

Success in Apprenticeship

**“Improving Reading & Document Use Skills to
Improve Success Rates in Apprenticeship Training”**

**Executive Summary
2022**

Bow Valley College

Acknowledgments

Bow Valley College (the College) recognizes the contributions of numerous partners involved in the Success in Apprenticeship project. The success of the project relied on the contributions of many individuals and organizations.

First, the College acknowledges the significant contribution of the Government of Canada's Adult Learning, Literacy and Essential Skill Program as the project funder. Their support, guidance, and flexibility as the project adapted during the pandemic, was critical to the project's success.

The project's Advisory Committee provided strategic counsel and helped steer the project from the early planning stages, during piloting and through a challenging transition during the pandemic. The College thanks all Advisory Committee members for their guidance: Emily Arrowsmith (Canadian Apprenticeship Forum), Sheila Currie (Social Research and Demonstration Corporation), Wendy Magahay (Words Matter), Dalton Mervold (Saskatchewan Polytechnic), Marisa Sosa (Skills Compétences Canada), as well as our past members: Albert Hille (Hille Learning Associates) and Bert Wassing (formerly of Northern Alberta Institute of Technology).

The project is also grateful for the contribution of Pilot Partners and participants who were instrumental to the project. This includes the ongoing engagement of Saskatchewan Polytechnic, Conestoga College and the International Brotherhood of Electrical Workers Local Union 625, and the 689 participants that piloted the project resources and provided invaluable feedback throughout. We also acknowledge the long-standing contributions of Northern Alberta Institute of Technology (NAIT). NAIT's innovative approach to foundational skills training for apprentices paved the way for this project.

Special thanks are extended to Social Research and Demonstration Corporation (SRDC) for their research guidance and expertise throughout the project including but not limited to, leading the research and evaluation framework design, qualitative data collection, and finalizing the research data analysis to produce project findings.

Appreciation is also extended to Centre FORA Inc. for translation services, and to Box Clever for provisioning the project website platform. The project is grateful to V Strategies Inc. for their professional video production services and Learning Metrix for the development of a customized project management information system. The project is also appreciative of the psychometric consultation services provided by Dr. Theresa Kline and Polymetrika.

The College remains grateful and appreciative for the ongoing participation, engagement, collaboration and support from all participants, partners, consultants and the Government of Canada. The project operated under extraordinary circumstances, and its success was the result of the work accomplished together.

Executive Summary

Project Overview

The Success in Apprenticeship (SIA) project was a five-year national initiative led by Bow Valley College and funded in part by the Government of Canada's Adult Learning, Literacy and Essential Skills Program. The project aimed to expand and formalize an effective foundational skills training model from Northern Alberta Institute of Technology (NAIT) which supplemented technical trades training with instructor-led foundational skills training for “at-risk” apprentices to demonstrate positive impacts on apprentices’ grades, exam scores and first year completion.

The SIA project aimed to replicate and expand on NAIT’s success by formalizing a training delivery model and developing an extensive series of targeted essential skills based learning materials for technical training providers to support skills training across apprenticeship programming in Canada. The project also aimed to support the delivery of training by building instructor capacity to adopt a foundational skills training approach.

Following the development of an extensive suite of trades and foundational skills training resources, the project partnered with apprenticeship training institutions and providers, Conestoga College, International Brotherhood of Electrical Workers (IBEW) Local Union 625, and Saskatchewan Polytechnic, to pilot the resources and evaluate its effectiveness. This was accomplished using a proposed Training Model to identify “at-risk” apprentices and deliver foundational skills training across one of three delivery models. Training effectiveness was evaluated based upon a collection of data points, including pre and post assessments, surveys and documented training participation.

The COVID pandemic had significant impacts on the project, which resulted in a temporary suspension of piloting. Substantial adaptations to the research and evaluation plan, pilot targets, data collection and SIA training delivery model were required. Despite this, the project was still able to complete a smaller scale evaluation and demonstrate some success.

SIA Project Outputs

Project Outputs

- ✓ A free 'Locator' skills assessment for apprentices and pre-apprentices to informally evaluate skills
<https://www.successinapprenticeship.ca/learner-profile/locator>
<https://www.reussitedanslapprentissage.ca/learner-profile/evaluation>
 - ✓ A bilingual OER essential skills training program for pre-apprentices and apprentices, available for online/classroom use and supported by video: [successinapprenticeship.ca](https://www.successinapprenticeship.ca/reussitedanslapprentissage.ca)
[reussitedanslapprentissage.ca](https://www.reussitedanslapprentissage.ca)
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- ✓ Instructor training workshops, facilitator (instructor) guide and post project training videos for instructors
successinapprenticeship.ca/instructor-profile
reussitedanslapprentissage.ca/instructor-profile
- ✓ 41 instructors, trainers, and administrative support staff trained during project piloting, plus an additional 26 instructors participated in supplementary capacity-building webinars post piloting.
- ✓ 689 pilot participants from pre-apprenticeship and apprenticeship programs.

