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Project Insights Report

Evaluation of an Upskilling Program for Jobs in Digital Health and Data Analytics

PARTNERS
The Michener Institute of Education at UHN

LOCATIONS
Across Canada

INVESTMENT
$205,000

PUBLISHED
November 2025

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Executive Summary

The Michener Institute of Education at UHN in Toronto, Canada, conducted a comprehensive evaluation of its “Upskilling Program for Jobs in Digital Health and Data Analytics”, aimed at bridging the skills gap in healthcare professionals’ proficiency with advanced digital and data-driven technologies. The research focused on the program’s effectiveness in equipping students with necessary skills, the alignment of the curriculum with industry needs, and the career outcomes for graduates.

The findings revealed a strong preference among students for modular and customizable learning options that accommodate varying career goals and time constraints. While the online didactic components were effective in enhancing students’ understanding of digital health concepts, the experiential learning elements faced challenges such as high attrition rates and significant resource demands. This has led to considerations for alternative experiential learning methods, such as virtual reality simulations, to reduce costs and improve accessibility. The research also highlighted the absence of a clear career path post-completion, suggesting a need for educational institutions to better align their programs with actual market opportunities.

For the next phase of the project, The Michener Institute is seeking to build on the insights discovered here, to make the program more modular and to integrate more digital tools in the learning process. These changes are expected to make the program more efficient and tailored to the needs of students and the healthcare industry, potentially serving as a model for similar programs globally.

KEY INSIGHTS

1. Individuals with the skill sets resulting from the Digital Health and Data Analytics program do not fit easily into the National Occupation Classification system used by governments and others in labour markets studies and assessments. This problem extends to many areas of the applied (or allied) health professions where the National Occupation Classification system does not accurately capture the jobs or professions in today's health care system.

2. During the program, it was discovered that the practicum component turned out to be more financially onerous than expected. What is more, many students sought to be exempt from it. This led the team to consider other options shorter in duration and less resource intensive to give students the knowledge and skills required, by drawing on coursework in other Michener programs and programs offering micro-credentials.

3. Approximately 5 or so students leave before graduation because they took jobs. In addition, because the program was advertised as part-time, most of the students were either working or took jobs during the course of the program. As a result, many students simply stayed with their current employer after graduation, although some of these indicated that the program allowed them to expand their role in their current employment.

4. The redesign better supported the needs of the students that were entering the program, most of whom were working full time but looking for digital health knowledge and skills to support their careers. Many students were offered jobs at the end of semester four (i.e. pre-practicum) or sometime during the first practicum semester prompting them to leave the program.

The Issue

In recent years, the healthcare sector has witnessed significant technological advancements, particularly in the realms of digital health and big data analytics. These innovations have transformed traditional healthcare practices, introducing complex digital systems like electronic health records and sophisticated data-driven technologies such as artificial intelligence in radiology and large-scale bioinformatics in genetics.

This shift has necessitated a parallel evolution in the skill sets required by healthcare professionals. Traditionally, healthcare education has concentrated on direct patient care and basic medical knowledge, leaving a gap in digital and data analytics expertise among healthcare workers. This gap has become increasingly problematic as healthcare delivery becomes more reliant on technology for decision-making, risk management, and personalized medicine approaches.

The Michener Institute of Education at UHN, recognizing this growing need, initiated a program in September 2021 specifically designed to bridge this knowledge gap. The program targeted two main groups: healthcare professionals lacking in digital and data competencies and IT specialists aspiring to apply their skills within healthcare settings.

The urgency for such a program was underscored by the rapid advancements in fields like genetics, where bioinformatics plays a pivotal role, and in general healthcare management, which increasingly relies on data-driven decision-making.

The introduction of this upskilling program was not just a response to the immediate needs of the healthcare sector but also a proactive measure to prepare for future demands.

Traditional health education programs had not sufficiently covered the integration of digital and data analytics skills, leading to a workforce that was often playing catch-up with technology.

The Michener Institute's program aimed to transform this narrative by creating a curriculum that was directly informed by the needs of the healthcare industry, ensuring that graduates would be well-equipped to lead and innovate in their fields. This strategic approach to education was set against the backdrop of a healthcare landscape that was rapidly evolving, underscoring the urgency and relevance of the program.

What We Investigated

The Digital Health and Data Analytics program was designed as a two-year, fully online and experientially based curriculum, ensuring a thorough educational process while allowing participants to maintain their current professional roles.

The research centered on assessing the effectiveness of the program at the Michener Institute of Education. The primary questions guiding this investigation were:

1. How does the program equip students from healthcare and IT backgrounds with necessary skills for digital health roles?
2. What are the gaps in current competencies, and how does the program address these?
3. How do the educational outcomes align with labour market demands?

The Digital Health and Data Analytics program leveraged some already existing programs and coursework at Michener, particularly a certificate program in Artificial Intelligence ("AI") offered by Michener's Continuing Education division. The program was designed in anticipation that graduates would be the pioneers driving protocol development and quality improvement processes forward on the frontlines of care. The initiative was also designed to offer students an exit ramp to receive a Graduate Certificate after four semesters of study as per the Ontario Qualification Framework if they chose not to take the two semesters of practicum in semesters five and six.

