample (n=115) identified as a visible minority

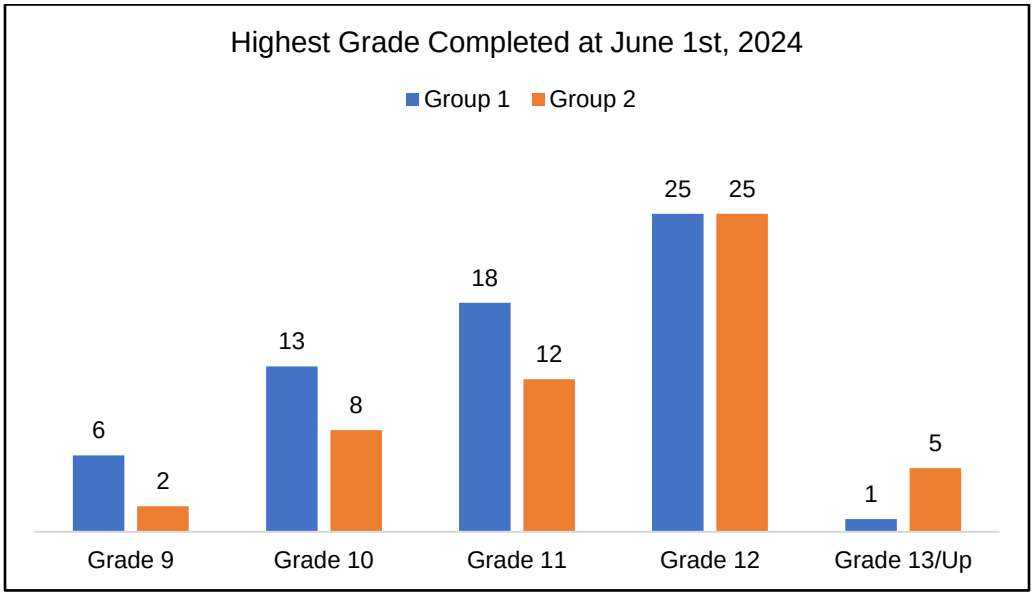
[7] Appendix A provides result tables and are referenced in the text as "Table A#".
[8] Missing values are indicated only when they occur.

(Table A7). Seventy-two youth (62.6%) did not identify as a visible minority, and five youth (4.3%) preferred not to answer this question. Group 1 contained more youth who identified as a visible minority than Group 2 (Table A8). Twenty-seven youth (42.9%) in Group 1 identified as a visible minority against eleven (21.2%) in Group 2. An independent samples t-test showed no statistically significant difference between the two groups based on Indigenous identification. However, an independent samples t-test showed statistically significant difference between the two groups based on identifying as a minority. The 95% confidence interval did not include 0 ($p \leq .01$).

Education

At T1, all youth were asked about their highest level of education completed as of June 1st, 2024. A slim majority of the youth (51.3%) had completed Grade 11 at that time (Table A9). As seen in Figure 1, youth in Group 2 had a higher level of education finished at T1 compared to Group 1 (Table A10). Nevertheless, an independent samples t-test of education level at T1 showed no statistically significant difference between the two groups.

Figure 1: Comparing Groups by Education



2.1 Employment Experiences and Outcomes

Youth were asked questions about their employment experiences at T1 prior to participating in the summer program and any of the vocational activities. Table 1 details the employment experiences for the complete sample of participants (Tables A19 to A26). At T1, 14 youth (12.2%) indicated they had a job at the start of June 2024.

When comparing groups, eight youth (12.7%) in Group 1 were employed at the start of the summer program, against six youth (11.5%) in Group 2. Group 1 started out with a group of youth in which ten youth (15.9%) had no previous employment experiences whereas seventeen youth (27.0%) had both unpaid and paid employment experiences (Table 2). Group 2 started out with seven youth (13.5%) without any experience and sixteen youth (30.8%) with unpaid and paid employment experiences. An independent samples t-test of employment experiences at T1 showed no statistically significant difference between the two groups. In addition, an independent samples t-test of employment experiences at T1 showed no significant difference between participants who identified as male and those who identified as female.

Table 1: Employment Experiences at T1

	N	%
No previous work experience	17	14.8
Only unpaid previous experience	56	48.7
Only paid previous experience	9	7.8
Both unpaid and paid experience	33	28.7
Total	115	100.0

Table 2: Employment Experiences at T1 comparing Groups

	Group 1		Group 2	
	N	%	N	%
No previous experience	10	15.9	7	13.5
Unpaid previous experience	32	50.8	24	46.2
Paid previous experience	4	6.3	5	9.6
Both unpaid and paid experience	17	27.0	16	30.8
Total	63	100.0	52	100.0

Employment Outcomes

Employment outcomes included all paid and unpaid work experiences gained during the summer for youth in each of the ten agencies as recorded at T2. The total reported amount of employment experiences (paid and unpaid) as registered through IMPACT 2.0, or obtained by the youth independently over the course of the summer of 2024 stands at 145. Youth were able to gain more than one additional employment experience. Fourteen youth (12.2%) did not gain any additional employment experience between T1 and T2. Of the complete sample, 67 youth (58.3%) gained one experience, 25 youth (21.7%) reported two work confirmations, eight youth (7.0%) reported three

experiences, and one youth (.9%) reportedly gained four different employment experiences between June and September of 2024. The number of unpaid and paid employment experiences were not found to be different when comparing groups based on the results of an independent samples t-test of the difference between the means. In other words, we have not found a difference in the two intervention approaches in terms of how they affected the number of employment experiences as outcomes.

Fifty youth (43.5%) gained paid employment and 68 youth (59.1%) gained unpaid employment experience (n=115). Table 3 relates the experiences gained since T1 for the complete sample of youth reported at T2 (see also Tables A27 to A38). Table 3 shows that 102 out of 115 youth (88.7%) gained some form of employment experience. In addition, we can compare employment experiences at T1 with experiences gained at T2 by adding up those scores (Table 4).

Table 3: Employment Experiences gained since T1

	N	%
No experience gained	13	11.3
Only unpaid experience gained	52	45.2
Only paid experience gained	34	29.6
Both unpaid and paid experience gained	16	13.9
Total	115	100.0

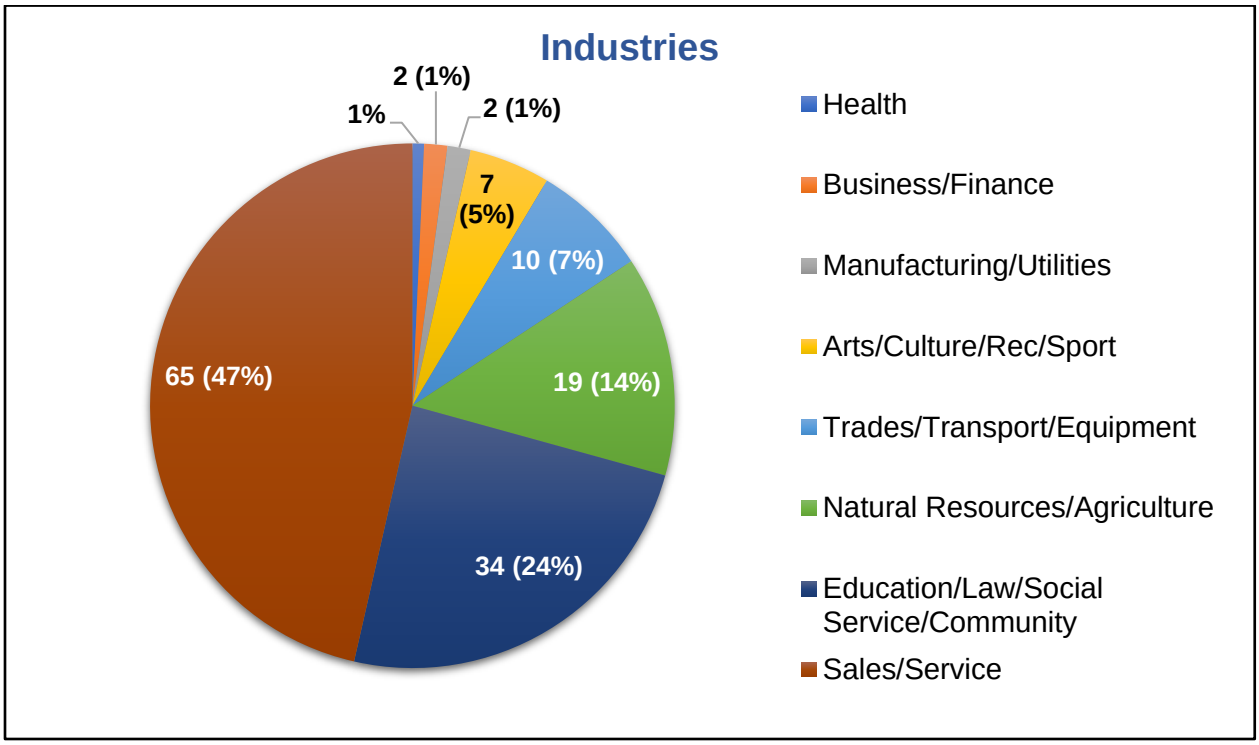
Table 4: Employment Experiences at T2

	N	%
No experience	2	1.7
Only unpaid experience	42	36.5
Only paid experience	8	7.0
Both unpaid and paid experience	63	54.8
Total	115	100.0

As Table 4 shows, only two youth (1.7%) had no employment experience at T2 which was a 13% decrease from the 17 youth (14.8%) who reported no employment experience before the IMPACT 2.0 summer program at T1 (Table 2). When comparing groups, 23 of 63 youth in Group 1 (36.5%) got new paid employment and 41 of 63 (65.1%) reported a new unpaid employment experience since the start of June 2024. In Group 2, 27 youth (51.9%) had a new paid experience and 27 youth (51.9) gained unpaid employment. It is important to remember that youth could both have new unpaid and paid employment experiences at T2.

