

# AI-Enhanced Professional Learning for Educators



PROBLEM OF  
PRACTICE

## Implementing Universal Design for Learning (UDL) Principles Through Guided AI Interactions

Many educators struggle to effectively implement Universal Design for Learning principles in their classrooms due to limited personalized support and guidance. Traditional professional development often lacks the immediacy and specificity needed to address diverse classroom scenarios, hindering the widespread adoption of inclusive teaching practices.

The initial goal of WCDSB's AI project was to explore how AI could enhance professional learning by providing customized, accessible PL support to educators. WCDSB initially envisioned using AI for creating targeted learning experiences across subjects or topics. Throughout the project, the scope expanded to involve testing with a small group of educators and adjustments based on feedback, focusing on prompt clarity and minimizing AI "hallucinations" through refined prompt structures.



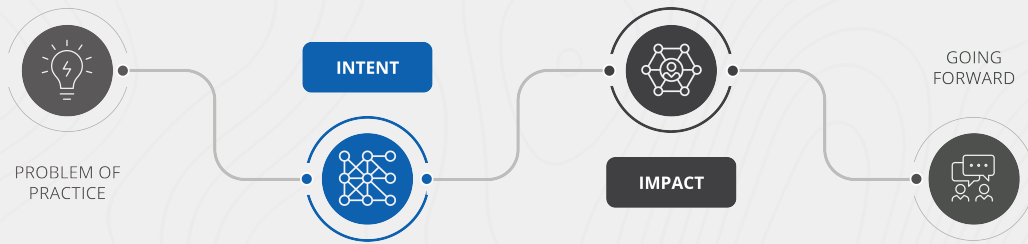
**Waterloo Catholic  
District School Board**  
Quality, Inclusive, Faith Based Education

**District:** Waterloo Catholic District School Board  
**Province:** Ontario  
**Date:** October 2024  
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### AI Enhanced Professional Learning for Educators. Waterloo Catholic District School Board

Integrating AI in Education: Transforming Learning — An AI Use Case Initiative for Canadian Education

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# Intent

- 1. Personalized, On-demand Support:** AI serves as a 24/7 accessible coach, providing educators with immediate, tailored guidance on applying UDL principles to their specific classroom scenarios.
- 2. Structured Interactions:** Through the PREP (Prompt, Role, Explicit instruction, Parameters) model, AI helps educators formulate more effective queries, resulting in more relevant and actionable advice.
- 3. Diverse Scenario Handling:** AI can generate and respond to a wide range of classroom situations, helping teachers prepare for various learning needs and challenges.
- 4. Resource Generation:** AI assists in creating UDL-aligned lesson plans, assessments, and teaching materials, saving time and enhancing the quality of educational resources.
- 5. Reflective Practice:** AI prompts encourage teachers to reflect on their current practices and consider UDL-based improvements, fostering continuous professional growth.
- 6. Scalable Expertise:** AI provides access to UDL expertise that might otherwise be limited by geographical or financial constraints, democratizing high-quality professional development.
- 7. Adaptive Learning:** As teachers interact with the AI, they learn to better articulate their needs and understand UDL principles, improving their ability to implement inclusive practices.
- 8. Continuous Improvement:** AI can analyze patterns in teacher queries and responses, potentially informing future enhancements to the professional development program.

By leveraging AI in these ways, this use case aims to create a more responsive, accessible, and effective system for helping educators implement UDL principles, ultimately leading to more inclusive and effective learning environments for all students."

*"I appreciate how AI can serve as a companion, allowing us to move beyond methods that may have been problematic or ineffective for some students. Instead, AI supports us and our students, acting as a hand-in-hand assistant, perfectly aligning with the principles of Universal Design for Learning."*

Whitney McKinley,  
Student Achievement Consultant  
for Learning Innovation





# Impact

AI significantly impacted learning for educators in their journey to implement Universal Design for Learning (UDL) principles. Simultaneously, Professional Learning (PL) Coaches played a crucial role in enhancing and personalizing the learning experience. Here's how both AI and PL Coaches impacted learning.

