

Preparing Tomorrow's Educators:

Embedding Authentic Online Learning in Teacher Education

Canadian eLearning Network (CANeLearn)



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Image via Gemini Nano Banana

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Abstract

Digital environments and remote collaboration have become established realities across workplaces and professions, and K-12 education online and blended learning models are increasingly being used as alternative learning environments. Despite this shift, most preservice teacher education programs continue to marginalize online pedagogy in favour of traditional face-to-face instruction. Future educators need to experience digital learning environments as learners to understand the specialized competencies required for effective online instruction. Because online learning is a critical mechanism for supporting marginalized and vulnerable student populations, properly preparing teachers for these environments is an educational and moral imperative. Consequently, we call upon teacher education programs and accrediting bodies to mandate supervised online field experiences and dedicated digital coursework within their core requirements to ensure future teacher graduates can effectively support diverse learners in modern educational landscapes.

Introduction

Today's workplace bears little resemblance to that of a generation ago. Remote collaboration, digital project management, virtual communication, cloud-based productivity tools, and artificial intelligence are no longer emerging trends—they are established realities across virtually every profession (National Research Council, 2012; OECD, 2026; World Economic Forum, 2023; Bush, 2026). Schools have a responsibility to prepare students for the future, including the evolving workplaces they will be entering. Teacher education must actively adapt to these workplace transformations to properly prepare future educators and their students. Yet empirical studies continue to show that technology is frequently marginalized within teacher education programs, often confined to isolated modules or reduced to technical skills, rather than embedded within faculty pedagogical practice in subject-specific instruction (Archambault et al., 2026; Hodges et al., 2022; Barbour & Hodges, 2025; Backfisch et al., 2024; Scherer et al., 2021; Tondeur et al., 2025).

Online and Digital Learning Environments Are Not Exceptions

If the COVID pandemic taught us anything, it is that digital learning environments and technologies are critical to continuing education programs in times of school closures. Whether due to weather activity, emergency measures, or disease outbreak, school closures are a regular occurrence. Research by Barbour and Hodges (2025) highlights the stark lack of preparedness among K-12 teachers for emergency closures. This deficit was highly visible during the pandemic's shift to remote teaching, often dubbed "Zoom School" (Barbour et al., 2020). The researchers' analysis revealed continued challenges in implementing effective online learning, including inadequate and inconsistent terminology, along with limited theoretical frameworks. They concluded that teacher preparation for K-12 online learning requires not just learning from past experiences but addressing fundamental issues in research, practice, and policy. The research underpins the need for teacher graduates to become confident online educators by experiencing quality online teaching themselves.

At the same time, enrollment in online blended learning programs (Archambault et al., 2026) reinforces the need for teacher training and experience in those digital learning environments. In Canada, British Columbia now serves approximately 80,000 students, about 12% of all BC students, through sixty-eight online school programs. Ontario, the only province that requires students to complete an online course for graduation, has approximately 450 online school programs serving close to 200,000 students (Barbour & LaBonte, 2024). Across Canada, online and blended learning are part of most, if not all, jurisdictional education programs.

The Challenge

No faculty of education would attempt to prepare classroom teachers without requiring them to spend time in classrooms. Authentic field experiences are considered indispensable because teaching cannot be fully understood through textbooks or lectures alone. Yet when it comes to online learning—a mode of instruction now firmly embedded within Canadian education—most preservice teacher education programs appear willing to substitute explanation for experience.

Imagine applying that logic elsewhere. Would we expect future music teachers to understand musical performance without ever playing in a group? Would we certify physical education or chemistry teachers who had only read about coaching or laboratory skills, never experiencing or practicing them? Experience matters because context shapes professional judgment and wisdom. The lack of those experiences in online and digital learning environments in teacher education programs can leave future teachers unprepared.

Indeed, if any profession has a responsibility to react to a future that has already arrived, as workspaces have transformed in just a few short years, surely it is education. Tomorrow's teachers will shape the learners who will enter an economy increasingly defined by digital competence, adaptability, and continuous technological change. Preparing teachers through traditional instructional models risks sending an unintended but unmistakable message: that learning in digital learning environments is secondary to "real" classroom-based learning.

Teacher Education Programs Must Adapt

Online learning presents challenges fundamentally different from those encountered in face-to-face classrooms. Learning to teach online is not simply a matter of acquiring technical skills. It requires understanding how relationships are built in virtual spaces, how discussions are facilitated asynchronously, how meaningful feedback is delivered digitally, how engagement is sustained without physical proximity, and how technology becomes an integral part of pedagogy rather than an afterthought. Teachers must learn to communicate when body language is absent. They must establish trust through written interaction. They must recognize student disengagement without seeing puzzled faces. They must organize learning that accommodates synchronous discussions, asynchronous activities, multimedia resources, and individualized pacing while maintaining academic rigour and meaningful human connection.

