A Participatory Design-Based Approach to Creating Design Principles for K-12 Online Learning in Canada

Oct 31, 2023

A presentation in the BCCampus

Research Speaker Series

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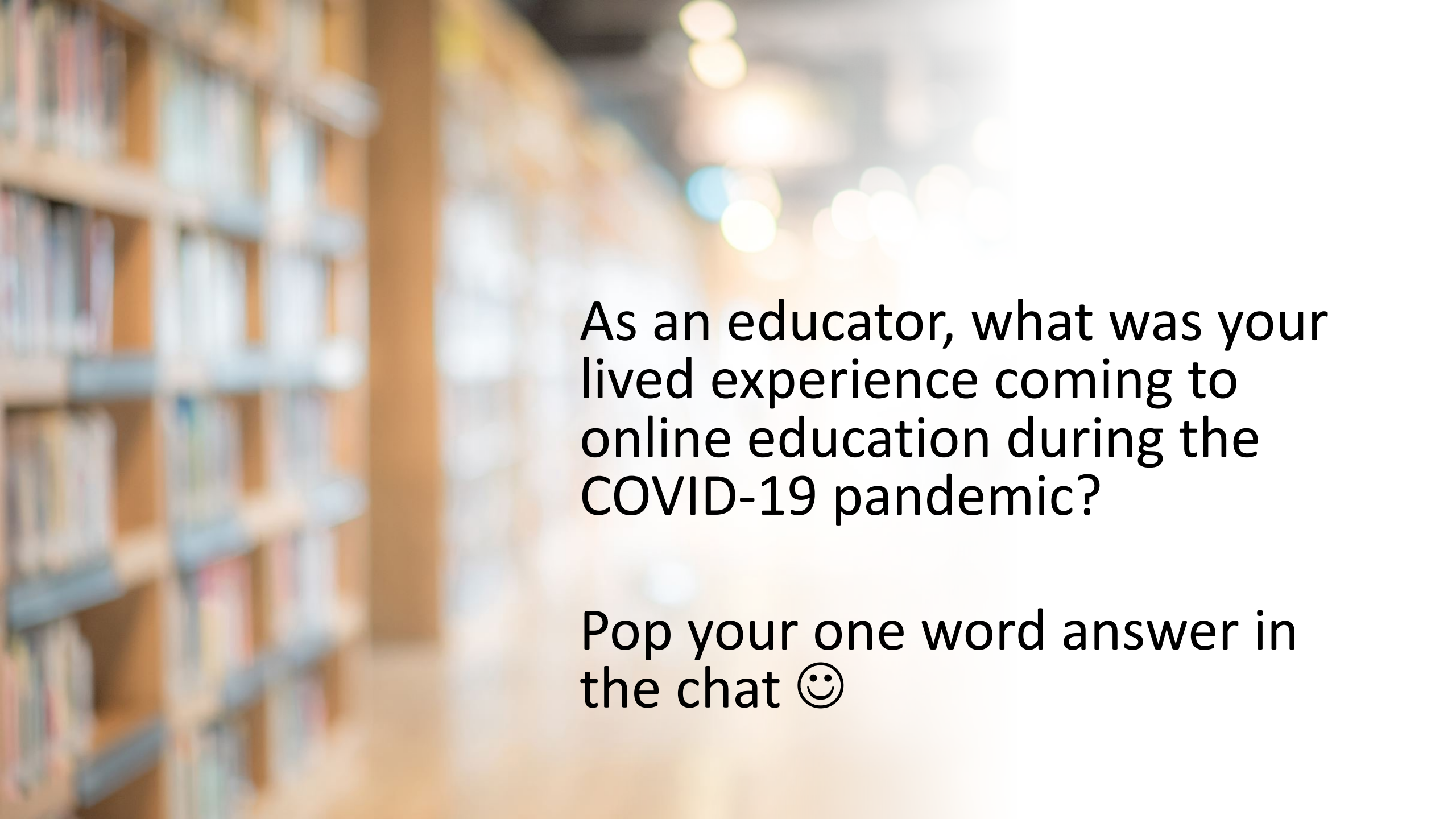UNIVERSITY

Hay'sxw'qa si'em nakwilia

[Hy-sh-kwa sea-em na-kwil-ia]
Thank you my honourable people

We acknowledge the campus is located on the traditional Lands of the Lekwungen speaking Peoples, the Songhees and Esquimalt First Nations.