Figure 2 contains the 145 recorded employment experiences gained between T1 and T2 for the 102 youth that reported one or more employment experiences, specified by industry sector. When specifically looking at paid employment experiences, 63 of the 145 employment experiences (43.4%) were paid. Of these paid employment types, 13 were contract-based and 35 were part time. Forty-four paid employment experiences offered minimum wage, at $17.40 Canadian dollars an hour.

Figure 2: Recorded Employment Experiences by Industry



Those youth that did not obtain unpaid or paid employment experiences during the summer program in 2024 were not proportionally different in terms of their reported gender-identification from the group of participants that did gain employment experiences. One observable statistically significant negative correlation was observed between gained unpaid and paid employment at T2. Gaining unpaid employment decreased the likelihood of also obtaining paid employment and vice versa over the three-month period ($p \leq .001$).

2.2 Knowledge about Employment

Table 4 compares the seven questions related to the youth reported knowledge about employment for the total sample of participants (n=115) at T1 and T2. The scale for each question ranges from “Nothing/No/Not” (1 point), “A Little/Some” (2 points), “A Fair Amount (of)” (3 points), to “A Lot (of)” (4 points). Mean scores at T1 were subtracted

from scores at T2 to reveal the difference in score and whether this was a statistically significant change (Tables A39 & A40). The scores on five of the seven questions increased significantly between T1 and T2.

Table 4: Knowledge about Employment (T2 – T1)

Question:	Mean T2	Mean T1	Difference (T2 – T1)
When it comes to employment, I know [blank] about how to start looking for a job	2.69	2.14	.55*
When it comes to employment, I know [blank] about the kind of job I want	2.85	2.53	.32*
I have [blank] skills or knowledge about the job that I want[1]	2.66	2.36	.30*
When it comes to employment, I know [blank] how to do a job interview	2.67	2.22	.45*
When it comes to employment, I know [blank] about what qualities employers are looking for in an employee[1]	2.84	2.38	.46*
When I think about getting a job, I feel [blank] excited about working	2.97	2.83	.14
When I think about getting a job, I feel [blank] confident	2.83	2.70	.13

[1] 1 missing; * Statistically significant at p ≤ .001.

When comparing groups, differences in mean scores at T1 and T2 for Group 1 revealed that six out of seven questions related to knowledge about employment were statistically significant, demonstrating an increase (3 at p ≤ .001; 2 at p ≤ .01; 1 at p ≤ .05). For the youth in Group 2, only four out of seven questions were showed an increase and were statistically significant (1 at p ≤ .01; 3 at p ≤ .05). However, these seven aspects of knowledge about employment were not found to be different when comparing groups based on the results of an independent samples t-tests of the differences between the means. In other words, we did not detect a difference in the two intervention approaches in terms of how they affected the knowledge about employment.

2.3 Level of Support Subscale

Youth were asked to self-determine their level of support needed in seven areas of assistance.

For the complete sample (n=115), the 7-item Level of Support Subscale had a mean of 1.96 with a standard deviation (SD) of .39 (Table A13). When comparing groups, the 7-item Level of Support Subscale has a mean of 1.96 (n=63; SD= .44) for youth in Group

1 and a mean of 1.96 (n=52; SD= .31) for youth in Group 2 (Table A14). An independent samples t-test of the Level of Support Subscale at T1 showed no statistically significant difference between groups.

2.4 Overall Support Need

The Overall Support Need is a 5-value variable and was completed by the youth themselves and by their parents/carers at T1. The youth's scale had a mean of 2.78 (n=115; SD= .90). When comparing groups, the scale has a mean of 2.78 (n=63; SD= .85) for youth in Group 1 and a mean of 2.79 (n=52; SD= .96) for youth in Group 2 (Tables A15 & A16). An independent samples t-test of the Overall Support Need at T1 showed no statistically significant difference between groups.

The Overall Support Need as observed by the parents/carers regarding their youth has a mean of 3.02 (n=115; SD= .82). When comparing groups, the Overall Support Need for the parents/carers of youth in Group 1 had a mean of 2.98 (n=63; SD= .75) and a mean of 3.06 (n=52; SD= .90) for those in Group 2 (Tables A17 & A18). An independent samples t-test of the Overall Support Need as observed by parents/carers at T1 showed no statistically significant difference between groups.

2.5 Meticulon Assessment Survey (MAS)

Both youth and their parents/carers completed the MAS at T1 and T2. The twelve domains as predictors of future employment or 'soft skills' is a 38-item scale. At T1, the 38-item scale for the youth had a mean score of 3.86 (n=114; SD= .39) and for the parents/carers this presented a mean score of 3.53 (n=115; SD .57). At T2, the mean score for the youth was 3.94 (n=114; SD .39) and for the parents/carers this was a mean score of 3.72 (n=112; SD= .47). The mean difference (T2 – T1) of the total 38-item scale for the youth (n=113) was statistically significant ($p \leq .05$) and for the parents/carers (n=112) the difference in mean score was not a statistically significant change. Independent samples t-tests of the 38-item MAS score at T1 and T2 for youth and parents/carers showed no statistically significant differences between groups.

Table 5 compares the domain-based MAS results for the total sample of participants at T1 and T2 (n=115). Mean scores at T1 were subtracted from scores at T2 to reveal the difference in scores and whether this was a statistically significant change for each of the 12 domains (Tables A41 & A42). The domains of perseverance, mindfulness, and self-awareness revealed a statistically significant increase. When comparing groups, the statistically significant difference between mean scores (T2 – T1) for youth in Group 1 only showed in the domain of self-awareness ($p \leq .001$). In Group 2, only the domain of mindfulness showed a statistically significant difference between mean scores ($p \leq .05$).

Independent samples t-tests of the twelve domains and the mean difference (T2 – T1) for the youth showed a statistically significant difference between Group 1 and Group 2 in the domains of motivation level and self-awareness.

Table 5: Paired Samples t-Test Youth MAS Mean Scores at T2 – T1

Domains	Mean T2	Mean T1	Difference (T2 – T1)
Time Expectations	3.79	3.71	.08
Organization	3.87	3.87	.0
Authority[1]	3.88	3.82	.06
Teamwork[1]	3.98	3.90	.08
Perseverance	3.74	3.59	.15*
Responsibility	3.94	3.83	.11
Motivation Level	4.06	4.07	-.01
Mindfulness	4.30	4.15	.15**
Self-Awareness	3.83	3.63	.20**
Communication Skills	3.75	3.70	.05
Comprehension	4.05	3.96	.09
Personal Appearance	4.09	3.99	.10

[1] 1 missing; * Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01.

For the parents/carers, difference in the mean scores (T2 – T1) proved statistically significant for all independent twelve domains (Table 6). When comparing groups, the statistically significant difference between mean scores (T2 – T1) for parents/carers with youth in Group 1 showed in eleven out of twelve domains. (p ≤ .001). In Group 2, none of the domains showed a statistically significant difference between mean scores. Independent samples t-tests of the twelve domains and the mean difference (T2 – T1) for the parents/carers showed a statistically significant difference between Group 1 and Group 2 in the domains of self-awareness and comprehension. See also the section on measures in this report for the specific details about the MAS domains and the scores (Tables A43 & A44).

Table 6: Paired Samples t-Test Parents/carers MAS Mean Scores at T2 – T1

Domains	Mean T2	Mean T1	Difference (T2 – T1)
Time Expectations[2]	3.74	3.53	.21**
Organization[1]	3.65	3.43	.22**
Authority[1]	3.58	3.40	.18*
Teamwork[2]	3.78	3.57	.21***
Perseverance[1]	3.46	3.23	.23**
Responsibility[1]	3.75	3.54	.21**
Motivation Level[1]	3.89	3.70	.19**
Mindfulness[1]	4.37	4.26	.11*
Self-Awareness[1]	3.66	3.37	.29***
Communication Skills[1]	3.43	3.10	.33***
Comprehension[1]	3.61	3.48	.13*
Personal Appearance[1]	3.75	3.63	.12*

[1] 1 missing; [2] 2 missing * Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

2.6 Intervention Diaries

Participant intervention or activity diaries as kept and regularly updated by vocational specialists kept track of the type of interventions that the youth participated in and the total duration spent in those activities. For the 115 youth, the minimum amount of time spent in activities designed by project partners was 100 minutes and the maximum amount of time was 6620 minutes (approx. 110 hours), with a mean of 2284 minutes (38 hours). One reason for some youth only spending limited time in activities was their ability to attain employment right at the start of the summer.

Three-stage approach

The three-stage approach of vocational training included 1) discovery and career exploration activities, 2) skill building interventions, and 3) job development or on-the-job coaching and training (Tables A47 & A48). The five project partners that formed the three-stage intervention group (Group 1) organized activities according to these three areas of focus in sequence. Vocational specialists and the youth (n=63) spent time in each area of focus.