These are not technical skills. They are professional competencies developed through authentic participation in well-designed online learning environments. While many teacher education programs include a course on educational technology, where future teachers are exposed to digital tools or required to complete assignments using online platforms, the approach is not embedded in digital and online environments. Courses about digital technologies are largely conducted in face-to-face classrooms, an approach that confuses familiarity with technology tools for expertise in online pedagogy. Future teachers may graduate having learned about digital technology without establishing online teaching competence. Such competencies cannot be fully developed in traditional classroom settings; experience in the online context is key to shaping professional competencies for teaching in that environment. To ensure beginning teachers enter the profession fully prepared, experienced faculty must explicitly model effective online pedagogy.

The research on student success in online learning environments is conclusive. A recent meta-analysis examining forty-six studies of students' experiences in online learning concluded that effective digital education depends upon intentionally designed learning environments grounded in evidence-based instructional practices (Li et al., 2025). The best way for preservice teachers to understand the learning environment is to be active learners in it, participating in online courses specifically designed for the digital and online learning environments found in K-12 schools. If teacher candidates are expected to design such environments in the future, they should reasonably experience them as learners first.

What Can Be Done?

The Canadian eLearning Network (CANeLearn) researchers continue to draw attention to the need for preservice teacher training for online learning environments. Dr. Michael Barbour's research has found that teacher preparation programs leave many teachers underprepared for the realities of online instruction in today's K-12 schools. Online teaching requires distinctive pedagogical approaches, communication strategies, assessment practices, and methods of student engagement that differ significantly from traditional classroom instruction (Barbour &

Hodges, 2025). The authors argue that such skill training is frequently lacking in both teacher preparation programs and ongoing professional development. Awareness is not enough; action is required. Shifting some required courses to well-designed online options would not only model effective online pedagogy, but expand program access and recruitment.

Faculties of education routinely encourage innovation within K–12 schools, yet seem hesitant to innovate within their own programs. School systems are embracing flexible learning, digital citizenship, artificial intelligence, personalized instruction, and 21st-century competencies. At the same time, teacher candidates are not provided opportunities to learn within the very types of learning environments they may soon be entering. Hodges, Barbour, and Ferdig (2022) argue that every preservice teacher needs to experience online coursework as a learner. The authors emphasize that they must also participate in supervised field experiences within online and blended learning environments. They further contend that accrediting bodies should require such preparation for all teacher education programs.

This is not a fringe recommendation. It represents an emerging consensus among scholars who have spent decades studying digital education. The rationale becomes even stronger when viewed through the lens of student equity. Too often, discussions about K-12 online learning focus exclusively on convenience or efficiency. In reality, online learning has become an important mechanism for expanding educational opportunity. Students with chronic illnesses, physical disabilities, severe anxiety, behavioural challenges, caregiving responsibilities, or geographic isolation depend upon online programs to access educational opportunities unavailable within traditional schools (Basham et al., 2015; Black et al., 2022; Nakunsong, 2024; Valentine et al., 2021).

These learners are not exceptions. They are an increasingly visible and significant part of Canada's educational landscape. Every teacher graduating from a faculty of education will almost certainly encounter students whose learning is supported, supplemented, or entirely delivered through digital learning environments. Should those teachers not understand the unique pedagogical demands of those environments? Failing to train teachers for online environments is ultimately a disservice to these vulnerable student populations. A decade of experience with CANeLearn and online degree programs demonstrates a clear truth: preservice and in-service teachers best learn how to support student success in digital environments by participating as learners in those very spaces.

Conclusion

Online learning is important enough for schools to implement year-round, and to turn to during emergency school closures. Yet, somehow, it is not important enough for future teachers to experience and learn how to teach in these environments. That contradiction lies at the centre of a continuing issue and concern. Often, teacher education programs prioritize traditional face-to-face courses over digital ones for administrative ease rather than pedagogical soundness. That is not simply an administrative choice about course delivery; it is a statement about what universities believe future teachers truly need to know and learn.

The research no longer asks whether online learning has educational value. That debate has largely passed. The more important question has become whether teacher education programs are willing to prepare graduates for the educational environments they will actually encounter, and their future students will enter. Universities frequently describe themselves as centres of innovation, yet genuine innovation is measured not by policy or promotional statements but by everyday decisions and practice.