The Digital Health and Data Analytics program was also designed to attract students from two target groups:

- Students with clinical backgrounds and a keen interest in exploring technology enhanced solutions for care. It was understood that these individuals would likely continue to work during the program and, therefore, academic programming needed to be accessible, virtual and engaging.
- Digital or information technology graduates with a keen interest in healthcare and /or clinical impacts.

✔ What We're Learning

In the evaluation of the "Upskilling Program for Jobs in Digital Health and Data Analytics" at The Michener Institute of Education at UHN, several key learnings emerged, shaping the future direction of educational offerings in this field. As noted above, the program was intended to attract a diverse group of learners from two primary domains: i) those with a digital or data background but with little experience in health care, and ii) those from health care with little experience in digital or data.

Students expressed a preference for courses that allowed for customization to fit their specific career goals and time constraints. This insight has prompted a reevaluation of program design, emphasizing shorter, more targeted learning modules that can be completed independently of a larger, more time-intensive curriculum.

The program appealed to students with differing backgrounds
An analysis of the backgrounds and credentials of those applying to the program revealed that the Digital Health and Data Analytics program was indeed attractive to a diverse set of learners. The results suggest that the program was more effective in attracting those with health care backgrounds (63%) than those from the digital world, although some applicants came with a background in both (24%). For those students who came from a particular domain, they self-reported that their knowledge in the area was moderate, and that was for all areas covered in the program.

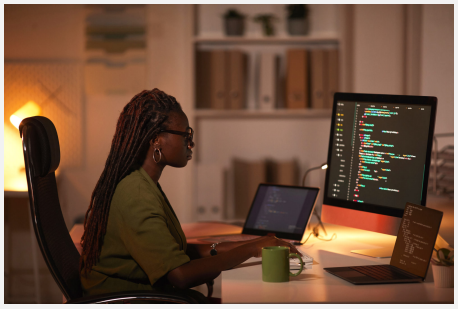
Different program delivery models could be explored
Indeed, high attrition rates and the resource-intensive nature of hands-on training were noted as significant barriers. These findings underscore the need for alternative approaches to experiential learning that maintain educational efficacy without the extensive resource demands of traditional practicums.

Critical gaps highlighted
This was particularly the case in the career trajectory for students post-completion. Although there was acknowledgment of the growing importance of data analytics in healthcare, a clear and defined career path for graduates remained elusive. Indeed, while many of the participants were interested in learning about AI and its integration into the healthcare industry, they also expressed apprehension in doing so. This has implications for curriculum developers and career services at educational institutions, who must work to better align program outcomes with market needs and opportunities. For example, students coming from health care indicated that their knowledge and appreciation of health care was low, although their understanding and appreciation of digital/data issues was rated even lower.

The program successfully targeted students interested in a career in healthcare
Almost all of the students indicated that they were interested in pursuing the final-semester practicum, although as described in the next session, not all of these students ultimately decided to pursue this experience. When asked about their career aspirations, and how their selection of the Digital Health and Data Analytics program fit into their plans, the most-often expressed views were for aspirations for careers in healthcare administration and industry. In general, research was not identified as prominently in future career plans except for those who came with a background in digital/data. Those with healthcare backgrounds only did not identify research as a career goal.

Why It Matters

The insights from the evaluation of this program have significant implications for policy and practice, extending well beyond the confines of the specific project. The findings underscore the necessity for educational programs in healthcare to adapt to the evolving landscape of digital technology and big data. This adaptation is crucial not only for improving the skills of current healthcare professionals but also for shaping the curriculum of future educational programs in the sector.



State of Skills:
Digital Tools in the Skills Ecosystem

The necessity for healthcare workers to be well-versed in digital and data analytics techniques has broader implications for workforce development policies
There is a clear indication that the healthcare sector must not only focus on recruiting individuals with these skills but also on continuously training existing staff to keep pace with technological advancements. This could lead to increased investments in continuous professional development and might encourage healthcare institutions to forge partnerships with educational and technological organizations.

Significant Implications for our education systems
The lessons learned from this project have far-reaching implications for educational policy and practice across multiple sectors. They advocate for a more responsive educational system that can quickly adapt to technological advancements and prepare students effectively for the evolving demands of the job market. This approach not only benefits the healthcare sector but can also serve as a blueprint for other fields undergoing rapid technological changes.

There is considerable promise in the role digital tools and virtual career services can play in improving access to training and career development, particularly for those with geographic barriers or constraints such as family care or other work responsibilities.

Read Thematic Report

Have questions about our work? Do you need access to a report in English or French? Please contact communications@fsc-ccf.ca.

How to Cite This Report
Brown, C.-M. (2024). *Project Insights Report: Evaluation of an Upskilling Program for Jobs in Digital Health and Data Analytics*. The Michener Institute of Education. Toronto: Future Skills Centre. https://fsc-ccf.ca/projects/evaluation-upskilling-program/

Funded by the Government of Canada's Future Skills Program

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Evaluation of an Upskilling Program for Jobs in Digital Health and Data Analytics is funded by the Government of Canada's Future Skills Program. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.