When comparing groups based on descriptive data, youth in Group 2 spent an average of 2700 minutes in various activities against 1940 minutes on average for youth in Group 1. Table 7 displays the amount and time spent in minutes in the three main types of activities, whether they were in-person activities, and whether the activities were taking place in the community.

Table 7: Descriptive Data on Activities comparing Groups

	Number of discovery	Total time in discovery activities	Number of skill building	Total time in skill building activities	Number of job development	Total time in job development	Total time spent in-person	Total time spent in community
Group 1 (n=63)	5	432	5	646	6	758	1903	904
Group 2 (n=52)	2	255	8	1121	8	1223	2459	1399

Table 7 shows that youth in Group 1 spent more time in discovery activities with an average of five activities in this stage of vocational training and planning at about 1.5 hours spent per activity. By comparison, the 52 youth in the free intervention approach (Group 2) spent more activities and time on skill building activities and job development activities than Group 1. In addition, Group 2 spent more time in-person and in the community.

2.7 Level of Participation

Apart from tracking various the activities the youth took part in; vocational specialists also tracked the level of participation for each of the youth in these activities. Of the complete sample of youth (n=115), 84 youth (73.0%) were recorded at 75 – 100% or full participation. Table 8 relates the level of participation comparing Group 1 to Group 2 (Tables A45 & A46). Although there might be some differences observed in Table 8 between Groups 1 and 2, an independent samples t-test of the level of participation and showed no statistically significant difference between groups. Both groups had two youth in the 0%-24% participation level. Details from their intervention diaries specified two of these youth did not feel like they were a good fit for the IMPACT 2.0 program, while two other youth were hard to reach by vocational specialists and therefore showed less active participation in the summer program.

Table 8: Level of Participation by Group

	Group 1		Group 2	
	N	%	N	%
0%-24%	2	3.2	2	3.8
25%-49%	6	9.5	4	7.7
50%-74%	13	20.6	4	7.7
75%-100%	42	66.7	42	80.8
Total	63	100.0	52	100.0

2.8 Evaluation Responses

At the start of the summer program (T1), vocational specialists asked the youth about their expectations. Ninety-nine youth (86.1%) indicated they wanted to get a job, while twelve youth (10.4%) were unsure. To the statement 'I want to know more about getting a job', 94 youth (81.7%) said 'Yes'. One-hundred youth (87%) affirmed that they wanted to know what kinds of jobs they could do at T1. When comparing groups, youth in Group 1 and 2 displayed the same level of expectations going into IMPACT 2.0.

At the time of exit from the summer program at T2, youth and their parents/carers were asked to reflect on their experiences and the IMPACT 2.0 project. Youth feedback was positive overall (Tables A49 to A51). Of the complete sample of youth (n=115), 99 youth (86.1%) agreed or strongly agreed that they liked the program. Ninety-two youth (80.0%) agreed or strongly agreed that they enjoyed the activities as they participated in the IMPACT Program. Specific to employment outcomes and expectations, 97 youth (84.3%) agreed or strongly agreed with the statement that what they learned over the summer will help them get a paid job in the future.

At T2, parents/carers reflected positively when asked about their youth's experiences (Tables A52 to A54). For the complete sample (n=115), 100 parents/carers (87.0%) agreed or strongly agreed with the statement that, overall, they were satisfied with the program. Eighty-nine parents/carers (77.7%) agreed or strongly agreed the program addressed barriers to employment that will help youth with getting a paid job in the future, and 91 parents/carers (78.9%) agreed or strongly agreed the program improved their youth's soft skills in connection to employment.

2.9 Focus Groups

IMPACT 2.0 saw the introduction of focus groups to further engage with youth, parents/carers, and vocational specialists about their experiences and observations of the program. In November of 2024, eight youth, twelve parents/carers, and ten vocational specialists participated in their own separate focus groups.

Youth

During the semi-structured focus group, youth shared details about their experiences, which for the sake of this report and in line with ethical practice have been de-identified and summarized thematically here. A thematic summary of the focus group with youth brought forward six themes: **1)** Positive experience, **2)** Job learning, **3)** Skills development, **4)** Challenges, **5)** Personal growth, and **6)** Program improvement.

1) Positive experiences:
   - Youth agreed that their favourite aspects of the Project related to hands-on activities and experiences (e.g., workshops, job clubs, field trips).
   - These employment skills workshops, community outings, and simulations were seen as positive because apart from learning new skills, they allowed youth to connect with others and make new friends.

2) Job learning:
   - Youth mentioned that they enjoyed job placements at local businesses (e.g., Nester's Market, Farmers Market).
   - On-the-job-learning and first job experiences were opportunities to gain life skills and to learn how to work with product as well as customers.
   - As a result, some youth felt more confident to enter the workforce.

3) Skills development:
   - Youth found skills like food safety, communication, and transit navigation essential.
   - Some youth connected these skills to their gained confidence and personal growth in their ability to navigate work environments.

4) Challenges:
   - Youth shared that they encountered challenges while learning new skills as well, such as interacting with impatient customers.
   - Another challenge noted was staying engaged during longer lectures.

5) Personal growth:
   - Several youth commented that they had improved their social skills and communication abilities, feeling more comfortable meeting new people in different social settings.
   - A few youth mentioned they overcame initial hesitation or shyness.

6) Program improvement:
   - Youth suggested that the program could be extended to allow more time to find a job.
   - One youth recommended incorporating more hands-on activities during lectures.
   - Youth want to recommend the program to younger friends who might benefit from the skills and potential job experiences.

Parents/carers

The parents/carers participating in their focus group identified similar themes when reflecting on the Project and their youth's experiences. They simultaneously identified aspects specific to their experiences as parents/carers of youth with IDD. The findings of their focus group highlight the same six themes regarding their youth's participation:

1) Positive experiences:
   - Parents/carers noted that their youth enjoyed the hands-on activities, workshops, and field trips, highlighting employment skills workshops, community outings, and simulations.
   - Most parents/carers acknowledged the 'hidden curriculum' associated with their youth's participation and the social aspects of the program, allowing youth to make new friends and gain life skills.

2) Job learning:
   - Parents/carers observed enthusiasm from their youth about job placements.
   - The real-world job experiences, including job-specific tasks were seen as valuable preparation for the workforce.
   - Some parents/carers noted that their youth gained a sense of confidence in relation to readiness for future employment.

3) Skills development:
   - Parents/carers saw their youth developing a wide range of practical and job-specific skills (e.g., stocking shelves, working with customers).
   - Skills development was linked to the youth's increased confidence in their job abilities and understanding how to navigate work environments, while interacting with others.

4) Challenges:
   - Parents/carers echoed challenges their youth might have had with some job-related tasks or dealing with difficult customer interactions.
   - Some parents/carers suggested the need for more interactive activities to keep their youth engaged.
   - There were concerns about youth's long-term prospects, finding jobs that fit not only abilities and interests but also acknowledge and accept limitations (e.g., accommodate health needs, job stability).

5) Personal growth:
   - Parents/carers emphasized the development of their youth's social skills and communication abilities.

- Youth overcame their initial hesitancy or shyness, becoming more open to new experiences.

6) Program improvement:
   - Some parents/carers suggested extending the program, allowing youth more time to settle into jobs.
   - A few parents/carers recommended more hands-on activities.
   - Parents/carers expressed a willingness to recommend the program to other families.
   - Some parents/carers highlighted the need to improve program communication and additional resources.
   - Parents/carers suggested broadening program eligibility for individuals who are self-diagnosed to offer the program to youth who, despite not being formally diagnosed, would benefit greatly from participation.
   - In connection to IMPACT 2.0, parents/carers pondered it would be great for larger companies in the public sector to make a stronger commitment to hiring people with disabilities and for employers to be encouraged to offer job opportunities for neurodiverse individuals.

Parents/carers also spoke to aspects specific to their experiences as parents/carers of youth with IDD and the IMPACT 2.0 programming that might not have been noticed by youth. They expressed a need for clearer communication and who to contact for specific questions (e.g., payroll, job responsibilities, scheduling). While youth were taught how to look for jobs, parents/carers expressed a desire to be included in knowing how to navigate the job-search process and how to deal with challenges at work. In part, the focus group discussion reflected the tension parents/carers might experience balancing their youth's independence and offering support. Some expressed concerns about autonomy when dealing with additional challenges associated with chronic health conditions and developmental disabilities. Youth gained important independence but still needed more guidance to navigate job responsibilities and career planning. A common theme was the need for ongoing support beyond IMPACT 2.0, and parents/carers expressed a desire for more resources.

Vocational specialists

In an effort to gather more information and understanding about the potential negative and positive aspects of the three-stage approach for offering vocational activities, the Project Consultant conducted a focus group with vocational specialists. Our findings presented here relate to the observations from ten vocational specialists that were

working in those agencies that followed the three-stage approach in offering vocational training and activities.[9]

The focus group was convened to capture the perspectives of vocational specialists and their observations of the **1)** advantages, **2)** disadvantages, and **3)** potential for improvements to the three-stage intervention approach. Important to note that the perspectives of vocational specialists engage with themes specific to their own job satisfaction and the requirements of offering vocational training.

