

The Road Less Travelled: Alternative Pathways for Teacher Candidates

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Abstract: Teacher preparation in Canada and the United States has traditionally relied on residency-based degree programs which often exclude candidates who are unable to leave their communities or jobs for multi-year, on-campus training. This research examined the effectiveness of an alternative online teacher preparation model. Cape Breton University's accelerated online Bachelor of Education program, launched in 2024, expanded access for underserved candidates. Quality assurance metrics indicated that the online format and accelerated pace of Cape Breton University's program did not negatively impact the academic or professional success of its graduates compared to those from traditional programs. The findings underscore that online pathways are equally effective and promote greater equity and access in the teaching profession.

Keywords: alternative pathways, instructional design, online learning, teacher certification, teacher training barriers



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<https://doi.org/10.55667/10.55667/ijede.2025.v40.i2.1384>

Une voie moins fréquentée : parcours alternatifs vers la profession enseignante

Résumé : La formation des enseignants au Canada et aux États-Unis repose traditionnellement sur des programmes diplômants en présentiel, de type résidentiel, qui excluent souvent les candidats dans l'impossibilité de quitter leur communauté ou leur emploi pour suivre une formation universitaire sur campus sur plusieurs années. Cette recherche examine l'efficacité d'un modèle alternatif de formation des enseignants entièrement en ligne. Le programme accéléré de baccalauréat en éducation en ligne de la Cape Breton University, lancé en 2024, a permis d'élargir l'accès à la formation pour des candidats issus de publics sous-desservis. Les indicateurs d'assurance qualité montrent que le format en ligne et le rythme accéléré du programme de la Cape Breton University n'ont pas eu d'incidence négative sur la réussite académique ou professionnelle de ses diplômés, comparativement à ceux issus de programmes traditionnels. Les résultats soulignent que les parcours de formation en ligne sont tout aussi efficaces et contribuent à promouvoir une plus grande équité et un meilleur accès à la profession enseignante.

Mots-clés : parcours alternatifs ; ingénierie pédagogique ; apprentissage en ligne ; certification des enseignants ; obstacles à la formation des enseignants.

Introduction

Teacher-preparation programs have traditionally combined on-campus instruction with K–12 practicum placements (Becker et al., 2015). Alternative models have emerged to meet evolving needs. For example, in 2024, Cape Breton University in Nova Scotia piloted an 8-month accelerated online Bachelor of Education program, followed by a 12-month residency-based version (Cape Breton University, 2023a; Pottie, 2023). Similarly, in 2010, The Ohio State University launched the Intensive Pedagogical Training Institute (IPTI) and the Alternative Resident Educator Institute (AREI) to address local teacher shortages (The Ohio State University, n.d.). In both cases, potential teacher candidates were identified who could not be adequately served by traditional residency-based programs. This research examined the rationale behind these alternative certification pathways, the barriers to teaching they aimed to overcome, and their impacts on graduate competency, compliance with local certification standards, and participant satisfaction.

Literature Review

The Need for New Teacher Preparation Models

Innovative approaches to teacher training in Nova Scotia and Ohio have recently challenged traditional models to meet local needs. With approval from the Nova Scotia Department of Education, Cape Breton University temporarily moved its residency-based Bachelor of Education program online during the COVID-19 pandemic (Power & Kay, 2023; Power et al., 2023), becoming the only

Canadian university to graduate a Bachelor of Education cohort entirely online. In 2023, Cape Breton University and the Province introduced an intensive 8-month online Bachelor of Education program combining synchronous and asynchronous delivery with on-site practicums, aimed at preparing teacher-candidates for the 2024–2025 school year (Cape Breton University, 2023a; Pottie, 2023). A 12-month on-campus version followed in May 2024. After a successful review, the online program was renewed for a second intake in January 2025 (Ayres, 2024; Cape Breton University, 2024). These efforts echoed The Ohio State University’s 2010 launch of the IPTI and AREI, funded by the United States Department of Education to “recruit, train, and retain nontraditional teachers, as well as to expand nontraditional pathways to teaching in high-need and hard-to-staff school systems” (The Ohio State University, 2007).

Traditionally, residency requirements have been mandated to ensure quality control and adequate training in background knowledge and pedagogical skills (Becker et al., 2015). Power and Kay (2023) and Power et al. (2023) showed how faculty at two Canadian universities were supported in using online teaching technologies during the COVID-19 pandemic, leading to innovative pedagogical approaches that met—or exceeded—the needs of students and quality control regulators. These changes improved the efficacy and accessibility of learning, despite the absence of on-campus residency by:

- Permanently shifting courses to either entirely online, hybrid, or synchronodal delivery models
- Meaningfully integrating differentiated pathway options

- Increasing opportunities for student-to-student and student-instructor collaboration
- Integrating authentic, problem-based learning and assessment approaches

Overcoming Barriers to Access

Residency-based teacher-preparation programs often create barriers to entering the profession. For example, The Ohio State University (2007) reported that “in urban and rural districts with high percentages of poverty, teacher shortages are common,” and administrators may hire college graduates with subject knowledge but no training in pedagogy. The Ohio State University (2007) also noted that traditional on-campus programs limit access for “recent college graduates, workers changing careers, and paraprofessionals”—barriers that alternative formats can help overcome. The IPTI and AREI programs enable prospective educators to remain in their communities, working in schools under principal supervision while completing certification online (The Ohio State University, n.d.). Certification is overseen by IPTI and AREI, with full licensure granted by state regulators through a process comparable to traditional pathways.

