

Diverse AI Applications in Education and Agriculture



PROBLEM OF PRACTICE

How can agricultural educators effectively integrate AI-powered precision agricultural tools (such as drones, sensors, autonomous vehicles, machine learning and analysis) into curriculum and practice to enhance student learning and prepare students for future careers in modern agriculture? Transforming Agriculture for a better world.



OLDS COLLEGE
OF AGRICULTURE & TECHNOLOGY

Organization: **Olds College of Agriculture & Technology**

Province: Alberta

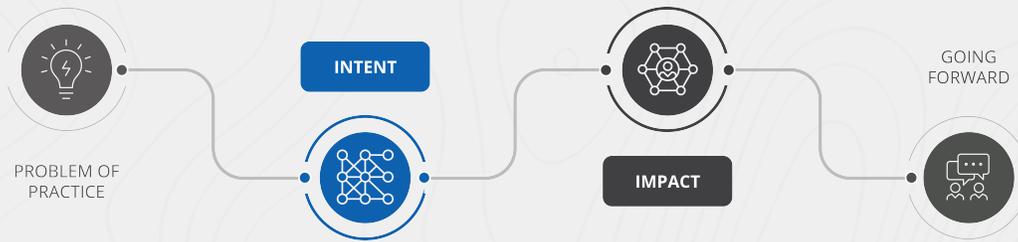
Date: Spring 2025

Lead: Jon Newman, Manager,
Educational Technology and
Learning Commons

Diverse AI Applications in Education and Agriculture. Olds College of Agriculture & Technology

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

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Intent

The intent of this use case is to address three things:

1. Understand how instructors, administrators, and students at Olds College are utilizing artificial intelligence currently;
2. How these groups see artificial intelligence impacting their instruction and learning; and
3. How Olds College, as an institution, might better integrate AI into the courses we deliver to meet industry expectations and provide students with the skills and tools necessary to succeed post-graduation.

In addition, this use-case initiative can showcase that generative AI and other AI tools are just that -tools that can be utilized to assist and enhance the capabilities of our instructors and students' understanding if used in the right ways.

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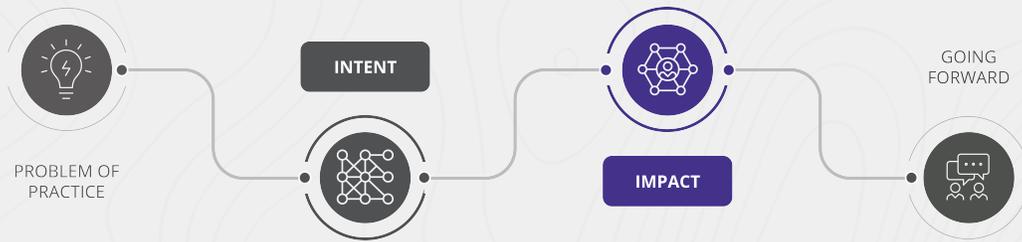
—Jon Newman,
 Manager, Educational Technology
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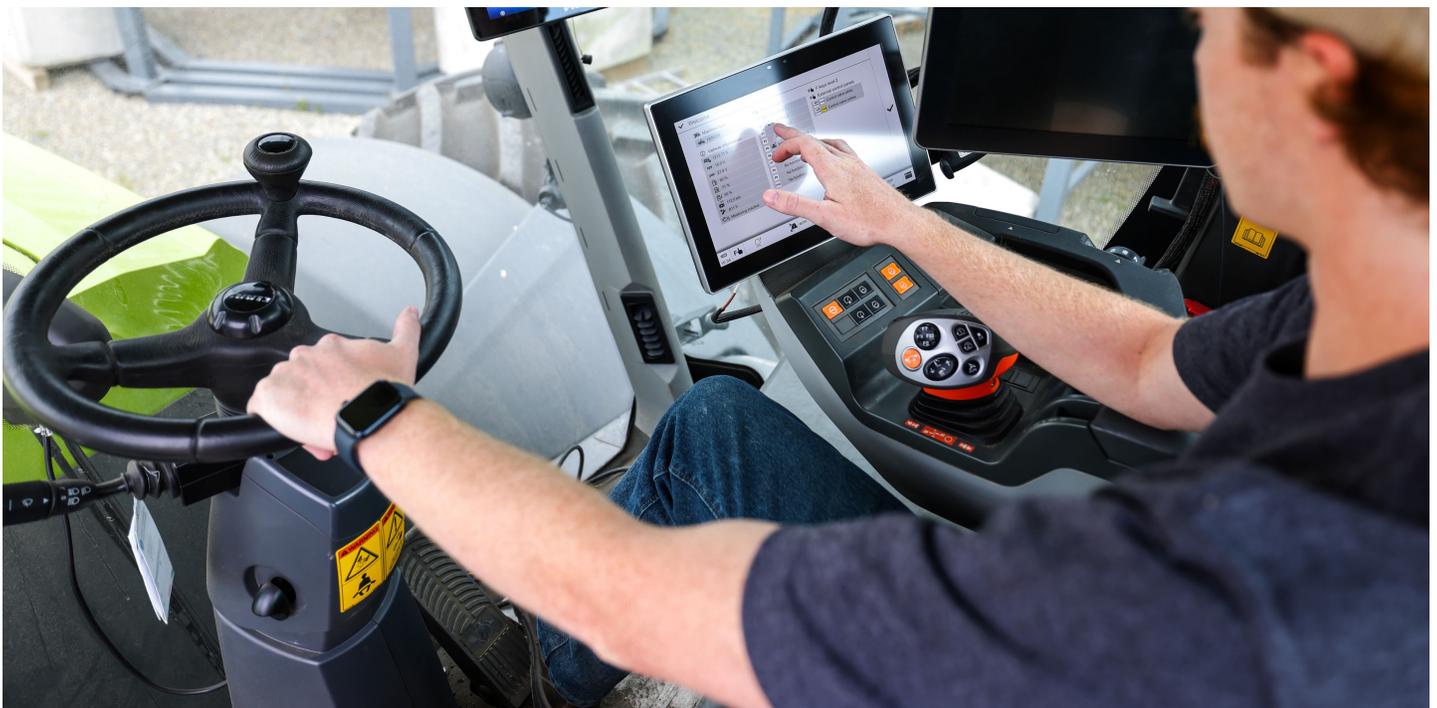


