

**The Other AI: Pre-Service Teacher Utilization of AI Technology to Create Lesson Plans**

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### **Introduction/Need for Innovation**

Some school-based agricultural education (SBAE) teachers are exiting the profession because they lack the confidence to teach curriculum (Solomonson et al., 2018), while others leave because they struggle to find a healthy balance between their professional and personal lives (Solomonson et al., 2022; Sorenson et al., 2016).

Teacher workload can be reduced by using information and communication technology (ICT) (Selwood & Pilington, 2005). ICT includes tools that store, process, transmit, convert, duplicate, or receive electronic information (Idaho Assistive Technology Project, n.d., para. 1). The introduction of the new ICT, generative artificial intelligence (AI), such as ChatGPT, holds the potential to reduce teachers' workloads by providing contextualized learning for students, modernizing assessments, and providing intelligent learning environments through tailored feedback for students (Chaudhry & Kazim, 2021; Javaid et al., 2023). Additionally, teachers need to stay abreast of technological advancements like ChatGPT and consider how they may be used to benefit students. (Javaid, 2023). ChatGPT saves teachers' time and energy by creating materials such as prompts and discussion topics (Javaid, 2023).

Implementing an extra credit assignment in which pre-service students created lesson plans with AI allowed the exploration of how pre-service teachers' perceptions of these factors influence their willingness to adopt AI applications for educational purposes.

### **How it Works**

"Utilizing AI Technology to Create Lesson Plans" was an extra credit opportunity for students in an agriculture teaching methods course at Kansas State University. The lead author introduced this assignment by prompting students to reflect on the resources they use to create lesson plans. The class discussed the potential benefits and challenges of using AI applications like ChatGPT.

The assignment was graded using a rubric created with the assistance of ChatGPT. The rubric assessed the structure of the lesson plan, alignment of supplementals with the lesson plan, identification of AI components throughout the submission, and a reflection of how the use of AI connected to educational practice. An alternate option was provided, which included reading and summarizing three Edutopia articles about AI in education. Students were awarded a maximum of 20 extra credit points.

All students in the course (N = 22) were given a handout with the instructions and rubric necessary for completion. The assignment was also located on the course Canvas page. Students who chose to participate had four weeks to complete an AI-assisted lesson plan and supplementals for a future lesson they would teach this semester at their Professional Development School or the following semester during student teaching. Students submitted their document(s) and responded to a reflection question. Before the assignment was distributed, the instructors identified objectives and data collection procedures approved by the Institutional Review Board.

### **Results to Date/Implications**

Student participants ( $n = 6$ ) used AI to generate individual lesson plan components, including learning objectives, introductions, activities, a slideshow, content, and full lesson plans. Although students were free to use any AI source for this extra credit assignment, all students in this course opted to use ChatGPT. They shared that AI tools like ChatGPT could benefit them as teachers in multiple ways, notably that ChatGPT helped spark creativity. One student said, “This really helped when I could not get my creative juices flowing and allowed me to spend more time finding supplementals that will help my students.”

Students also found ChatGPT to help summarize complex information. One student noted that ChatGPT helped them feel more comfortable creating a lesson plan about a subject they were not well versed in by summarizing it and providing a concise explanation. The student explained, “This relieved so much of my stress and made it easier for me to concisely cover information about animal reproduction.”

Some students had previously used AI and were comfortable with its features, while others were apprehensive. One student said, “When I first learned about AI tools... I was a little skeptical. A part of me felt like I was almost cheating in a way or stealing someone else’s content.” Another student shared, “At first I was very anti-ChatGPT, but after doing this I would say I am sold.”

Although each student who participated in this extra credit activity acknowledged the convenience of AI, several shared concerns. A notable concern was about the reliability of the AI-generated content. One student worried about relaying inaccurate information to students, and said they have “used [ChatGPT] in the past and have caught the facts being incorrect.” Others shared they are concerned that AI does not provide accurate information on controversial topics. These revelations opened the door in class for discussion about the appropriate, effective, and ethical use of AI.

### **Future Plans/Advice to Others**

The authors will continue using this assignment to show the benefit of online teaching resources and appropriate use of AI tools. Student feedback from this assignment will be used in future teacher-education courses to encourage students to try new resources. We recommend teacher educators practice using AI prior to assigning this in class to be better equipped to answer questions. We also recommend requiring all students to practice using these tools now, so they are better equipped to use them and help students navigate AI when they begin teaching.

### **Costs/Resources Needed**

There were no costs associated with this extra credit assignment. Teacher educators need ample time before introducing the assignment to research and practice using AI tools to guide students and create a rubric. Additionally, time is needed during the course to introduce the assignment and answer questions and debrief after completion.

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