In Nova Scotia, teachers and unions have raised concerns about rising student enrolment (Thomson, 2023). In 2023, the provincial government partnered with Cape Breton University to launch two accelerated teacher-preparation programs. Education and Early Childhood Development Minister Becky Durham cited the need to “respond to our growing population, support

teachers already in the system and meet the needs of students across the province” (Cape Breton University, 2023a). She described Cape Breton University’s programs as “new ways to offer the same high-quality bachelor of education program . . . in a shorter amount of time to help get teachers into classrooms faster” (Cape Breton University, 2023a). While the 12-month on-campus program targeted traditional candidates, the 8-month online version opened full-licensure opportunities for temporary teachers already working in Nova Scotia classrooms. As in The Ohio State University context, these candidates had subject expertise but lacked full certification—and could not easily leave their positions for extended on-campus study. Cape Breton University’s Dean of Education and Health, Dr. Ellyn Lyle, emphasized that candidates would complete “the same programming . . . the same courses, same course content . . . and same practicum hours” while continuing to work (Pottie, 2023). Education Minister, Brian Wong, added that “by rotating through on eight months or students finishing in one year, that doubles the capacity of people that we can get into the workforce” (CBC News, 2024).

Perceptions of Competence and Satisfaction

State and Provincial Program and Teacher Accreditation Standards

As Becker et al. (2015) noted, residency requirements are often rooted in perceptions of necessity for quality control and professional competency. Yet, no public objections were raised to the online delivery of Cape Breton University’s accelerated program. Instead, some stakeholders expressed concerns about its shortened duration. For example, Nova Scotia Teachers Union

president Ryan Lutes questioned whether “the students coming out of that 8-month program may not be as prepared as they would have been if they were in it for longer” (Pottie, 2023).

In both Nova Scotia and Ohio, teacher licensure is governed by strict provincial or state criteria that apply to candidates in any program format, regardless of duration (Province of Nova Scotia, n.d.; Ohio State Board of Education, n.d.). Discussing the launch of the IPTI and AREI programs, The Ohio State University professor Belinda Gimbert noted that preliminary pilot data showed “little difference in performance” on state licensure tests between “traditionally trained teachers and those who participated in the . . . program” (The Ohio State University, 2007). However, she emphasized that a formal, independent “program evaluation piece is missing” and that such an examination is needed for “quality indicators that gauge both the process and outcomes of nontraditional teacher preparation programs” to “assure impact on student achievement, as well as beginning teacher instructional delivery” (The Ohio State University, 2007).

While the IPTI and AREI programs are not credit-bearing or part of The Ohio State University’s formal teacher training, they are approved alternative certification pathways (Ohio State Board of Education, n.d.; The Ohio State University, n.d.). In contrast, both of Cape Breton University’s new programs are degree-granting and subject to university, provincial, and regional accreditation oversight (Cape Breton University, 2025; Maritime Provinces Higher Education Commission, n.d.). They must meet the same standards as Cape Breton

University's previous on-campus programs and undergo both internal and external quality assurance reviews. As a condition of continued accreditation, an external review followed the completion of Cape Breton University's 8-month online pilot (Kotsopoulos, 2024). Such reviews highlight program strengths and weaknesses, including alignment with quality assurance requirements (Cape Breton University, 2022; Crawley, 2019). Kotsopoulos' (2024) review included a side-by-side examination of the curricula and assessment activities of Cape Breton University's on-campus and online Bachelor of Education programs, as well as surveys and focus group discussions with the online program's students, core and adjunct faculty, program and university administrators, and key community stakeholders.

External regulatory requirements, along with alignment in course credit hours, topics, and instructional faculty noted by Dr. Ellyn Lyle (Pottie, 2023), allow for direct comparison of candidate performance across Cape Breton University's Bachelor of Education cohorts. Clark (1994a; 1994b) argued that when content and instructional format are consistent, introducing new instructional media (e.g., online technologies) should not affect student achievement. Kozma (1994a; 1994b) countered that new media enable innovative pedagogical approaches, potentially enhancing learning. Power and Kay (2023) and Power et al. (2023) demonstrated how Cape Breton University faculty, led by the School of Education and Health, leveraged online technologies during the COVID-19 pandemic to create enriched, supportive learning environments. This enables direct comparisons of academic performance between the 8-month and

15-month online cohorts and earlier residency-based cohorts, to assess differences in foundational professional competencies.