Impact

Through conversations with instructors, administrators, and students at Olds College, AI is clearly recognized as a transformative tool, reshaping how agricultural education is delivered, experienced, and assessed. The immediate impacts include:

- **Enhanced Efficiency:** AI significantly streamlines curriculum development, lesson planning, and administrative tasks. Educators are able to focus more deeply on instructional quality, and students benefit from clear, structured, and highly organized learning materials.
- **Increased Student Autonomy:** Students regularly use AI tools to organize notes, draft assignments, and navigate challenging concepts independently. While this fosters self-confidence and resourcefulness, it also raises concerns about potential over-reliance and reduced genuine engagement in learning.
- **Critical Thinking Development:** Practical experiences demonstrate to students that AI is not infallible, highlighting the necessity of critical thinking, data literacy, and human judgment. Activities involving Raspberry Pi coding and precision agriculture applications underscore the limitations and strengths of AI, reinforcing the need for robust foundational knowledge.
- **Industry Relevance and Preparedness:** AI-powered precision agriculture tools, like sensor technologies, drones, autonomous systems, and predictive analytics, directly prepare students for industry expectations. Students who experience these technologies during their education are more ready to implement and innovate in real-world agricultural contexts

[Check out the video conversations here.](#)



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Going Forward

GOING
FORWARD



The AI implementation at Olds College revealed how transformative technologies can be when deeply embedded in authentic educational and industry contexts. From increasing instructional efficiency and student autonomy to reinforcing critical thinking and industry readiness, the initiative highlighted both the opportunities and tensions that come with AI integration. These insights shaped a forward-looking strategy that prioritizes clarity, collaboration, and innovation—ensuring that future efforts not only build on what worked but also address areas needing further development.

Clear Institutional AI Guidelines:

- Develop transparent, institution-wide policies that clearly define acceptable and ethical uses of AI, reducing ambiguity for both instructors and students.
- Refine guidelines collaboratively with students and instructors to foster ownership, trust, and responsible AI use.

Faculty Professional Development:

- Provide continuous, targeted training to build instructor comfort, capability, and creativity with AI tools.
- Establish informal and formal forums where instructors can freely experiment with AI, share best practices, and develop innovative teaching methodologies.

Collaborative, Research-Oriented Learning:

- Investigate a shift from traditional instructor-led models toward collaborative research projects involving AI applications, engaging students actively in the discovery and innovation processes.
- Utilize the Smart Farm infrastructure to involve students directly in data analysis, simulation scenarios, and technology-driven projects, reinforcing practical and theoretical competencies.

Curriculum and Assessment Evolution:

- Emphasize curriculum updates to integrate foundational skills in data interpretation, critical thinking, and ethical implications of AI.
- Adapt assessment methods to reflect real-world scenarios, allowing AI as a resource, but ensuring genuine student understanding and critical reflection remain central.

Student-Led AI Projects:

- Encourage student-driven initiatives and experiments with AI technologies, fostering innovation and practical problem-solving capabilities.
- Support projects that mirror industry challenges, bridging academic learning with tangible industry outcomes.

Enhanced Industry Partnership:

- Maintain active industry collaboration to ensure AI curriculum integration aligns with current and future industry standards.
- Regularly gather industry input on skill needs and technological trends to keep educational offerings relevant and impactful.



Resource

- [AI in Agriculture Education - Conversations](#)

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