1) Advantages or positive aspects to the three-stage approach:

Vocational specialists agreed that the three-stage approach provided benefits. The structured framework was seen to enhance consistency and helped in the organization and planning at the agencies. In part, this was due to the clear timelines and approximate hours youth were supposed to spend in each of the three stages. This assisted both staff and youth in maintaining focus and helped move the process of vocational training along in a systematic way. Some vocational specialists found that outside of these timelines and structure, the three-stage approach still allowed for creativity and youth-centered training. One vocational specialist shared that the defined structure and parameters helped them deal with staff transitions and turnover, ensuring continuity. This observation was echoed by others as the three-stage approach required accountability and transparency in reporting on youth participation and the organization and planning of vocational training and activities. As such, both new staff and youth were reportedly benefitting from the structured planning inherent to the three-stage approach. Focus group participants were appreciative of training events offered at two of the agencies.

When addressing project outcomes, several focus group participants found that their experience with the three-stage approach saw a faster job placement and increased level of youth satisfaction with their participation in the project. Two specialists talked about the difference between the previous 'free' intervention approach and the newer three-stage approach. The latter was identified to have enabled quicker job placements, befitting the youth's preferred roles, as compared to previous years. This then also led to higher levels of youth engagement and expressed job satisfaction. For some agencies in the three-stage approach, this reduced the number of youths dropping out of the program that was observed in earlier cohorts without the three-stage approach. By extension, this resulted in positive feedback from youth, their families, and other people in their support networks. As one vocational specialist remarked, the second

[9] Other topics raised during the focus group that did not specifically relate to the three-stage approach in vocational training and planning were left out of this summary.

cohort offering the three-stage approach made it an easier process as well, improving project outcomes.

2) Disadvantages or negative aspects of the three-stage approach:

Most specialists saw the three-stage approach as beneficial to their work experience and in relation to working with the youth. Nevertheless, some challenges they identified in the three-stage approach were that it reduced the flexibility to tailor the project to individual youth needs that might be required for some youth attending the program. Although the majority might be able to adhere to the timed structure of the three-stage approach, some youth required additional time for skill-building or discovery. In addition, staff sometimes felt restricted in their creativity to tailor the interventions to specific youth needs. These observations led the focus group to discussing the at times overemphasis on measurable outcomes that might overshadow the rich developmental journey of youth.

Linked to observations from the youth focus group and the parent/carer focus group, vocational specialists also expressed that the shorter summer timelines limited the projects potential. A couple specialists observed that a 12-week compressed program was insufficient for some youth, and in particular for those youth with higher support needs or youth without any prior knowledge or exposure to employment and career development. The timing of the 12 weeks during the summer also meant some attendance was inconsistent as youth joined their families for vacations and other commitments.

3) Suggested improvements to the three-stage approach:

Vocational specialists that participated in the focus group also shared observations about the three-stage approach that could be improved. These suggestions did not necessarily imply negative aspects of the three-stage approach. At times, suggestions included observed potential for further innovation and refinement this approach could offer for agencies and staff. As set out in the positive aspects, the increased accountability and transparency offered in the three-stage approach and the required reporting on time spent in each of the three stages for each youth could be further enhanced in terms of intervention tracking and time management. Focus group participants discussed the potential for an automated system to track time spent on activities. This could also potentially include an automatic tallying system that alerts the vocational specialist and the agency when a youth has completed their approximate maximum of allowable hours in the discovery or skill building stages.

This potential for improved or automation in reporting linked to a discussion of the hours allotted for each of the stages. The first stage of discovery according to some, should be extended when youth require more exploration before moving on to the skill-building stage. This second stage was felt to be short too in terms of allowing youth to fully develop new skills. The final third stage was found to be good as is, since this last stage was not restricted in hours. In general, the first two stages and their suitability were found to depend on the youth's previous exposure and knowledge about employment and what they would want out of a career. Those youth with previous experiences related to employment were better able to navigate the prescribed stages according to the hour allotment.

3. Discussion

As set out at the start of this report, many youths with IDD do not receive employment-related transition planning and supports when close to finishing high school. IMPACT 2.0 continues to address this unmet need by providing vocational training and planning supports for youth. IMPACT 2.0 Cohort 2 adds more insights and data to inform our understanding of effective vocational training and planning programs youth with IDD transitioning out of high school.

3.1 Objectives

The general objective of this research is to determine effective ways to improve employment experiences and outcomes for youth with IDD, transitioning from school to employment. The main objective guiding the research is based on the question, "In what ways is intervening early with youth effective in producing positive employment related outcomes?" Cohort 2 results demonstrated that youth participation in the summer program led to improved employment outcomes. Similar to Cohort 1, interventions considered each youth's unique strengths and interests. The following sections will address specific analyses based on the recorded results and engage with the three hypotheses set out in connection to the research question:

I. Intervening early with youth with IDD using a tailored approach in vocational training and planning that considers each youth's unique strengths and interests will improve future employment outcomes for these youth.

II. Tailored interventions that incorporate activities of discovery and career exploration first, skill building second, and job development third will improve employment outcomes for participating youth.

III. Using a tailored approach that considers each youth's unique strengths and interests will mitigate gender-based discrepancies visible in everyday experiences of youth with IDD.

3.2 Complete Sample Analysis

As established in the results section, youth were predominantly male (71.3%), did not identify as Indigenous (86.1%) or as part of a visible minority (62.6%), were on average 17 years of age, and had completed at least Grade 11 at June 1st, 2024. Analyses of the overall level of support need and the 7-item Level of Support Subscale, while in a positive and significant correlation to each another ($p \leq .001$), did not generate statistically significant relations to employment outcomes (results not shown).

Table 9 presents the results for a bivariate correlation analysis for the complete sample (n=115). Employment Outcomes T2 reflect the total employment experiences of the youth at T2 (adding gained employment to previous employment as a score). Employment outcomes and experiences at T1 and T2 show a positive relation ($p \leq .001$), that is, the more employment experiences youth had, the more they gained, and the higher their Employment Outcome at T2 was. Unpaid and paid experiences gained during the approximate four months of the IMPACT Project was in a strong positive and statistically significant relationship with the total time youth spent in activities ($p \leq .001$) and the level of participation in those activities ($p \leq .05$). Specifically, both unpaid and paid experiences gained during the approximately four months of the IMPACT Project were strongly and statistically significantly related to: 1) the total time youth spent in job development activities, 2) the total time youth spent doing activities in-person, and 3) the total time youth spent in activities taking place in the community ($p \leq .001$). Overall, Overall, the employment outcomes (T1 + T2) score showed a positive and statistically significant relationship with employment experiences at T1, T2, time spent in activities, the youth's level of participation, the youth's time spent in job development, and the youth's time spent in-person.

Table 9: Pearson Bivariate Correlation for Employment Experiences and Outcomes

	Employment Experiences T2	Employment Outcomes T2
Employment Experiences T1	.565***	.786***
Employment Experiences T2		.789***

* Statistically significant at $p \leq .05$; ** Statistically significant at $p \leq .01$; *** Statistically significant at $p \leq .001$.

The level of participation in vocational activities showed a significant positive relationship with total employment outcomes, time spent in job development, and time spent in in-person activities ($p \leq .05$). Although time spent in discovery or career exploration and time spent in skill building interventions are in a statistically significant relation with each other, neither of these intervention components is significantly related to employment outcomes.

Changes in the complete sample's mean scores in the 7-item knowledge about employment (n=115) was not significantly correlated to employment experiences since T1 or the employment outcomes (results not shown). The change in mean scores in the MAS domains of responsibility and comprehension for the youth showed a positive and significant correlation with unpaid and paid experiences gained since T1 ($p \leq .05$).

3.3 Comparing Groups

When comparing demographic data for youth in Group 1 and Group 2, independent samples t-tests revealed that observed differences were not large enough to be statistically significant in this particular sample. The only exception was found in the reported minority identification, where an independent samples t-test showed statistically significant difference between the two groups based on identifying as a minority. The 95% confidence interval did not include 0 ($p \leq .01$). When assessing employment experiences and outcomes for the complete sample (n=115), an independent samples t-test showed no statistically significant differences between those who identified as part of a visible minority (n=38) or not (n=72). So, although Group 1 and 2 might be different in terms of identified minority status, this was not significant for their employment experiences and outcomes. Examining the employment outcomes (T2 – T1) in relation to the types of activities or interventions recorded in the intervention diaries, bivariate correlation analysis revealed that these outcomes were more frequently positively and statistically significantly related for the youth in Group 2 (Table 10).

Table 10: Pearson Bivariate Correlation for Employment Outcomes and Interventions comparing Groups

	Minutes in discovery/ exploration		Minutes in skill building		Minutes in job development		Minutes in-person		Minutes in community	
Group	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**	**1**	**2**
Employment Outcomes T2 - T1	.223	.449***	-.028	.231	.346**	.394**	.287*	.660***	.261*	374**

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

3.4 Gender-based Analysis[10]

For the complete sample of 115 youth, this second cohort of IMPACT 2.0 contained two dominant gender groups; male (n=82) and female (n=31). Two youth identified as either a gender variant/non-binary or preferred not to answer. For the purpose of analysis, the non-dominant group of two youth are not included, as their number is too small for statistical analysis. The research team and vocational specialists recognize the gender-based discrepancies visible in everyday experiences of youth with IDD, especially for youth that are part of the LGBTQIA2S+ demographic. In turn, required anonymization of data limits the specific analysis of a small group of youth that does not identify as male or female. This report will therefore centre a gender-based analysis of data available for those that identified as either male or female.