Teachers' Perceptions of Self-Efficacy

Another measure of teacher preparation effectiveness is the self-efficacy of graduates, or confidence in their competency with specific skills. The Sense of Efficacy Scale (TSES), used by The Ohio State University and developed by Tschannen-Moran and Woolfolk Hoy (2001a; 2001b), is a well-established tool for gauging teacher candidates' perceived self-efficacy. The TSES measures confidence in instructional strategies, student engagement, and classroom management. Previous studies by Benton-Borghi (2006), Power (2015; 2024), Power et al. (2014), and Power et al. (2016) used variations of the TSES to assess self-efficacy differences between control groups and those with specialized training. The TSES can help determine if graduates from different program formats feel confident to undertake their new teaching roles.

Seamless Learning Education Design Elements

One tool for examining the alignment of an online program with the needs of teacher candidates is the Seamless Learning Education Design (SLED) framework. The SLED framework guides learning across location, context, technology use, and real-world connections (Hambrock et al., 2020; De Villiers & Hambrock, 2023). It focuses on five aspects that contribute to quality assurance: Core, Positive, Practical, Human, and Design (De Villiers & Hambrock, 2023). Hambrock et al. (2022) used SLED to analyze instructional design impacts on online learning experiences in 10 countries during the COVID-19 pandemic. Their

quantitative study revealed differences along the five SLED aspects, particularly regarding technology use and connecting learners to real-world contexts, which impacted student satisfaction. Attention to SLED's Core aspect helps create a student-centred learning experience promoting self-direction and critical thinking. The model emphasizes leveraging technology for scholarship, collaboration, and connection with experts. In addition, while the Positive aspect stresses scaffolding and support, the Design aspect integrates pedagogical approaches to maximize engagement, as seen in Cape Breton University's transition to online teaching. The Human aspects focus on individual background skills, prerequisite training to fully engage in teaching and learning, cultural norms, general mindset, and overall positive outlook. The Practical aspects focus on barrier-free access, including required technologies and support. In the case of The Ohio State University IPTI and AREI, and the Cape Breton University online programs, students self-identify for participation in online learning, which was often linked to higher intrinsic motivation, technical skills, and access to necessary tools (Aloka et al., 2023; Kellam et al., 2025). Program designers may need less direct technical support in these cases (Wagiran et al., 2022).

Additional Success Factors

Several factors may impact the success of adult learners pursuing professional credentials through an accelerated online format. Koehler (2023) highlights the importance of intrinsic motivation, noting that adult learners have psychological needs for autonomy, competence, and relatedness, and motivation is fostered when these needs are supported. Both the Cape Breton

University and The Ohio State University-affiliated online programs target participants needing flexible ways to align personal goals and professional contexts with certified competencies (Cape Breton University, 2023a; 2024; The Ohio State University, n.d.; 2007). This demographic context likely contributes to the higher intrinsic motivation required for success in alternative delivery formats.

Cape Breton University's 8-month online program was designed to meet the needs of participants already in the Nova Scotia teaching workforce. Many applicants, as noted by Cape Breton University (2023a) and Pottie (2023), held temporary teaching licences and had teaching experience, which contributed to students' intrinsic motivation within their studies by linking training with lived experience. Teachers' prior experience influences their confidence in professional competency. For instance, Graham et al. (2020) found that while teachers in their first three years of practice exhibit high competence, those with four to five years' experience may experience a decline. They highlighted the importance of mentorship and professional development in maintaining competence in areas such as student engagement, instructional strategies, and classroom management, which are measured by the TSES. This combination of prior experience and formal training may enhance perceived competence. However, classroom changes since Graham et al.'s (2020) study, including shifts in student engagement due to digital technologies and the COVID-19 pandemic, must also be considered. Recent polls show declines in student engagement post-pandemic, particularly as Gen-Z students interact more with digital media

(Hrynowski, 2024; Manni, 2025). This trend, coupled with learning loss and mental health impacts from COVID-19 (Bennet, 2023; Barbour, 2024), could affect teacher candidates' self-efficacy, especially for those with prior classroom experience.

Statement of the Problem

The research explores how alternative pathways to teacher certification impacted candidates' experiences and readiness to become classroom teachers. This includes examining core program learning outcomes and graduates' self-efficacy perceptions as teaching professionals (Tschannen-Moran & Woolfolk Hoy, 2001a; 2001b), as well as the accessibility, equity, and seamlessness of the learning experiences.

Research Questions

1. *What is the impact of using alternative pathways to certification on the competency of new teacher candidates?*
 - a. *Is there an impact on academic performance during teacher preparation training?*
 - b. *Is there an impact on teacher candidates' perceptions of self-efficacy?*
2. *What are the impacts of using alternative pathways to certification on access to careers in the teaching profession?*

Significance of the Research

This research assessed the effectiveness of alternative teacher preparation pathways in addressing the demand for qualified K-12 teachers. It aimed to determine whether these programs can produce competent graduates

and meet the needs of candidates unable to pursue traditional, residency-based programs.