References

- Archambault, L., Borup, J., Lin, C-H. (2026). Introduction to "From crisis to continuity: Re-examining online teaching and learning in elementary and secondary education". *Computers & Education (in press)*. <https://doi.org/10.1016/j.compedu.2026.105727> (<https://www.sciencedirect.com/science/article/pii/S0360131526001661>).
- Backfisch, I., Sibley, L., Lachner, A., Kirchner, K.T., Hische, C., Scheiter, K. (2024). Enhancing pre-service teachers' technological pedagogical content knowledge (TPACK): Utility-value interventions support knowledge integration. *Teach. Educ.*142, 104532. DOI: 10.1016/j.tate.2024.104532
- Barbour, M. K., & Hodges, C. B. (2025). History Repeats, We Forget: Short Memories When It Comes to K-12 Distance Learning. *Education Sciences*, 15(4), 482. <https://doi.org/10.3390/educsci15040482>
- Barbour, M. K., & LaBonte, R. (2024). State of the nation study: K-12 e-learning in Canada. Canadian eLearning Network. Retrieved from https://k12sotn.ca/wp-content/uploads/2025/05/State_Nation_2024_English.pdf
- Barbour, M. K., LaBonte, R., Kelly, K., Hodges, C., Moore, S., Lockee, B., Trust, T., Bond, A., & Hill, P. (2020). *Understanding pandemic pedagogy: Differences between emergency remote, remote, and online teaching*. Canadian eLearning Network. <https://k12sotn.ca/wp-content/uploads/2020/12/understanding-pandemic-pedagogy.pdf>
- Basham, J. D., Stahl, W., Ortiz, K. R., Rice, M. F., & Smith, S. J. (2015). Equity matters: Digital and online learning for students with disabilities. Center on Online Learning and Students with Disabilities. Available online: https://centerononlinelearning.ku.edu/wp-content/uploads/2017/04/2015_COLSD_Annual-Publication_FULL.pdf
- Black, E. W., Ferdig, R. E., Fleetwood, A., & Thompson, L. A. (2022). Hospital homebound students and K-12 online schooling. *PLoS ONE*, 17(3), e0264841.
- Bush, O. (2026). Distance and e-learning statistics in Canada. Toronto: Made in CA. Retrieved from <https://madeinca.ca/distance-e-learning-statistics-canada/>
- Hodges, C.B., Barbour, M. & Ferdig, R.E. (2022). A 2025 vision for building access to K-12 online and blended learning in pre-service teacher education. *Journal of Technology and Teacher Education*, 30(2), 201-216. Waynesville, NC USA: Society for Information Technology & Teacher Education. <https://www.learntechlib.org/primary/p/221153/>.
- Li, J., Roihan, N., McGravey, M. (2025). High school students' perspectives on their online learning experiences: A systematic literature review. *Journal of Computer Assisted Learning*, (41)4. <https://doi.org/10.1111/jcal.70064>

- Nakunsong, T. (2024). Evolving K-12 Digital Education: Enhancing Flexibility and Access through Online Learning and Virtual Programs. *Journal of Education and Learning Reviews*, 1(5), 1–12. <https://doi.org/10.60027/jelr.2024.791>
- National Research Council. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13398>
- OECD. (2026). *Future of education & skills*. OECD Publishing. Retrieved from <https://gpseducation.oecd.org/revieweducationpolicies/>
- Scherer, R., Howard, S.K., Tondeur, J., Siddiq, F. (2021). Profiling teachers’ readiness for online teaching and learning in higher education: Who’s ready? *Comput. Hum. Behav.* 118, 106675. DOI: 10.1016/j.chb.2020.106675
- Tondeur, J., Trevisan, O., Howard, S.K., Van Braak, J. (2025). Preparing preservice teachers. *Comput. Educ.* 232, 105262. DOI: 10.1016/j.compedu.2025.105262
- Valentine, A., Gemin, B., Vashaw, L., Watson, J., Harrington, C., & LeBlanc, E. (2021). Digital learning in rural K-12 settings: A survey of challenges and progress in the United States. In M. Khosrow-Pour (Ed.), *Research anthology on developing effective online learning courses* (pp. 1987–2019). IGI Global Scientific Publishing.
- World Economic Forum. (2023). *The future of jobs report 2023*. World Economic Forum. Retrieved from <https://www.weforum.org/publications/the-future-of-jobs-report-2023/in-full/>