The average age for males in this cohort was 17.3 against 17.0 for females. Ten males identified as Indigenous (12.2%) and four females identified as Indigenous (12.9%). Twenty-six males (31.7%) identified as a visible minority and twelve females (38.7%) identified as a visible minority. Fourteen females (45.2%) and 42 males (51.2%) had completed grade 12 or higher. In terms of support, both groups self-identified a medium level of support needs during the day. The 7-item Level of Support Subscale mean for both groups were similar as well. Independent samples t-tests for age, overall support needed, visible minority status, and level of education comparing male and female groups at T1 were not statistically significantly different.

Employment experiences at T1 for those identifying as male or female are reflected in Table 11. At T1, nine males (11.0%) and four females (12.9%) indicated having a job at the start of the summer program. Table 11 displays employment experiences prior to

[10] For the purpose of this second cohort of IMPACT 2.0, groups would become too small if apart from gender also divided in prescribed and non-prescribed intervention groups.

participating in Cohort 2. Females had more previous experience at the start of their summer program than youth in the male group, but less paid experience. Independent samples t-tests for employment experiences at T1 and T2 as well as employment outcomes (T2 – T1) comparing male and female groups at T1 were not statistically significantly different.

Table 11: Employment Experiences T1 comparing Males and Females

	Males		Females	
	N	%	N	%
No previous experience	13	15.9	4	12.9
Unpaid experience	38	46.3	17	54.8
Paid experience	8	9.8	1	3.2
Both unpaid and paid experience	23	28.0	9	29.0
Total	82	100.0	31	100.0

At T2, a higher percentage of female participants had gained unpaid or paid employment experiences than male participants. Table 12 summarizes the gained employment experiences for both groups. Females gained more unpaid experiences than paid experiences both within their group and compared to the male group.

Table 12: Employment Outcomes (T2 – T1) comparing Males and Females

	Males		Females	
	N	%	N	%
No experience gained	10	12.2	2	6.5
Gained unpaid experience	34	41.5	17	54.8
Gained paid experience	26	31.7	8	25.8
Gained unpaid and paid experience	12	14.6	4	12.9
Total	82	100.0	31	100.0

In terms of the youth's knowledge about employment and change over time in the mean scores, Table 13 relates the change over time for those in the male and female groups. Statistically significant increases were observed in the male and female groups when asked about their knowledge regarding how to look for a job, their knowledge about employer expectations, and their knowledge about job interviews.

Table 13: Knowledge about Employment (T2 – T1) comparing Males and Females

	Males (n=82)		Difference	Females (n=31)		Difference
	Mean T2	Mean T1	(T2 – T1)	Mean T2	Mean T1	(T2 – T1)
Question 1	2.71	2.18	.53***	2.55	1.97	.58***
Question 2	2.84	2.56	.28*	2.81	2.35	.46*
Question 3	2.63	2.37	.26*	2.65	2.29	.36*
Question 4	2.55	2.20	.35**	2.90	2.19	.71***
Question 5	2.85	2.35	.50***	2.74	2.42	.32*
Question 6	2.98	2.79	.19	2.90	2.87	.03
Question 7	2.83	2.70	.13	2.77	2.65	.12

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

Results of the change in the twelve MAS domains (T2 – T1) reflecting soft skills as predictors of future employment resulted in statistically significant change in mean scores for the male group. The domains of responsibility, self-awareness, mindfulness, and the complete 38-item scale showed a statistically significant increase. For the female group, only the domain for appearance showed a statistically significant increase. Changes in mean scores for MAS domains and knowledge about employment were not significantly correlated to employment outcomes (T2 – T1) for either group.

4. Assessment

In relation to Hypothesis I, the findings from the second cohort for IMPACT 2.0 revealed that higher levels of participation and time spent in tailored interventions increased employment outcomes. Especially interventions geared towards job development showed a statistically significant positive increase in employment outcomes for the 115 youth. In relation to Hypothesis II, youth in Group 1, who adhered to the three-stage approach in vocational activities, were more likely to experience an increase in their employment experiences the more time they spent in job development. The youth that participated in Group 2, following the free intervention approach, were more likely to experience an increase in employment experiences the more time they spent in discovery and job development. Employment outcomes were not found to be different when comparing Groups 1 and 2 based on the results of an independent samples t-test of the difference between the means. In other words, we have not detected a difference

in the two intervention approaches in terms of how they affect employment outcomes. In relation to Hypothesis III and similar to Cohort 1, a gender-based analysis shows that male youth obtained relatively more paid employment experiences than females. Even though females obtained more employment experiences per person, these were more often unpaid work experiences. However, this observed numerical difference did not appear to be statistically significant which might be due to smaller sample sizes. Overall, both youth and parent feedback indicate youth appeared to benefit from and enjoy their participation in the IMPACT program. The positive findings based on data from Cohort 1 were also visible in results from IMPACT 2.0 Cohort 2 data. The interviews conducted with youth in combination with the recorded intervention activities through the developmental diaries reveal overall enthusiasm among the youth and their parents/carers to engage in vocational training and planning.

4.1 Limitations

The main limitations of the second cohort of IMPACT 2.0 on its own are related to the relatively small sample size. Smaller sample sizes have less power to detect a true effect because the study may so far not be able to identify real differences or effects if they exist. It also reduces the representativeness of the data as small samples are less likely to accurately reflect characteristics of the populations from which the samples are drawn. Findings based on these smaller sample sizes are not generalizable to the larger population. The results reported for Cohort 1 in 2024 and Cohort 2 in 2025 appear to be less specific to the particular sample since we see similar results from Cohort 1 repeated, but the cohort size (n=115) make more extensive subgroup analyses specific to this sample inaccessible at this time. These subgroup analyses of a limited number of youths further reduce the sample size in each category, complicating the analysis and interpretation of subgroup differences. These limitations associated with the smaller sample sizes in the individual cohorts will be addressed as more youth complete the summer employment program and vocational training through IMPACT 2.0 in 2025 and will be reflective in our summative reporting in 2026.

4.2 Moving Forward

Additional cohorts will mean more youth will be able to participate in the tailored interventions at the ten collaborating agencies. This will increase the sample size and allow for more in-depth analyses to gauge whether prescribed sequence of interventions has a positive and significant relation with employment outcomes. A larger sample size could allow for the research team to run both linear regression and logistic regression analyses to estimate the strength of impact of multiple interventions on employment outcomes and see if we can create a predictive model to forecast employment outcomes based on specific types of interventions.

References

Almalky, H.A. (2020). Employment outcomes for individuals with intellectual and developmental disabilities: A literature review. *Children and Youth Services Review, 109*.

Awsumb, J., Shutz, M., Carter, E., Schwartzman, B., Burgess, L., & Taylor, J. (2022). Pursuing paid employment for youth with severe disabilities: Multiple perspectives on pressing challenges. *Research and Practice for Persons with Severe Disabilities, 47*(1), 22 – 39.

Bowman, L. R., McDougall, C., D'Alessandro, D., Campbell, J., & Curran, C. J. (2022). The creation and implementation of an employment participation pathway model for youth with disabilities. *Disability and Rehabilitation*, *45*(24), 4156-4164. DOI: 10.1080/09638288.2022.2140846

Breitenstein, S., M., Gross, D., Garvey, C., Hill, C., Fogg, L., & Resnick, D. (2010). Implementation fidelity in community-based interventions. *Research in Nursing and Health*, 33(2), 164 – 173.

Burgess, S., & Cimera, R. (2014). Employment Outcomes of Transition-Aged Adults with Autism Spectrum Disorders: A State of the States Report. *American Journal on Intellectual & Developmental Disabilities*, *119*(1), 64 – 83.

Carter, E.W., Austin, D., & Trainor, A.A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy Studies, 23* (1), 50 – 63.

Cheak-Zamora, N.C., Teti, M., & First, J. (2015). 'Transitions are scary for our kids, and they're scary for us': Family member and youth perspectives on the challenges of transitioning to adulthood with Autism. *Journal of Applied Research in Intellectual Disabilities,* Article first published online: 5 March 2015.

Cimera, R.E., Burgess, S., & Bedesem, P.L. (2014). Does providing transition services by age 14 produce better vocational outcomes for students with intellectual disability? R*esearch and Practice for Persons with Severe Disabilities, 39*(1), 47 – 54.

Cimera, R. E., Burgess, S., & Wiley, A. (2013). Does providing transition services early enable students with ASD to achieve better vocational outcomes as adults? *Research and Practice for Persons with Severe Disabilities, 38*(2), 88 – 93.

Community Living British Columbia (2019). *Periodic report for employment*. Prepared for the Roundtable on Inclusive Employment, March 31, 2019.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (Third ed.). SAGE.

Inclusion Canada. (n.d.). Employment. https://inclusioncanada.ca/campaign/employment/

Grossi, T., Nord, D., & Andersen, J. (2020) Earning a real wage: A statewide investigation of young adults with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities, 58*(4), 264 - 272.