Methodology

Examining Teacher Candidate Competency

Teacher candidate competency was explored using three methods. First, the academic performance of candidates in Cape Breton University's 8-month accelerated online Bachelor of Education program was compared to that of candidates in the university's online 15-month residency-based cohorts during the COVID-19 pandemic and more recently, to identify differences in coursework performance. This analysis utilized existing data from Cape Breton University (2023b) and the Government of Canada (2023).

Second, an external review of Cape Breton University's 8-month pilot program was examined, assessing its alignment with Nova Scotia's teacher preparation and certification requirements.

Third, a survey based on The Ohio State University's TSES (Tschannen-Moran & Woolfolk Hoy, 2001a; 2001b) measured participants' self-efficacy as teachers. Candidates in Cape Breton University's 2023–2024 15-month residency cohort and 2024 accelerated online cohort completed the survey via Microsoft Forms (Microsoft, 2025b). Results were compared to identify differences in self-efficacy perceptions based on program format.

Examining Impacts on Student Experience and Access to the Teaching Profession

A mixed-methods approach was used to explore the impacts on student experiences and access to teaching career opportunities. First, faculty and program administrators at Cape Breton University and The Ohio State University completed a survey based on the SLED framework (Hambrock et al., 2020; 2022). Second, teacher candidates in Cape Breton University's 2023–2024 residency-based program and its 2024 accelerated online program were invited to complete a survey on the SLED domains. The survey included both fixed-response and open-response questions to gather qualitative feedback on their program experiences.

Participant Selection

Participants in this research included students in alternative pathway teacher preparation programs at Cape Breton University, as well as faculty and program administrators from Cape Breton University and The Ohio State University. Student participants were recruited via a survey invitation sent to all students enrolled in Cape Breton University's 2024 8-month accelerated online Bachelor of Education program. For comparative data, survey invitations were also sent to students in Cape Breton University's 2023–2024 (15-month) on-campus Bachelor of Education program. Faculty and program administrators were invited to participate through an email survey sent to those affiliated with teacher preparation programs at Cape Breton University and The Ohio State University.

Results

Teacher Candidate Competency

Candidates' Perceptions of Self-Efficacy

One method of examining the competency of graduating teacher candidates' involved analyzing their self-reported perceptions using the TSES survey (Tschannen-Moran & Woolfolk Hoy, 2001a; 2001b). A total of 39 survey responses from Cape Breton University were received, with one incomplete. Of these, 21 responses were from the 2023–2024 15-month residency-based Bachelor of Education cohort and 16 were from the 2024 8-month accelerated online Bachelor of Education cohort. Table 1 summarizes the aggregated average scores for Student Engagement, Instructional Strategies, and Classroom Management across Cape Breton University's Bachelor of Education cohorts.

Table 1: TSES Self-Efficacy Domain Scores

TSES Scoring	2023–2024	2024	t-Value	p-Value
	15-Month Residency	8-Month Online		
Efficacy in Student Engagement	7.21	6.30	5.7225	< 0.01*
Efficacy in Instructional Strategies	7.18	7.03	0.7694	0.4468
Efficacy in Classroom Management	6.93	7.00	-0.4041	0.6886

* Indicates a statistically-significant difference.

The largest difference in self-efficacy scores was in the domain of Student Engagement, where candidates from Cape Breton University's 2024 8-month online cohort scored an average of 6.30 (out of 9), compared to 7.21 for the 2023–2024 15-month residency-based cohort. A two-sample t-test showed that with a t-value of 5.7225 and a p-value < 0.05, candidates from the 8-month online program reported significantly lower self-efficacy in Student Engagement. No statistically significant differences were found between the two cohorts for Instructional Strategies or Classroom Management, as both p-values were > 0.05.

Per-Course Academic Performance

This stage of examining the competency of graduating teacher candidates involved analyzing internal quality assurance measures. This included reviewing the academic performance of candidates in recent Bachelor of Education cohorts at Cape Breton University. Aggregated per-course averages for 12 core courses were calculated for each cohort, along with overall cohort averages across all courses. These averages were then analyzed for statistically significant differences between the performances of teacher candidates in the 2020–2021 online (COVID-19 pandemic-era) and 2024 8-month accelerated online cohorts, compared to the 2023–2024 15-month residency-based cohort.

A total of n=2,680 anonymized final grade records were analyzed for 269 students over a total of 16 academic terms, for the period from May 2020 to August 2024. The aggregated average scores and standard deviations for each cohort are provided in Table 2.