With gratitude, we live, work and learn here where the past, present and future of Indigenous and non-Indigenous students, faculty and staff come together.

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As an educator, what was your lived experience coming to online education during the COVID-19 pandemic?

Pop your one word answer in the chat ☺

Context & Research Question(s)

Feb 2021– _Design Principles in K-12 Online Learning_ research study conducted as part of the BC MOE Quality Assurance Panel's work.

Nov 2021 – Feb 2022 – _Design Principles for K-12 Online Learning: National Validation St_udy - revisited the initial design principles and tested their efficacy and relevance with a national audience. Focus = _to what extent do the initial design principles for K-12 online learning resonate nationally?_

Nov 2022 – Feb 2023 - expanded initial BC Design Principles in K-12 Online Learning study. Focus = _knowing what we know now at this stage of the COVID-19 pandemic, do the Design Principles for K-12 Online Learning hold up with practicing educators and if so, how are they being used?_
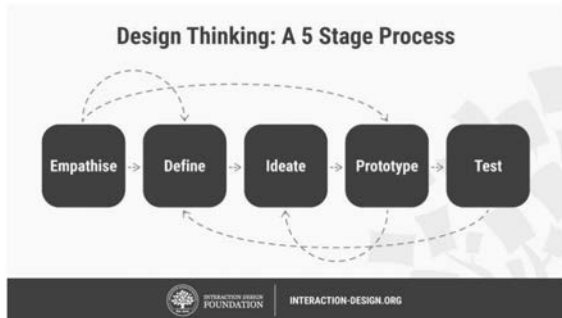
Initial Design Principles Study - Revised Process

Figure 1. Illustration of iterative nature of Design Thinking Process (https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process)

Design Thinking Process – Revised Process				
Empathize	**Define**	**Ideate**	**Prototype**	**Test**
Design Conversations – Participatory Approach				
• Survey 1 to determine demographic information of the group	• Analysis of survey responses to inform Conversation n Groups	• Revise Design Conversation questions / prompts for Survey 2 • Review Design Principles following Design Conversations	• Based on Survey 2 responses, draft initial Design Principles • Revise Design Principles based on Survey 2 respondents' feedback • Revise reporting of the Design Principles based on final survey with Survey 2 respondents	• Invite representative sample of Survey 2 respondents to a Design Conversation of the initial Design Principles • Circulate revised Design Principles for Survey 2 respondents for their feedback

National and Expanded BC Study - Methodology & Data Analysis

- Design thinking cycle and participatory action research

- Analysis:
  - Survey data was analyzed using descriptive statistics and thematic analysis.
  - An inductive coding procedure was used to analyze the data (Glaser & Strauss, 1967; Corbin & Strauss, 2008).

Design Thinking Process – Using National Study process				
Empathize	Define	Ideate	Prototype	Test
Design Conversations – Participatory Approach				
● National study - Survey 1 to CANeLearn board members and their "plus 1s" – in English and French ● Expanded BC study - Survey 1 original list of BC Educators from Phase 1 study and their "plus 1s" – in English	● Analysis of survey responses	● Revision of initial Design Principles based on the analysis of Survey 1 data	● Circulate revised Design Principles to Survey 1 participants and invitation to participate in a series of design conversations. ● Expanded BC Study - Design conversations held with representative groups of Phase 3 research respondents	● Share revised Design Principles and findings through conferences presentations, webinars, articles. ● Continue to share / publish Design Principles and seek feedback