Khayatzadeh-Mahani, A., Wittevrongel, K., Nicholas, D.B., & Zwicker, J.D. (2020). Prioritizing barriers and solutions to improve employment for persons with developmental disabilities. *Disability and Rehabilitation, 42*(19), 2696-2706.
MAS. (2020). *Meticulon Assessment Services; Meticulon*. https://www.meticulon.com/solutions/meticulon-assessment-services/

Mazzotti, V. L., Rowe, D. A., Kwiatek, S., Voggt, A., Chang, W.-H., Fowler, C. H., Poppen, M., Sinclair, J., & Test, D. W. (2021). Secondary transition predictors of postschool success: An update to the research base. *Career Development and Transition for Exceptional Individuals*, *44*(1), 47-64. DOI: 10.1177/2165143420959793

Mogensen, L. L., Drake, G., McDonald, J., & Sharp, N. (2023). Young people with intellectual disability speak out about life after school: “I want to do more in life than just…be a disability person.” *Journal of Intellectual & Developmental Disability*, *49*(2), 121-133. DOI: 10.3109/13668250.2023.2245276

Nord, D. (2020). Special issue on employment for transition-age youth and young adults with IDD. *Intellectual and Developmental Disabilities, 58* (4), 262-263.

Pearson, C., Watson, N., Gangneux, J., & Norberg, I. (2020). Transition to where and to what? Exploring the experiences of transitions to adulthood for young disabled people. *Journal of Youth Studies*, *24*(10), 1291-1307.
DOI: 10.1080/13676261.2020.1820972

Seaman, R., & Cannella-Malone, H. (2016). Vocational skills interventions for adults with Autism Spectrum Disorder: A review of the literature. *Journal of Developmental & Physical Disabilities, 28*(3), 479 – 494.

Smith, J.M., Sherwood, K., Blajeski, S., Ross, B., Smith, J.D., Jordan, N., Dawalt, L., Bishop, L., Atkins, M.S. (2021). Job interview and vocational outcomes among transition-age youth receiving special education pre-employment transition services. *Intellectual and Developmental Disabilities, 59* (5), 405-421.

Sung, C., Sanches, J., Kung, H-J., Wang, C-C., & Leahy, M.J. (2015). Gender differences in vocational rehabilitation service predictors of successful competitive employment for transition-aged individuals with autism. *Journal of Autism and Developmental Disorders, 45*(10), 3204 – 3218.

Appendix A: Tables and SPSS Data Results

This appendix contains the complementary data to the IMPACT 2.0 Cohort 2 report for 2025.[11] Tables are referenced in the main report and contextualized separately in this appendix. Throughout the document, tables are specified as pertaining to the entire sample of youth or as pertaining to a comparison between the group of youth in the three-stage approach to interventions (Group 1; n=63) and the group of youth in the free intervention approach (Group 2; n=52).

1. Results

Tables A1 to A10 contain the demographic data for the 115 youth that participated in Cohort 2 of IMPACT 2.0. Only youth who completed both interviews at entrance (T1) and exit (T2) are represented in this sample and analyzed. Tables A11 and A12 contain information for the parents/carers (n=115) who also completed interviews at T1 and T2.

Table A1: Youth Gender Identification

	N	**%**
Male	82	71.3
Female	31	27.0
Gender variant/Non-binary	1	.9
Prefer not to answer	1	.9
Total	115	100.0

Table A2: Gender Identification Comparing Groups

	Group 1		**Group 2**	
	N	**%**	**N**	**%**
Male	45	71.4	37	71.2
Female	16	25.4	15	28.8
Gender variant/Non-binary	1	1.6	-	-
Prefer not to answer	1	1.6	-	-
Total	63	100.0	52	100.0

[11] Tables might contain discrepancies in numerical calculations that occur as a result of rounding.

Table A3: Age at T1 (June 1st, 2024)

	N	%
16	32	27.8
17	33	28.7
18	40	34.8
19	10	8.7
Total	115	100.0

Table A4: Age at T1 Comparing Groups (June 1st, 2024)

	Group 1		Group 2	
	N	%	N	%
16	16	25.4	16	30.8
17	19	30.2	14	26.9
18	21	33.3	19	36.5
19	7	11.1	3	5.8
Total	63	100.0	52	100.0

Table A5: Youth Indigenous Identification (First Nation, Metis, Inuit)

	N	%
Yes	14	12.2
No	99	86.1
I prefer not to answer	2	1.7
Total	115	100.0

Table A6: Youth Indigenous Identification (First Nation, Metis, Inuit) Comparing Groups

	Group 1		Group 2	
	N	%	N	%
Yes	9	14.3	5	9.6
No	54	85.7	45	86.5
Prefer not to answer	-	-	2	3.8
Total	63	100.0	52	100.0

Table A7: Youth Visible Minority Identification

	N	%
Yes	38	33.0
No	72	62.6
I prefer not to answer	5	4.3
Total	115	100.0

Table A8: Youth Visible Minority Identification Comparing Groups

	Group 1		Group 2	
	N	**%**	**N**	**%**
Yes	27	42.9	11	21.2
No	35	55.6	37	71.2
I prefer not to answer	1	1.6	4	7.7
Total	63	100.0	52	100.0

Table A9: Highest Grade or Level of Education (June 1st, 2024)

	N	**%**
Grade 9	8	7.0
Grade 10	21	18.3
Grade 11	30	26.1
Grade 12	50	43.5
Grade 13/Other	6	5.2
Total	115	100.0

Table A10: Level of Education Comparing Groups (June 1st, 2023)

	Group 1		Group 2	
	N	**%**	**N**	**%**
Grade 9	6	9.5	2	3.8
Grade 10	13	20.6	8	15.4
Grade 11	18	28.6	12	23.1
Grade 12	25	39.7	25	48.1
Grade 13/Other	1	1.6	5	9.6
Total	63	100.0	52	100.0

Table A11: Relation to the Youth (Parents/carers)

	N	**%**
Parent	101	87.8
Guardian	7	6.1
Relative	4	3.5
Foster parent	3	2.6
Total	115	100.0

Table A12: Relation to the Youth Comparing Groups (Parents/carers)

	Group 1		Group 2	
	N	**%**	**N**	**%**
Parent	55	87.3	46	88.5
Guardian	6	9.5	1	1.9
Relative	2	3.2	2	3.8
Foster parent	-	-	3	5.8
Total	63	100.0	52	100.0

1.2 Supports

The 7-item Level of Support Subscale has a mean of 1.96 (n=115) with a SD of .39. Individual items are reflected in Table A13.

Table A13: 7-Item Level of Support Subscale (Areas of Assistance)

	Self-care		**Learning**		**Mobility**		**Self-direction**		**Receptive & Expressive Language**		**Independent Living**		**Economic Self-sufficiency**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
None	67	58.3	6	5.2	55	47.8	33	28.7	35	30.4	18	15.7	17	14.8
A little	38	33.0	70	60.9	40	34.8	65	56.5	64	55.7	51	44.3	47	40.9
A lot	10	8.7	39	33.9	20	17.4	17	14.8	16	13.9	46	40.0	51	44.3
Total	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0	115	100.0

When comparing groups, the 7-item Level of Support Subscale for Group 1 had a mean of 1.96 (n=63) with a SD of .44 and for Group 2 this scale had a mean of 1.96 (n=52) with a SD of .31. Individual items for the compared groups are reflected in Table A14.

Table A14: 7-Item Level of Support Subscale (Areas of Assistance) Comparing Groups

	Group 1 (n=63)		Group 2 (n=52)	
Self-care	**N**	**%**	**N**	**%**
None	37	58.7	30	57.7
A little	21	33.3	17	32.7
A lot	5	7.9	5	9.6
Learning	**N**	**%**	**N**	**%**
None	4	6.3	2	3.8
A little	33	52.4	37	71.2
A lot	26	41.3	13	25.0
Mobility	**N**	**%**	**N**	**%**
None	27	42.9	28	53.8
A little	24	38.1	16	30.8
A lot	12	19.0	8	15.4
Self-direction	**N**	**%**	**N**	**%**
None	18	28.6	15	28.8
A little	32	50.8	33	63.5
A lot	13	20.6	4	7.7
Receptive & Expressive Language	**N**	**%**	**N**	**%**
None	20	31.7	15	28.8
A little	33	52.4	31	59.6
A lot	10	15.9	6	11.5
Independent Living	**N**	**%**	**N**	**%**
None	16	25.4	2	3.8
A little	24	38.1	27	51.9
A lot	23	36.5	23	44.2
Economic Self-sufficiency	**N**	**%**	**N**	**%**
None	13	20.6	4	7.7
A little	23	36.5	24	46.2
A lot	27	42.9	24	46.2

The Overall Support Need filled out by the youth had a mean of 2.78 (n=115) with SD of .90. When comparing groups, the scale had a mean of 2.78 (n=63; SD= .85) for youth in Group 1 and a mean of 2.79 (n=52; SD= .96) for youth in Group 2.

Table A15: Youth Overall Level of Support Need

	N	%
No support	2	1.7
A little support	47	40.9
Medium support	48	41.7
A lot of support	10	8.7
I need support all the time	8	7.0
Total	115	100.0

Table A16: Youth Overall Level of Support Need Comparing Groups

	Group 1		Group 2	
	N	%	N	%
No support	1	1.6	1	1.9
A little support	24	38.1	23	44.2
Medium support	30	47.6	18	34.6
A lot of support	4	6.3	6	11.5
I need support all the time	4	6.3	4	7.7
Total	63	100.0	52	100.0

The Overall Support Need as observed by the parents/carers is reflected in Table A17 regarding their youth had a mean of 3.02 (n=115; SD= .82). When comparing groups, the Overall Support Need for the parents/carers of youth in Group 1 had a mean of 2.98 (n=63; SD= .75) and a mean of 3.06 (n=52; SD= .90) for those in Group 2 (Table A18).