*Table 2: Aggregated Core Course averages of Cape Breton University
Bachelor of Education cohorts (2020–2024)*

Cohort	nStudents	nCourseRecords	Aggregated Average	Standard Deviation
2020–2021 (Pandemic Online)	43	591	91.9	5.667
2021–2022 (15-Month Residency)	57	217	91.8	7.132
2022–2023 (15-Month Residency)	65	570	91.9	5.962
2023–2024 (15-Month Residency)	62	833	91.6	8.106
2024 (8-Month Online)	42	469	91.6	5.664
Totals	269	2,680		

The largest difference between average per course scores was 11.6% for Curriculum and Instruction of Elementary English Language Arts II, with a high score of 94.6% for the 2024 8-month accelerated online cohort and a low score 83.0% for the 2022–2023 15-month online residency-based cohort. The average difference in per-course scores across all core courses and cohorts was 5.1%. While the 2023–2024 15-month residency-based and 8-month accelerated cohorts had the lowest overall average scores for the core courses, the difference between the highest score (91.9% for the 2020–2021 online pandemic cohort) and the lowest score (91.6% for the 15-month residency and 8-month online cohorts) was equal to 0.3%.

Table 3 displays the standard deviations for the average scores across 12 core courses and their overall average scores, for the 2023–2024 15-month

residency-based cohort, the 2020–2021 pandemic-era online cohort, and the 8-month accelerated online cohort of Cape Breton University’s Bachelor of Education program. It also presents t-scores (standard deviations from the sample mean) and p-scores (probability of random results) for the differences between the residency-based cohort and each online cohort. Microsoft Excel (2025a) was used to conduct Welch’s two-sample t-tests (Derrick & White, 2016; Knapp et al., 2016; Welch, 1951) to assess the significance of differences in academic performance, accounting for unequal variances, between the 2023–2024 15-month residency-based cohort and the two online cohorts. A 0.3% difference was observed between the aggregated average scores of the 15-month residency-based cohort (91.6%) and the online pandemic-era cohort (91.9%), but t-test results showed no significant difference ($p = 0.438$).

Table 3: Significance Levels of Differences Between 2023–2024 15-Month Residency-Based, 2020–2021 Pandemic Online, and 2024 8-Month Accelerated Online Cohort Academic Performances

Subject	2023–2024-Residency-Based Cohort vs Pandemic Online Cohort				2023–2024-Residency-Based Cohort vs 8-Month Online Cohort		
	SD15 month	SDPandemic	tPandemic	pPandemic	SD8 month	t8 month	p8 month
Assessment of and for Learning	4.738	4.738	-4.110	< 0.01*	4.262	-2.091	0.039
Curriculum and Instruction of Elementary Science	4.738	3.060	-0.829	0.410	1.139	4.973	< 0.01

2023–2024-Residency-Based Cohort vs Pandemic Online Cohort

2023–2024-Residency-Based Cohort vs 8-Month Online Cohort

Subject	SD15 month	SDPandemic	tPandemic	pPandemic	SD8 month	t8 month	p8 month
Principles and Practice of Elementary Education	3.751	3.330	-3.738	< 0.01*	6.624	3.532	< 0.01*
Teaching and Learning in the Complex Classroom	4.776	7.317	-0.666	0.507	6.381	-1.762	0.082
Foundations of School Health Education and Wellness	5.085	5.179	-1.270	0.225	3.683	-1.330	0.210
Curriculum and Instruction of Early Numeracy and Pedagogy (P-3)	6.493	3.255	-1.257	0.214	6.487	-1.343	0.185
Curriculum and Instruction of Upper Elementary Numeracy and Pedagogy (4-6)	7.929	6.689	-1.045	0.300	7.874	-0.607	0.547

2023–2024-Residency-Based
Cohort vs Pandemic Online Cohort

2023–2024-Residency-
Based Cohort vs 8-Month
Online Cohort

Subject	SD15 month	SDPandemic	tPandemic	pPandemic	SD8 month	t8 month	p8 month
Principles and Practice of Secondary Education	8.742	5.259	-4.555	< 0.01*	5.788	-0.065	0.948
Inclusive Education I	8.961	5.198	0.008	0.994	5.616	-1.717	0.089
Inclusive Education II	6.175	7.074	5.870	< 0.01*	6.367	1.110	0.268
Curriculum and Instruction of Elementary English Language Arts I	6.004	2.542	3.180	< 0.01*	4.986	1.540	0.129
Curriculum and Instruction of Elementary English Language Arts II	7.356	5.615	0.742	0.461	4.353	-2.360	0.022
Aggregated Average	8.106	5.667	-3.031	< 0.01*	5.664	1.569	0.117

* Indicates a statistically-significant difference.

Although no statistical significance was found between the aggregated averages for the 15-month residency-based cohort and the 8-month online

cohort ($p = 0.117$), the 8-month online cohort out-performed the residency-based cohort in one course. The online pandemic-era cohort performed better than the 15-month cohort in five courses.

External Pilot Program Review

The next phase of examining teacher candidate competency involved analyzing the findings of an external review of Cape Breton University's 8-month accelerated online pilot program. External reviews typically assess program strengths and weaknesses in relation to regulatory requirements and competitors (Cape Breton University, 2022; Crawley, 2019). In this case, the review found the program to be "of very high quality" and highlighted both its strengths and recommendations for improvement (Kotsopoulos, 2024, p. 3).