Research Phases, Activities & Participants

Study Title & Focus	Study Phases and Activities	Participants
Initial Design Principles Study February 2021	Survey 1 – Demographic information	150
	Survey 2 – Design Conversation questions adapted for survey participation due to high respondence rate	81
	Design Conversations via ZOOM – participant volunteers from Survey 2 participants / reflecting Matrix groupings	22
	Survey 3 – Follow up commenting on and ranking the Design Principles offered to Survey 2 participants	29
Design Principles National Validation Study November 2021 – February 2022	Survey 1 – Design Principles validation questions (English and French)	58
	Survey 2 – Revised Design Principles for comment. NOTE: CANeLearn to circulate report once it has been received and address comments as it sees fit.	
Design Principles for K-12 Online Learning Phase 3 Research Nov 2022 – Feb 2023	Survey 1 – Demographic information	38
	Design Conversations via ZOOM – participant volunteers from Survey 1 participants / reflecting matrix groupings	20
Total Survey Participants Respondents		356
Total Design Conversation Participants		42

Summary of Survey - Quantitative

- The majority of participants in the National Validation Study and the Expanded BC study were mid-career, high school educators that **identified as expert or distinguished teachers** who specifically applied to teach online, **with little or no formal preparation or supports for online teaching.**

- Several participants in this study appeared to:
    - **conflate proficiency with technology with mastery of online pedagogy** which suggests a lack of understanding of the nuances of good online pedagogy versus manipulation of learning management systems and other software; and,
    - **use interchangeably design principles with UDL** and accessible design for learning.

- Tension expressed by participants between **wanting to develop and contribute to a professional community, and the lack of personal capacity to contribute to this community** in a meaningful way.

Summary of Design Conversations

- **Educators in K-12 online teaching and learning want and need a community.** There is a strong desire to connect with other educators doing this work and to see what is working, share strategies, and discuss how to improve practice.

- Educators who have been doing the work of online teaching and learning for a long time are **engaged and passionate about the field.** They would welcome a chance to speak about the field and to share their lessons learned with others beyond the usual venues of conferences and typical professional development offerings.

- Educators **need ongoing, sustained, and supported professional learning opportunities that model good, research informed practice** and are examples of the design principles in action.

- Educators **need opportunities to understand how research can inform practice,** and professional learning opportunities that make a connection between theory and practice in a meaningful way.

- Educators **need to be supported in their health and wellbeing** as the nature of their work is changing and is increasingly challenging as they support student learning.

- Educator recognition that the **Design Principles for K-12 online learning reflect real world processes and provide a framework** for effective practice.

" My teaching practice changed from the perspective of recognizing that there is a different sense of vulnerability and not only with my students, but with my parents" (Study 3 Participant, 2023).

"if you are a good teacher, you use all principles regardless of context, and I'm just too burnt out to write more on this." (Study 2 Participant)

"You have to be a mini university registrar. You have to be a mini loans officer. You have to do all these things just to function. And so I don't know if our students are adaptable to that. We think they are because they are a new generation. But are they?" (Study 3 Participant, 2023).

this year I've been able to bring a lot of the work that I did last year with online learning support to my classroom and using so much of the digital files that I've created. And yes, they're all in Google. But it's been an amazingly fluid year for teaching, because all my tools aren't in folders and here and there they're all online, and I can easily share it like a link to each of those documents" (Study 3 Participant, 2023)

"They needed those parts (technology and relationships) for them to be in a place to learn well and you grow beyond just content…. How do we continue building relationships [students] when we can't be f2f?" (Study 3 Participant)

I think a lot of us, and we're interested in the idea of you know. How do we support these students? You know personally? And how do we make connections with them in this new, mostly remote kind of situation, where it was a mixed prior. And so, yeah, I a lot of the conversations about what we could do with our courses going forward has been a lot about, you know, relationship building on boarding of students in a way that you know you connect with (Study 3 Participant, 2023)

The design principles "are reflective of real-world processes, it encourages active formative assessment and self-reflection, it accurately embodies the spirit of revision and continuous improvement" (Participant 2023)

Eight Design Principles for K-12 Online Learning

Principle 1 – Educators require ***access to models of effective online teaching and learning*** and a repository of open, curated resources to support their practice.