## Impact of AI

1. **Personalized Learning:** AI provided tailored guidance based on each educator's specific classroom context and challenges, allowing for more relevant and applicable learning.
2. **Immediate Feedback:** Teachers received instant responses to their queries, enabling rapid iteration and experimentation with UDL strategies.
3. **Expanded Access:** AI offered 24/7 support, allowing educators to engage in professional development at their own pace and convenience.
4. **Diverse Scenarios:** AI generated a wide range of classroom scenarios, helping teachers prepare for various learning needs and challenges they might encounter.
5. **Reflective Practice:** Through structured prompts (using the PREP model), AI encouraged deeper reflection on teaching practices and UDL implementation.
6. **Resource Creation:** AI assisted in developing UDL-aligned lesson plans and materials, directly supporting the application of learning.

## Impact of PL Coaches

1. **Human Expertise:** Coaches provided nuanced insights and contextual understanding that complemented the AI's knowledge base.
2. **Quality Assurance:** They reviewed and validated AI-generated content, ensuring its accuracy and relevance to current educational practices.
3. **Emotional Support:** Coaches offered encouragement and empathy, addressing the human aspects of professional growth that AI cannot fully replicate.
4. **Customized Guidance:** They helped teachers interpret and apply AI-generated advice to their specific school environments and student populations.
5. **Community Building:** Coaches facilitated peer learning communities, fostering collaboration and shared problem-solving among educators.
6. **Bridging Technology and Practice:** They assisted teachers in effectively using the AI tools and translating AI-generated strategies into classroom practice.
7. **Continuous Improvement:** Coaches gathered feedback on the AI system, contributing to its ongoing refinement and enhancement.

## Professional Learning insights

The synergy between AI and PL Coaches created a comprehensive learning environment that combined the scalability and consistency of AI with the nuanced understanding and personalized support of human experts. This dual approach enhanced the depth, relevance, and applicability of the professional development experience, leading to more effective implementation of UDL principles in diverse educational settings.



# Going Forward

GOING  
FORWARD



## What worked well:

- Personalized, on-demand AI support for UDL implementation
- PREP model for structured AI prompting
- Integration of AI and human expertise
- Diverse scenario generation by AI
- AI assistance in creating UDL-aligned resources

## Areas for improvement:

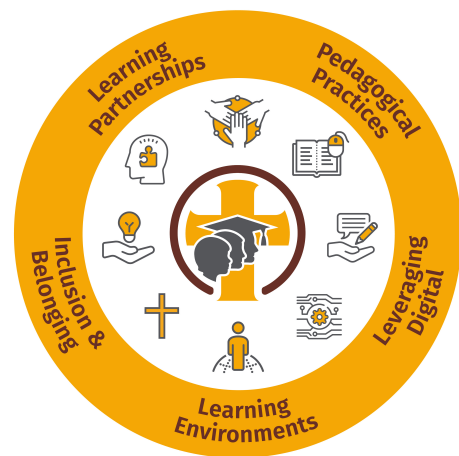
- Enhancing AI's contextual understanding of specific school environments
- Streamlining technology adoption for less tech-savvy educators
- Optimizing the balance between AI support and human coaching
- Developing better long-term impact assessment metrics
- Addressing potential AI biases in responses

## Improving and scaling AI learning:

- Integrate real-time classroom data for more relevant AI advice
- Develop adaptive, personalized learning pathways
- Utilize AI to facilitate peer learning networks
- Create seamless AI-human collaboration tools
- Regularly update AI models with latest UDL research

## Resources created

- [UDL Classroom Observation and Strategies](#)
- [CBC Radio Interview](#)
- [CTV newslink](#)
- [Podcast link](#)
- [Guidelines for WCDSB](#)



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