Kotsopoulos (2024) found no concerns with academic quality or graduating candidates' professional competency. They found the 8-month program's curriculum outcomes, course descriptions, credit hours, and practicum requirements to be "thorough and consistent with programs . . . in other jurisdictions," as well as with the "Nova Scotia Teacher Education Program Outcomes (Umbrella Curriculum)" for teacher certification (Kotsopoulos, 2024, p. 3). The report noted high student satisfaction, with students expressing no concerns about the quality of their learning and strong support for how access to the online program enabled them to advance their careers from interim to fully-licensed teacher status (Kotsopoulos, 2024, p. 4). The report's recommendations primarily focused on improving program logistics and administration to enhance participants' experiences. These included streamlining

admissions and financing, improving technical platforms (e.g., learning management systems and virtual meeting tools), and optimizing practicum scheduling. Kotsopoulos (2024) suggested scheduling all practicum hours within the regular K-12 school year and allowing school principals to supervise practicum hours as part of candidates' existing temporary teaching contracts to reduce financial hardships.

Kotsopoulos (2024) praised Cape Breton University's 8-month program for meeting local labour market needs, regulatory requirements, and the needs of an underserved teacher candidate population. The author described the program content, structure, and delivery modes as "innovation and forward thinking", reflecting:

a coherent program design that allows for the program objectives and anticipated student outcomes to be achieved, while providing sufficient depth and breadth to meet the standards of quality associated with the credential.
(Kotsopoulos, 2024, p. 4)

Kotsopoulos expressed concern about a recurring comment on "perceptions of the program given the accelerated nature" (2024, p. 5). The author recommended consistent messaging in program advertising, highlighting the use of innovative pedagogies such as an integrated praxis model, and addressing access issues for disadvantaged individuals. Kotsopoulos also suggested emphasizing the program's strong reputation in Nova Scotia, noting applicants are "double vetted through the hiring process" (2024, p. 5).

Examining Impacts on Student Experience and Access to the Teaching Profession

Qualitative data was analyzed for the impacts of alternative teacher preparation formats on overall satisfaction of candidates graduating from Cape Breton University with their studies and their ability to pursue a career in teaching. A total of $n=38$ survey responses were received, including 22 responses from participants in the 2023–2024 15-month residency-based program and 16 responses from participants in the 8-month online program.

Access to the Teaching Profession Survey

The qualitative portion of the student survey included five open-response questions. When asked about their reasons for choosing their program format, six participants from the 8-month online cohort highlighted the accelerated format, with one saying, “the shorter length is what drew me in.” Another commented, “The 8-month program allowed me to complete my Bachelor of Education quickly, as I am a single parent and couldn’t afford a 16-month or 2-year program.” A third stated they “could not take extensive leave from paid employment” and could only complete the program because it was online and 8 months. Four participants from Cape Breton University’s residency-based cohort mentioned the program’s shorter duration compared to other Atlantic Canadian institutions as a key factor, with one noting, “it was shorter than other universities while still meeting admission requirements.” This participant also stated they would have applied to the 8-month online program, but it wasn’t available when they started in May 2023. Participants across cohorts emphasized

that the accelerated nature allowed them to enter the workforce quickly, with one online candidate stating, “[It] provided me with a job directly out of graduation this July.” A 15-month cohort respondent remarked, “The program format allowed me to enter the workforce a year earlier.”

Program Challenges

Participants from each cohort shared challenges related to their program formats. A candidate from Cape Breton University’s 15-month residency-based cohort mentioned financial difficulties, stating, “It has been difficult to meet my family’s needs financially due to the schedule,” while another noted struggles with “not being able to work or having the time/energy to work around the school schedule.” While no financial burdens were reported by Cape Breton University’s 8-month online cohort, one participant commented, “It was a bit stressful to keep up with the quick payments that were due.”

Regarding program logistics, the most common challenges noted by participants from both Cape Breton University cohorts were related to communication. One member of the 15-month residency-based cohort stated that “[s]ome faculty were hard to reach,” while another reported “a lack of communication during practicum between the university, myself, and my associate teacher.” Several respondents from Cape Breton University’s 8-month online cohort expressed frustration over “receiv[ing] timely responses to questions” and “miscommunication,” with one participant highlighting that “[b]eing so compacted, waiting weeks for a reply is detrimental to student success.”

SLED Elements

Six program administrators and coordinators responded to the program administration survey, including five responses from staff affiliated with the IPTI and AREI programs, and one response affiliated with both Cape Breton University's 15-month residency-based and 8-month accelerated online Bachelor of Education programs. Under the SLED framework's Core aspects, most staff from the IPTI and AREI alternative pathway programs noted a lack of networking opportunities for participants and limited chances for research and scholarship. Regarding SLED's Positive aspects, staff cited issues with globalization, real-time interaction, and research opportunities in both programs. All staff mentioned challenges with Practical aspects, such as student access to devices, funding, technical infrastructure, and support. The key Human aspect noted by staff across all programs was the time-consuming nature of program and course design. Neither program reported concerns with the SLED framework's Design aspects, which include knowledge application, assessment, and instructional design.