Principle 2 - Educators ***require ongoing, timely and relevant professional learning opportunities and supports*** that (1) model effective online teaching and learning design principles and (2) are fostered and honed through the development of supportive and flexible learning communities that reflect educators' career cycles and contexts.

Principle 3 - Educators, families, and the school community ***require a deep understanding of the importance of various forms of engagement,*** including how to foster it in learning, teaching, and educational resources.

Principle 4 - Educators and families ***require a deep understanding of ways to enhance relationships and foster connection and relatedness*** with students in academic, intellectual, creative, and social activities.

Eight Design Principles for K-12 Online Learning

Principle 5 – Educators ***require support in understanding that (1) technologies are the enablers of online teaching and learning and (2) the technologies support, not dictate***, effective teaching and learning.

Principle 6 – Educators require ***intentional professional preparation specific to online teaching and learning in post-secondary degree***, certificate, and micro-credential programs that is supported by formal, intentional mentorship programs throughout the educator career cycle.

Principle 7 - Educators ***require ongoing strategic research specific to teaching and learning online to inform both practice and policy*** and contribute to the field of study.

Principle 8 - Educators and the entire school community ***require a system-level focus on health, wellness, and well-being specific to teaching and learning online.***

Recommendations

- Use the Design Principles for K-12 Online Learning to guide the work.

- Create a National Curated Showcase

- Form Online Community of Practice

- Provide specific Professional Learning opportunities

- Establish a Mentorship Model

- Change Pre-service & Professional Development education

- Build and engage in a National Conversation on the Design Principles

- Engaging those with leadership and certification responsibilities in Canadian education to adopt these principles as a way preparing K-12 teachers to be responsive to changes and to be a position to respond rather than react to emerging pressures which as natural disasters, health concerns, etc.

Questions worth asking...

Degree to which educators equate technology competence with online pedagogical experience and expertise?

Degree to which educators fully understand the notion of design principles as an iterative way of making system wide changes in terms of informing policy, practice, funding, technology acquisition / choices, professional learning, teacher education, etc.?

Degree to which practicing educators value research as a way of informing classroom practice? Have we inadvertently created silos around theory and practice and practice informed theory?

Degree to which we have a deep understanding of where change is made, adopted, and adapted within the K-12 ecosystem of learning? Are we asking the right questions of the wrong people or the wrong questions of the right people?

Degree to which the K-12 ecosystem of learning is prepared to embrace blended learning as a way of preparing to future disruptions / changes within the K-12 ecosystem of learning?

Degree to which the K-12 ecosystem of learning has embraced the potential and promise of educational technologies to enhance learning and use it to prepare the system for the next disruptions – climate emergencies, future pandemics, natural disasters, etc.?

Degree to which the K-12 ecosystem recognizes that the fundamental nature of the work has changed and will change more in the near future?

Degree to which post-secondary education, specifically teacher education and graduate education, has recognized the history, role and importance of online and blended learning in Canadian contexts and in preparing for future disruptions to the K- 12 system?

Design Principles for K–12 Online Learning:

Shared Learnings From 3 Years of Conversations With Canadian K–12 Educators

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WHO WE TALKED WITH

Phase 1: Design Principles for K-12 Online Learning BC Study (2020/21)

► Surveys N=260 respondents; Design Conversations N=22

Phase 2: Design Principles for K-12 Online Learning: National Validation Study (2021/2022)

► Surveys N=58

Phase 3: Design Principles for K-12 Online Learning Expanded BC Study (2022/2023)

► 38 Survey participants; 20 Design Conversations

WHAT PARTICIPANTS DID

► Co-generated design principles for K-12 online learning
► Collaboratively commented on contributions of fellow educators across Canada
► Considered national feedback and suggested revisions to the design principles
► Discussed relevance & ways forward in their practice

KEY FINDINGS

► The design principles provide a framework for effective practice & reflect real world processes.
► 71% taught themselves how to teach online.
► 50% received no formal training to teach online.
► 29% felt the DP would help them do their work more effectively.
► Educators want to connect, share, and learn together as their iterate their online practice.
► Online learning offers a new pedagogy and approach that can inform bricks and mortar educational settings.
► Teacher education programs offer little to support online educators in their work.
► The job of the K-12 educator is increasingly complex.
► Increases in anxiety & mental health issues in the school community requires more communication & support.
► Access to appropriate technologies & an increased level of digital literacy is necessary in the contemporary K-12 setting.