SIA Pilot Results

Project Outcomes and Results

- ✓ Increases in essential skills among participants were seen nominally within 94% of participating pre-apprentices and 78% of participating year 1 apprentices in at least one skill domain.
- ✓ While results were mixed, first and second year apprentices showed an increase in Document Use skills, while pre-apprentice participants showed an increase in Numeracy following the SIA Training.
- ✓ Improved capacity of instructors to deliver essential skills training.
- ✓ Increased integration of essential skills training into pre-apprenticeship and apprenticeship training.
- ✓ The SIA training reported some improved wellness and well-being indicators (e.g., health, psycho-social capital, self-efficacy, self confidence, resilience) for participants with increases reported in perceived Career Decision Making abilities and Critical Thinking abilities amongst select pilot participant groups.

Participation Key Findings

- ✓ Close to three-quarters of all program participants attended at least some SIA training.
- ✓ Pre-apprentices logged higher exposure to SIA training than the apprentices in block training, due to the longer lengths of their programs (24-30 weeks).
- ❖ Those identified to be “at-risk” were more likely to skip training compared to those who were not “at-risk”.

- ❖ Time conflicts were the most cited reason for not attending SIA training, followed by disinterest.

In discussion with the project Advisory Committee and the project evaluation and research partner, Social Research and Demonstration Corporation (SRDC), and in alignment with Pilot Partner and pilot participant feedback, the following factors were determined to have an influence on targeted outcomes:

- smaller than planned sample sizes
- measurement tool standard errors
- pilot participant response fatigue, decreased engagement
- insufficient time between pre- and post-assessments to demonstrate increases
- varying testing circumstances
- lower exposure time to the program than initially planned
- more fragmented training across various elements (multiple trades, delivery models and years)
- the effects of the pandemic on individual wellbeing, education, training, and the economy

Given these intervening variables, some decreases were noted in the program training outcomes. There were also neutral findings, including no statistically significant impacts on reading scores, or on average grades or dropout rates.

Despite some challenges, qualitative findings from the pilot were favourable, as were pilot participant evaluations of the SIA training and instructor reviews of the capacity-building training.

SIA Project Successes & Challenges

Overall Project Successes

- ✓ Produce and widely distribute a collection of high-quality trades focused foundational skills training materials, positioned as an open-educational resource
- ✓ Building instructor capacity for teaching essential skills
- ✓ Skill increases within some skill domains, among some participant groups
- ✓ Skill increases within the integrated training program
- ✓ Increases across some psychosocial trait attributes

Overall Project Challenges

- ❖ Pilot Partner & Participant Recruitment
- ❖ Pilot Participant Engagement
- ❖ Pre and Post Assessment Results
- ❖ Skill decreases within some skill domains
- ❖ Decreases across some psychosocial trait attributes
- ❖ Adapting to the Pandemic

Project Conclusions & Future Considerations

Key Project Conclusions

- ✓ **Multiple sources of data point to the advantages of integrating SIA training with technical training for apprentices; learners are more likely to gain more exposure and resulting increases in skills.**
- ✓ **The project training curricula and resources are publicly available, in English and French, as an open educational resources for all apprenticeship stakeholders.**

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English: <https://www.successinapprenticeship.ca>

French: <https://www.reussitedanslapprentissage.ca>

- ✓ Qualitative findings from key informant interviews were favourable, as were pilot participant evaluations of the SIA training, and instructor reviews of capacity-building training.
- ❖ The SIA pilot encountered recruitment challenges prior to COVID, which were further exasperated during the pandemic. The project quickly adapted and pivoted to offer resources online and Pilot Partners responded by finding alternative ways to continue to deliver SIA training remotely, and in synchronous and asynchronous formats in addition to the standalone and integrated models initially proposed.

- ❖ Quantitative findings from TOWES assessment results and pilot participant surveys were mixed. A number of potential contributing factors were considered:
 - Smaller sample sizes than anticipated for the proposed quantitative analyses
 - Multiple program streams (trades, year of apprenticeship, type of delivery model)
 - Respondent fatigue due to short time elapsed between pre and post assessments
 - Disruption, uncertainty and health issues associated with the pandemic
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Based upon the SIA project delivery, results and findings, the following recommendations may be considered for future projects and research in this area.

Future Considerations

- Mandated and integrated foundational skills training particularly within pre-apprenticeship training, may further support skills development and apprentices' success.

*“The biggest challenge is just finding a way to fit it in.
So they’re learning the skills as part of the course.”*
-SIA Pilot Partner

*“If it became a mandatory or just folded in as part of the course, students wouldn’t
think twice about it and it would just be something they have to do.”*
-SIA Pilot Partner

- Earlier and ongoing pilot partner recruitment throughout the project cycle is recommended for future project engagement successes.
- The importance of Skills for Success may be best promoted to trades stakeholders and apprentices via Numeracy improvement.

*“One thing that I wasn’t aware of that I liked about the project is it made me appreciate
[the extent of skill gaps]...numeracy was an obvious one for me, before we had this program...
but the gaps in document use and reading!”*
-SIA Pilot Partner

- Building Instructor Capacity is critical to support foundational skills training delivery.

*“You learn how they [students] learn, and adapt it to help them;
I was unconsciously increasing my ability to teach.”*
-SIA Pilot Partner

*“You become aware of how **you** find information – skimming and scanning
– important for codebooks....”*
-SIA Pilot Partner

- When and as feasible, Skills for Success post project resources should be made widely available via shared open educational resource repositories.

*“I’d recommend the SIA for any trade.
The [SIA resources] will be a great advantage to faculty who use them”*
-SIA Pilot Partner

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