Discussion

Measures of Quality Assurance

The results of both internal and external quality assurance measures yielded the same conclusions regarding Cape Breton University's alternative pathways for teacher training. The internal quality assurance review compared the academic performance of Cape Breton University's two online Bachelor of

Education cohorts with its most recent 15-month residency-based cohort. While there were statistically significant differences in individual course scores, there were no significant differences in overall averages across 12 core courses between the 15-month residency-based and 8-month accelerated online cohorts. However, the slightly higher aggregated average (0.3%) of the online cohort during the pandemic was found to be statistically significant. This comparison is valid given the identical curricula and largely similar instructional and administrative staff. Neither course duration nor delivery modality negatively impacted candidates' achievement on the curriculum required for teacher certification. External quality assurance data corroborated these findings. An independent review of Cape Breton University's 8-month accelerated online pilot program confirmed its alignment with regulatory requirements and programs at other regional universities (Kotsopoulos, 2024). The review raised no concerns about program quality or academic rigour, highlighting the 8-month program as an innovative model that could address teacher supply needs both regionally and globally.

Participants' Perceptions Competency

Participants' evaluations of their professional competence align with the findings from internal and external quality assurance measures. A total of 37 graduating candidates from Cape Breton University's 2023–2024 15-month residency-based and 2024 8-month accelerated online Bachelor of Education programs completed the TSES survey. All reported "Quite a Bit" of confidence in their abilities under the Instructional Strategies and Classroom Management

domains, with no statistical differences between cohorts. However, the 8-month online cohort reported significantly lower self-efficacy in the Student Engagement domain, with an aggregated score of 6.30 (out of 9), compared to the 15-month cohort's score of 7.21. While participants did not report prior teaching experience, these differences may align with findings from Graham et al. (2020), who observed that early-career teachers show lower competence in classroom management and student engagement as they transition into a more experienced role. Graham et al. (2020) also highlighted the need for ongoing professional development to sustain teacher confidence. Additionally, the online cohort, which had more teaching experience with temporary licences, may have had a more realistic view of the challenges of student engagement, shaped by the "engagement cliffs" and social issues identified by researchers like Hrynowski (2024) and Manni (2025). Their lower self-efficacy in student engagement may therefore reflect practical experience rather than a transitional career phase, as suggested by Graham et al. (2020).

Fulfilment of Mandate

This research combined qualitative and quantitative measures to assess whether the alternative pathway programs met their mandates, particularly in opening pathways for underserved candidates to pursue teaching careers. Participants overwhelmingly appreciated the accelerated timelines, which allowed them to complete their studies and enter the workforce more quickly than programs at other institutions. Teacher candidates in the 8-month program valued the combination of asynchronous materials with evening synchronous

classes, which allowed them to work with temporary licences. As one respondent noted, they “could not take extensive leave from paid employment,” so the online format allowed them to upgrade their qualifications. Kotsopoulos (2024) noted that students did voice frustration with administrative issues such as communication and program requirements, but acknowledged faculty's receptiveness to refining pedagogical approaches and addressing logistical challenges. Kotsopoulos (2024) found that Cape Breton University's alternative pathway program met the mandate of its partnership with the Province of Nova Scotia, providing career access to previously underserved populations. However, they raised concerns about the public's perception of the program and recommended stronger, more consistent messaging on its target audience and alignment with provincial accreditation standards.

Identifying Areas for Improvement with SLED

The SLED framework (Hambrock et al., 2020; De Villiers & Hambrock, 2023) outlines factors affecting student engagement and the application of learning to real-world contexts. A program administrator involved in Cape Breton University's alternative pathway initiative cited the time-consuming nature of program administration and delivery as a potential weakness—echoing Kotsopoulos' (2004) external review and student survey responses that noted administrative, logistical, and communication challenges. The administrator also identified the absence of the “scholarship” element in the SLED framework. However, Atha et al. (2024) argue that undergraduate education programs primarily focus on teacher preparation and certification, with research

opportunities more typical of graduate-level programs. The administrator further noted missing Practical aspect supports, such as funding and technical resources (e.g., Wi-Fi, hardware, and software). Yet, in Cape Breton University's 8-month online pilot, these gaps may be offset by participants' ability to maintain employment. Moreover, as noted by Wagiran et al. (2022), the technical competence and intrinsic motivation of teacher candidates in Cape Breton University's accelerated online program likely minimized the impact of these absences. Student survey respondents also did not identify these issues as challenges.