Table A17: Parents/carers Overall Level of Support Need

	N	%
A little support	30	26.1
Medium support	60	52.2
A lot of support	18	15.7
Youth needs support all the time	7	6.1
Total	115	100.0

Table A18: Parents/carers Overall Level of Support Need Comparing Groups

	Group 1		Group 2	
	N	%	N	%
A little support	16	25.4	14	26.9
Medium support	34	54.0	26	50.0
A lot of support	11	17.5	7	13.5
Youth needs support all the time	2	3.2	5	9.6
Total	63	100.0	52	100.0

1.3 Employment

Tables A19 to A38 specify the youth their employment experiences as recorded at the entrance (T1) and the exit (T2) from the summer program as well as new experiences gained during the IMPACT 2.0 program. Tables provide information about the baseline level of employment experiences for the youth and the paid and unpaid experiences gained. It is important to note that youth could have more than one work experience.

Table A19: Youth Previous Paid Employment at T1 (June 1st, 2024)

	N	%
Yes	31	27.0
No	84	73.0
Total	115	100.0

Table A20: Youth Previous Paid Employment at T1 Comparing Groups (June 1st, 2024)

	Group 1		Group 2	
	N	%	N	%
Yes	14	22.2	17	32.7
No	49	77.8	35	67.3
Total	63	100.0	52	100.0

Table A21: Youth Current Paid Employment at T1 (June 1st, 2024)

	N	%
Yes	14	12.2
No	101	87.8
Total	115	100.0

Table A22: Youth Current Paid Employment at T1 Comparing Groups (June 1st, 2024)

	Group 1		Group 2	
	N	%	N	%
Yes	8	12.7	6	11.5
No	55	87.3	46	88.5
Total	63	100.0	52	100.0

Table A23: Youth Previous Unpaid Employment at T1 (June 1st, 2024)

	N	%
Yes	89	77.4
No	26	22.6
Total	115	100.0

Table A24: Youth Previous Unpaid Employment at T1 Comparing Groups (June 1st, 2024)

	Group 1		Group 2	
	N	**%**	**N**	**%**
Yes	49	77.8	40	76.9
No	14	22.2	12	23.1
Total	63	100.0	52	100.0

Combining the information about the youth their previous and current employment experiences was expressed as a baseline employment score that is displayed in Tables A25 and A26.

Table A25: Youth Employment Score at T1 (June 1st, 2024)

	N	**%**
None (0)	17	14.8
Unpaid only (1)	56	48.7
Paid only (2)	9	7.8
Both unpaid and paid (3)	33	28.7
Total	115	100.0

Table A26: Youth Employment Score at T1 Comparing Groups (June 1st, 2024)

	Group 1		Group 2	
	N	**%**	**N**	**%**
None (0)	10	15.9	7	13.5
Unpaid only (1)	32	50.8	24	46.2
Paid only (2)	4	6.3	5	9.6
Both unpaid and paid (3)	17	27.0	16	30.8
Total	63	100.0	52	100.0

At T2, exit interviews and vocational specialists reported on the gained employment experiences recorded for the 115 youth. These new employment experiences since T1 and the employment outcomes as scores are reported in Tables A27 to A38.

Table A27: Youth Paid Employment gained at T2 (September 1st, 2024)

	N	**%**
Yes	50	43.5
No	65	56.5
Total	115	100.0

Table A28: Youth Paid Employment gained at T2 Comparing Groups (September 1st, 2024)

	Group 1		Group 2	
	N	**%**	**N**	**%**
Yes	23	36.5	27	51.9
No	40	63.5	25	48.1
Total	63	100.0	52	100.0

Table A29: Youth Unpaid Employment gained at T2 (September 1st, 2024)

	N	**%**
Yes	68	59.1
No	47	40.9
Total	115	100.0

Table A30: Youth Unpaid Employment at T2 Comparing Groups (September 1st, 2024)

	Group 1		Group 2	
	N	**%**	**N**	**%**
Yes	41	65.1	27	51.9
No	22	34.9	25	48.1
Total	63	100.0	52	100.0

Table A31: Youth Employment Experiences as Employment Score since T1

	N	**%**
None (0)	13	11.3
Unpaid only (1)	52	45.2
Paid only (2)	34	29.6
Both unpaid and paid (3)	16	13.9
Total	115	100.0

Table A32: Youth Employment Experiences as Score since T1 Comparing Groups

	Group 1		Group 2	
	N	**%**	**N**	**%**
None (0)	6	9.5	7	13.5
Unpaid only (1)	34	54.0	18	34.6
Paid only (2)	16	25.4	18	34.6
Both unpaid and paid (3)	7	11.1	9	17.3
Total	63	100.0	52	100.0

Table A33: Youth Employment Experiences as Scores (T1 + T2)

T1 + T2	N	%
(0) *None + None*	2	1.7
(1) *None + Unpaid or Unpaid + None*	12	10.4
(2) *None + Paid or Paid + None or Unpaid + Unpaid*	35	30.4
(3) *None + Both or Both + None or Unpaid + Paid or Paid + Unpaid*	30	26.1
(4) *Unpaid + Both or Both + Unpaid or Paid + Paid*	18	15.7
(5) *Paid + Both or Both + Paid*	11	9.6
(6) *Both + Both*	7	6.1
Total	115	100.0

Table A34: Youth Employment Experiences as Scores (T1 + T2) Comparing Groups

T1 + T2	Group 1		Group 2	
	N	%	N	%
(0) *None + None*	1	1.6	1	1.9
(1) *None + Unpaid or Unpaid + None*	8	12.7	4	7.7
(2) *None + Paid or Paid + None or Unpaid + Unpaid*	23	36.5	12	23.1
(3) *None + Both or Both + None or Unpaid + Paid or Paid + Unpaid*	13	20.6	17	32.7
(4) *Unpaid + Both or Both + Unpaid or Paid + Paid*	10	15.9	8	15.4
(5) *Paid + Both or Both + Paid*	3	4.8	8	15.4
(6) *Both + Both*	5	7.9	2	3.8
Total	63	100.0	52	100.0

Table A35: Youth Employment Outcomes at T2 (T1 + T2)

	N	%
None (0)	2	1.7
Unpaid only (1)	42	36.5
Paid only (2)	8	7.0
Both unpaid and paid (3)	63	54.8
Total	115	100.0

Table A36: Youth Employment Outcomes at T2 (T1 + T2) Comparing Groups

	Group 1		Group 2	
	N	**%**	**N**	**%**
None (0)	1	1.6	1	1.9
Unpaid only (1)	28	44.4	14	26.9
Paid only (2)	5	7.9	3	5.8
Both unpaid and paid (3)	29	46.0	34	65.4
Total	63	100.0	52	100.0

Table A37: Youth Number of Work Confirmations since T1

	N	**%**
0	14	12.2
1	67	58.3
2	25	21.7
3	8	7.0
4	1	.9
Total	115	100.0

Table A38: Youth Number of Work Confirmations since T1 Comparing Groups

	Group 1		Group 2	
	N	**%**	**N**	**%**
0	6	9.5	8	15.4
1	42	66.7	25	48.1
2	10	15.9	15	28.8
3	5	7.9	3	5.8
4	-	-	1	1.9
Total	63	100.0	52	100.0

1.4 Evaluation

At T1 and T2, youth were asked to report on their knowledge about employment. Tables A39 and A40 reflect the youth their knowledge about employment at T1 and T2 and the change in mean scores for each of the seven items. Youth also completed the MAS at T1 and T2. Tables A41 and A42 report those MAS results regarding the youth's self-observed soft skills and changes in their mean scores for each MAS domain. Parents/carers were also asked to reflect on their youth's soft skills and the potentially observed change over time in mean scores is visible in Tables A43 and A44.

Table A39: Knowledge about Employment at T1 and T2 (n=115)

Question:	Mean T2	Mean T1	(T2-T1)
When it comes to employment, I know [blank] about how to start looking for a job	2.69	2.14	.55*
When it comes to employment, I know [blank] about the kind of job I want	2.85	2.53	.32*
I have [blank] skills or knowledge about the job that I want	2.66	2.36	.30*
When it comes to employment, I know [blank] how to do a job interview	2.67	2.22	.45*
When it comes to employment, I know [blank] about what qualities employers are looking for in an employee	2.84	2.38	.46*
When I think about getting a job, I feel [blank] excited about working	2.97	2.83	.14
When I think about getting a job, I feel [blank] confident	2.83	2.70	.13

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p. ≤ .001.

Table A40: Knowledge about Employment Comparing Groups at T1 and T2

	Group 1 (n=63)			Group 2 (n=52)		
	Mean T2	Mean T1	(T2-T1)	Mean T2	Mean T1	(T2-T1)
Question 1	2.78	2.05	.73***	2.58	2.25	.33*
Question 2	2.94	2.48	.44***	2.75	2.60	.15
Question 3	2.65	2.39	.26**	2.67	2.33	.34*
Question 4	2.65	2.19	.46***	2.69	2.25	.44**
Question 5	2.74	2.26	.48***	2.96	2.52	.44***
Question 6	3.03	2.83	.20*	2.90	2.85	.15
Question 7	2.84	2.62	.22	2.83	2.79	.04

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p. ≤ .001.