FASCINATING FACTS

► Most educators identified as expert or distinguished teachers (Steffy et al., 2002) career stages
► Over 60% of educators specifically applied to teach online
► Relationships, care, and connection with students, parents and educators are at the heart of good online learning

The design principles "are reflective of real-world processes, it encourages active formative assessment and self-reflection, it accurately embodies the spirit of revision and continuous improvement" (Participant 2023)

WHAT THE SHARED LEARNINGS WERE USED FOR

► Creation of initial design principles created by study participants Phase 1: Initial BC study
► Validation of initial design principles – Phase 2: National Study and creation of National design principles
► Expansion of BC study – Phase 2: design principles revisited and stories of implementation shared

DESIGN PRINCIPLES (DP) FOR K–12 ONLINE LEARNING

DP *"represent the accumulated wisdom of researchers and practitioners"* (https://www.interaction-design.org/literature/topics/design-principles).

Principle 1 – Educators require **access to models** of effective online teaching and learning and a repository of open, curated resources to support their practice.

Principle 2 - Educators require ongoing, timely and relevant **professional learning opportunities** and supports that (1) model effective online teaching and learning design principles and (2) are fostered and honed through the development of supportive and flexible learning communities that reflect educators' career cycles and contexts.

Principle 3 - Educators, families, and the school community require a deep understanding of the importance of various forms of **engagement**, including how to foster it in learning, teaching, and educational resources.

Principle 4 - Educators and families require a deep understanding of ways to enhance **relationships and foster connection** and relatedness with students in academic, intellectual, creative, and social activities.

Principle 5 – Educators require support in understanding that (1) technologies are the enablers of online teaching and learning and (2) **the technologies support, not dictate**, effective teaching and learning.

Principle 6 – Educators require **intentional professional preparation** specific to online teaching and learning in post-secondary degree, certificate, and micro-credential programs that is supported by formal, intentional mentorship programs throughout the educator career cycle.

Principle 7 - Educators require ongoing **strategic research** specific to teaching and learning online to inform both practice and policy and contribute to the field of study.

Principle 8 - Educators and the entire school community require a system-level **focus on health, wellness, and well-being** specific to teaching and learning online.

RECOMMENDATIONS:

► Use the eight design principles as a framework to review and inform K-12 jurisdictions as well as post-secondary teacher and graduate education programs.
  • SD embrace principles and contextually adopt them and make them their own.
  • BCTC incorporate the design principles into teacher regulation standards for certification in B.C.
► Create a curated, national shared collection that showcases Canadian models and examples of a variety of ways to use the online environment in teaching and learning.
► Create an online community of practice for K-12 online educators that recognizes time constraints and needs, allowing for the creation of a safe and timely way to learn from one another and see what design principles could look like in practice.
► Offer professional learning opportunities that are timely and reflect the career cycles, experiences, specific needs, and the projected shortfall of K-12 educators in the near-term.
  • Create a mentorship model that supports K-12 online educators and addresses the concerns of wellness, burn out, ergonomics, and stress.
► Promote quality online learning and celebrating the role it plays in many learners' education by engaging with education leaders to guide the determination of quality teaching and learning to help shape teacher preparation and professional development.
  • Leverage the national conversation of K-12 online learning to affect change in the design and delivery of undergraduate education, diploma, and micro-credential programs to recognize the changing work environment of a K-12 educator.
► Engaging those with leadership and certification responsibilities in Canadian education to adopt these principles as a way preparing K-12 teachers to be responsive to changes and to be a position to respond rather than react to emerging pressures and a changing nature of the work of a K-12 educator in Canada.

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Acknowledgments

Questions?

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Reports can be found at:
https://canelearn.net/home/research/projects/