Program administrators affiliated with the IPTI and AREI programs in Ohio identified time-intensiveness, limited academic scholarship opportunities, and a lack of funding and technical support as potential weaknesses under the SLED framework. They also noted the absence of other SLED elements, including a global program focus and opportunities for real-time engagement with peers or instructors. However, the sole IPTI-affiliated student survey respondent did not indicate that these factors had any positive or negative impact on their program experience or success.

Survey responses from students and administrators reflect strong satisfaction with how Cape Breton University's accelerated online Bachelor of Education program and the IPTI and AREI programs prepare competent teacher candidates. The SLED framework elements identified as "absent" align with student feedback and the external review of Cape Breton University's online

pilot, highlighting the need to streamline non-academic aspects such as program administration and communication.

Limitations

Although previous or current teaching experience under a temporary licence was required for admission to Cape Breton University's 8-month accelerated online Bachelor of Education program, this research did not assess the actual extent of candidates' prior teaching experience. Consequently, it is not possible to definitively determine the reasons for their self-reported lower levels of self-efficacy in the domain of student engagement.

While this research confirmed that the quality assurance of Cape Breton University's alternative pathway programs is comparable to its traditional residency-based offerings and similar programs, it did not explore the impact of participation in these alternative pathways on ongoing teacher recruitment efforts or long-term teacher retention after entering the profession.

Conclusions and Recommendations

Perceptions of the need for on-campus instruction in teacher training have shifted since the COVID-19 pandemic, during which programs like Cape Breton University's Bachelor of Education successfully transitioned to online delivery. Since 2007, two alternative pathway programs affiliated with The Ohio State University—IPTI and AREI—have built on the effectiveness of online models to address teacher shortages and offer certification pathways for non-traditional candidates unable to attend multi-year, on-campus programs. Similarly, the

Province of Nova Scotia identified a need for alternative routes and partnered with Cape Breton University to launch an 8-month accelerated online Bachelor of Education pilot in 2024. Cape Breton University also restructured its residency-based program to a 12-month format, down from 15 months. The partnership's mandate was to provide full certification pathways for teachers working under temporary licences while allowing them to remain employed. The most commonly cited concern was that accelerated delivery might compromise graduate competency.

This research examined the impact of alternative pathway programs on teacher candidates' academic and professional competence compared to peers in comparable online and residency-based cohorts. Internal quality assurance data showed no significant performance differences between candidates in Cape Breton University's online cohorts—including the COVID-19-era and the 8-month accelerated program—and those in its 15-month residency program. An external review of the 8-month pilot echoed these findings, confirming that the alternative model met the same curricular and credit-hour certification standards as regional counterparts. The review praised the program as a replicable model for addressing teacher shortages in Canada and internationally. Participants in the accelerated program reported high satisfaction and comparable professional self-efficacy to residency-based peers. They also valued the flexibility to continue working while earning full credentials more quickly. Findings suggest that Cape Breton University's online accelerated program successfully fulfills its mandate to certify competent teachers from underserved candidate pools. The

primary concern relates to participants' lower self-reported efficacy in student engagement. Further research is needed to determine whether this is linked to program structure, prior classroom experience, or transitional teaching status.

Despite the academic success and professional competence of graduates from Cape Breton University's alternative pathway program, participants reported challenges related to program administration and communication. The external review of the 8-month pilot also flagged these issues but concluded they did not hinder the program's ability to meet its core mandate (Kotsopoulos, 2024). The review recommended streamlining administrative and communication processes, which had already been identified for improvement in future iterations. Administrators from Cape Breton University and The Ohio State University's IPTI and AREI programs also highlighted strengths and areas for growth using the SLED framework. At Cape Breton University, most SLED-related deficiencies were tied to technical logistics unlikely to significantly affect the success of students who choose online professional training.

Recommendations

Based on the findings, the researchers reaffirm the following key recommendations put forth by Kotsopoulos (2024):

1. Continue existing alternative pathway initiatives such as the IPTI, AREI, and Cape Breton University accelerated online teacher training programs.
2. Continue to specifically target potential teacher candidates with existing classroom experience for alternative pathway programs.

3. Emulate the ITPI, AREI, and Cape Breton University accelerated online models to address teacher recruitment issues in other jurisdictions.
4. Streamline program administration and communications with students to enhance their overall learning experiences.
5. Provide careful and consistent public communication about the design, purpose, target audience, and alignment of alternative pathway programs with established regulations and quality assurance benchmarks.

The researchers also recommend:

1. Further research to identify the specific causes of lower perceptions of self-efficacy with student engagement amongst graduates of the Cape Breton University accelerated online Bachelor of Education program.
2. Continued use of the five aspects of the SLED model to ensure that students' learning and support needs are appropriately addressed in alternative pathway programs.

The key recommendation from this research is to continue and replicate alternative pathway models to help meet the growing demand for qualified teachers across various jurisdictions. These models effectively address identified training needs, while improving access to teaching careers for a broader range of candidates.

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We have no conflicts of interest to disclose.