Table A41: Youth MAS Paired Samples t-Test Mean Scores (T2 – T1)

All Youth (n=115)	Mean T2	Mean T1	(T2-T1)
Time Expectations	3.79	3.71	.08
Organization	3.87	3.87	.0
Authority	3.88	3.82	.06
Teamwork	3.98	3.90	.08
Perseverance	3.74	3.59	.15*
Responsibility	3.94	3.83	.11
Motivation Level	4.06	4.07	-.01
Mindfulness	4.30	4.15	.15**
Self-Awareness	3.83	3.63	.20**
Communication Skills	3.75	3.70	.05
Comprehension	4.05	3.96	.09
Personal Appearance	4.09	3.99	.10

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p. ≤ .001.

Table A42: Youth MAS Paired Samples t-Test Mean Scores (T2 – T1) Comparing Groups

	Group 1 (n=63)			Group 2 (n=52)		
	Mean T2	Mean T1	(T2-T1)	Mean T2	Mean T1	(T2-T1)
Time Expectations	3.83	3.74	.09	3.76	3.68	.08
Organization	3.88	3.83	.05	3.86	3.93	-.07
Authority	3.94	3.84	.10	3.80	3.79	.01
Teamwork	3.99	3.85	.14	3.98	3.97	.01
Perseverance	3.71	3.55	.16	3.76	3.63	.13
Responsibility	3.96	3.84	.12	3.92	3.83	.09
Motivation Level	4.01	4.13	-.12	4.12	3.99	.13
Mindfulness	4.26	4.11	.15*	4.34	4.20	.14*
Self-Awareness	3.87	3.57	.30***	3.78	3.72	.06
Communication Skills	3.78	3.66	.12	3.71	3.75	-.04
Comprehension	4.03	3.94	.09	4.07	3.99	.08
Personal Appearance	4.08	4.02	.06	4.09	3.95	.14

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

Table A43: Parents/Carers MAS Paired Samples t-Test Mean Scores (T2 – T1)

	Mean T2	Mean T1	(T2-T1)
Time Expectations	3.74	3.53	.21**
Organization	3.65	3.43	.22**
Authority	3.58	3.40	.18*
Teamwork	3.78	3.57	.21***
Perseverance	3.46	3.23	.23**
Responsibility	3.75	3.54	.21**
Motivation Level	3.89	3.70	.19**
Mindfulness	4.37	4.26	.11*
Self-Awareness	3.66	3.37	.29***
Communication Skills	3.43	3.10	.33***
Comprehension	3.61	3.48	.13*
Personal Appearance	3.75	3.63	.12*

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

Table A44: Parents/Carers MAS Paired Samples t-Test (T2 – T1) Comparing Groups

	Group 1 (n=63)			Group 2 (n=52)		
	Mean T2	Mean T1	(T2-T1)	Mean T2	Mean T1	(T2-T1)
Time Expectations	3.82	3.55	.27*	3.65	3.50	.15
Organization	3.73	3.45	.28*	3.55	3.40	.15
Authority	3.72	3.48	.24**	3.41	3.29	.12
Teamwork	3.83	3.46	.37***	3.73	3.70	.03
Perseverance	3.51	3.20	.31**	3.39	3.27	.12
Responsibility	3.85	3.60	.25**	3.63	3.47	.16
Motivation Level	3.89	3.67	.22*	3.89	3.74	.15
Mindfulness	4.35	4.15	.20**	4.40	4.39	.01
Self-Awareness	3.70	3.25	.45***	3.62	3.51	.11
Communication Skills	3.54	3.10	.44***	3.30	3.09	.21
Comprehension	3.68	3.35	.33***	3.52	3.62	-.10
Personal Appearance	3.70	3.53	.17	3.81	3.75	.06

* Statistically significant at p ≤ .05; ** Statistically significant at p ≤ .01; *** Statistically significant at p ≤ .001.

Table A45 displays the level of participation for the 115 youth and Table A46 displays this info comparing the level of participation for youth in their respective groups. Tables A47 and A48 relate the time spent in the three main types of interventions or activities for the complete sample and comparing groups.

Table A45: Level of Participation

	N	%
0%-24%	4	3.5
25%-49%	10	8.7
50%-74%	17	14.8
75%-100%	84	73.0
Total	115	100.0

Table A46: Level of Participation compared by Group

	Group 1		Group 2	
	N	%	N	%
0%-24%	2	3.2	2	3.8
25%-49%	6	9.5	4	7.7
50%-74%	13	20.6	4	7.7
75%-100%	42	66.7	42	80.8
Total	63	100.0	52	100.0

Prescribed Interventions Pathway

The predesigned interventions focus on three areas of tailored approach in a sequential way to improve soft skills and provide vocational training as predictors for future employment and to gain insight on a potential formula for increased employment success and future employment. For the 103 youth, the minimum amount of time spent in direct interventions with employment specialists completing interventions was 450 minutes (7.5 hours) and the maximum amount of time was 6230 minutes (104 hours), with a mean of 2312 minutes (38.5 hours).

Table A47: Minutes Spent in Discovery, Skill Building, and Job Development

	N	Mean	SD
Minutes spent in discovery/career exploration	115	352	254
Minutes spent in skill building	115	860	751
Minutes spent in job development	115	968	1271

Table A48: Minutes Spent in Discovery, Skill Building, and Job Development Comparing Group

	Group 1			Group 2		
	N	**Mean**	**SD**	**N**	**Mean**	**SD**
Minutes spent in discovery/career exploration	63	432	146	52	255	318
Minutes spent in skill building	63	646	329	52	1121	1002
Minutes spent in job development	63	758	725	52	1223	1689

Tables A49 to A54 specify youth and parent/carer evaluations of their IMPACT 2.0 experiences collected at exit (T2).

Table A49: Youth Program Evaluation at T2 (n=115)

	Mean
I liked the IMPACT Program	4.12
I enjoyed the activities during the IMPACT Program	4.07
I learned different ways about how to get a paid job during the IMPACT Program	3.70
What I have learned in the IMPACT Program will help me get a paid job in the future	4.04
The activities I participated in during the IMPACT Program helped me discover what kind of paid job I want to get in the future	3.74
I was given the right amount of support to participate in the IMPACT Program	4.23

Table A50: Youth Program Evaluation Distribution Table at T2 (n=115)

I liked the IMPACT Program.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	2	2	12	63	36
%	1.7	1.7	10.4	54.8	31.3
I enjoyed the activities during the IMPACT Program.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	1	6	16	53	39
%	.9	5.2	13.9	46.1	33.9
I learned different ways about how to get a paid job during the IMPACT Program.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	3	5	32	58	17
%	2.6	4.3	27.8	50.4	14.8
What I have learned in the IMPACT Program will help me get a paid job in the future.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	2	1	15	69	28
%	1.7	.9	13.0	60.0	24.3
The activities I participated in during the IMPACT Program helped me discover what kind of paid job I want to get in the future.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	2	10	21	65	17
%	1.7	8.7	18.3	56.5	14.8
I was given the right amount of support to participate in the IMPACT Program.					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	-	2	14	60	39
%	-	1.7	12.2	52.2	33.9

Table A51: Youth Program Evaluation Mean Scores Comparing Groups at T2

	Group 1 (n=63)	**Group 2 (n=52)**
I liked the IMPACT Program	4.14	4.10
I enjoyed the activities during the IMPACT Program	3.97	4.19
I learned different ways about how to get a paid job during the IMPACT Program	3.70	3.71
What I have learned in the IMPACT Program will help me get a paid job in the future	3.95	4.15
The activities I participated during the IMPACT Program helped me discover what kind of paid job I want to get in the future	3.78	3.69
I was given the right amount of support to participate in the IMPACT Program.	4.21	4.27

Table A52: Parent and Carer Program Evaluation and Feedback at T2 (n=115)

	Mean
I am overall satisfied with our experience with IMPACT	4.27
My youth enjoyed learning and experiencing employment related activities	4.26
My youth learned skills during our time with the program that will help them get a paid job in the future	4.03
The program addressed potential barriers to employment experiences through training and engagement with job skills	3.98
The program improved my youth's soft skills (soft skills refer to social and emotional skills, such as confidence and communication)	4.07

Table A53: Parent and Carer Program Evaluation Distribution Table at T2 (n=115)

I am overall satisfied with our experience with the Summer Employment Service program/IMPACT					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	1	2	12	50	50
%	.9	1.7	10.4	43.5	43.5
My youth enjoyed learning and experiencing employment related activities					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	1	1	14	50	49
%	.9	.9	12.2	43.5	42.6
My youth learned skills during our time with the program that will help them get a paid job in the future					
	Strongly disagree	*Disagree*	*Neutral*	*Agree*	*Strongly agree*
N	1	3	22	54	35
%	.9	2.6	19.1	47.0	30.4
The program addressed potential barriers to employment experiences through training and engagement with job skills					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
N	1	3	22	60	29
%	.9	2.6	19.1	52.2	25.2
The program improved my youth's soft skills (soft skills refer to social and emotional skills, such as confidence and communication)					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
N	1	2	21	55	36
%	.9	1.7	18.3	47.8	31.3

Table A54: Parent and Carer Program Evaluation Mean Scores Comparing Groups at T2

	Group 1 (n=63)	**Group 2 (n=52)**
I am overall satisfied with our experience with IMPACT	4.25	4.29
My youth enjoyed learning and experiencing employment related activities	4.25	4.27
My youth learned skills during our time with the program that will help them get a paid job in the future	4.03	4.04
The program addressed potential barriers to employment experiences through training and engagement with job skills	3.95	4.02
The program improved my youth's soft skills (soft skills refer to social and emotional skills, e.g., confidence and communication)	4.03	4.12