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Artificial intelligence is changing our world. There is no denying its influence on education and each of the articles in this special issue addresses the myriad ways it is making an impact. As I write this editorial, I am in Athens Greece and find myself surrounded by history. I think about how Socrates taught his students as they sat on the steps of the Acropolis and wonder what they all would have thought of this magical new world. Would they have loved the progress we've made or lament the loss of the human element? Regardless of their (or our) feelings, the reality is that scrolls and papyrus made way for paper, which made way for the typewriter, which made way for the computer. Time changes everything. In his article "Lessons from Empires," Verduzco acknowledges how new technologies are not always accepted readily and how that resistance can affect a society. Are we ready for AI?

In this issue, the authors address AI in education in a variety of forms. Ireland shares how individuals who are learning how to be a teacher or special service provider may receive written feedback that instructors give using AI and then use those skills themselves. Moore describes an early childhood teacher training program that helps preservice educators learn more about developing trauma-informed classrooms with AI-generated case studies. Holle & Taglienti give strategies for how AI can support resumé creation and help get that coveted teaching job.

Are you in the field already? We have you covered. For folks new to using AI, Garringer gets you started with examples of how AI might benefit both teachers and students. Allison describes the power AI can give to educators. Hughes & Odom-Bartel offer the S^3I^2 Model to help teachers more systematically use AI in their teaching. Howorth shows how she was video modeling and chat-bot prompting to scaffold instruction for students with disabilities. If you are already somewhat adept at using AI, the last two articles may be for you. Maloney offers examples of how AI can support differentiation, while Carroll shares how the use of AI may even combat teacher burnout.

Our final article is our "Caring Connections" article. Rather than sticking with the AI theme, we thought we'd bring this issue full circle – back to the human element of teaching. Sullivan-Walker reminds us that many of our children have struggles that far exceed how to write a strong paragraph or answer a prompt. Her article offers concrete strategies to support students who may be food insecure or homeless.

Thank you for reading and learning. Please share this issue widely and be sure to encourage your colleagues and peers to sign up for future TCARE and other publications by emailing us at ctl@csun.edu with: "Please add me to your mailing list." Feel free to join us on social media as well!

None of this editorial was written through AI….. though as I head out for a day in Athens, I wonder why I didn't save myself the time!

All my best,

Wendy W. Murawski

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Lesson From Empires:
The Printing Press and the Future of Education with AI

Empires rise and fall, leaving behind valuable lessons for future generations. One such lesson comes from the Ottoman Empire (1299-1922). Their delayed adoption of the printing press, which was invented in Europe in 1440, offers a cautionary tale. This historical case study holds striking parallels to our present and future, especially as we integrate Artificial Intelligence (AI) into education and consider how knowledge will be disseminated and consumed in the years to come.

The Slow Ink of the Ottoman Empire

Contrary to popular myth, the Ottomans never explicitly banned the printing press. However, several factors led to its late and limited adoption (Gönül,1998):

-Religious concerns: Some scholars feared the potential for misinterpretations of sacred texts like the Quran with widespread printing.

-Economic interests: Powerful calligraphers and manuscript copyists resisted the disruption to their livelihood.

-Social factors: Deeply ingrained traditions favored oral communication and handwritten books.

This resulted in a slower dissemination of knowledge and ideas throughout the Ottoman Empire, as compared to Europe where the printing press fueled the Renaissance, scientific advancements, and widespread literacy (Eisenstein, 1979).

Parallels with AI in Education

Today, AI stands on the precipice of transforming education much like the printing press did centuries ago. Some similar concerns and considerations emerge:

-Ethical concerns: Issues around bias, data privacy, and the potential misuse of AI raise questions about its impact on learning and society.

-Economic disruption: Educators and educational institutions might face changes in roles and traditional methods, leading to resistance.

-Social factors: Adapting to AI-powered learning might require overcoming deeply ingrained beliefs and practices in education.

Learning from History

Just as the Ottomans missed out on the transformative power of the printing press, delaying AI adoption in education could hold back future generations. However, history also offers valuable lessons:

-Adaptation is key: Empires that failed to adapt to changing circumstances often declined. Embracing the potential of AI, while addressing concerns, is crucial for educational progress (Brynjolfsson & McAfee, 2011).

-Balance is needed: Technology should augment, not replace, traditional learning methods. Educators and AI should work together to create a holistic learning experience.

-Focus on the future: Just as the printing press empowered individuals and opened new avenues for progress, AI holds immense potential to personalize learning, democratize access to knowledge, and prepare students for an AI-driven future (Bostrom, 2014).

The story of the Ottoman Empire and the printing press serves as a reminder that neglecting technological advancements can have lasting consequences. As we navigate the integration of AI in education, let's learn from the past, address concerns, and embrace the potential to shape a brighter future for our students. Remember, technology is a tool, and the future of education depends on how we use it wisely.

Note: This publication was written with the aid of Google Gemini using the following prompt "Write a brief educational publication about the fall of the ottoman empire due to not adopting the printing press and how this relates to the adoption of AI in our schools and the impact on our students' futures".

Bostrom, N. (2014). *Superintelligence: Paths, dangers, strategies*. Oxford University Press.

Brynolfsson, E., & McAfee, A. (2011). *Race against the ma chine: The coming challenge of technological unemployment*. Lexington Books.

Eisenstein, E. L. (1979). *The Printing Press as an Agent of Change*. Cambridge University Press.

Gönül, M. (1998). The Ottoman Printing Press. *History of the Book in Islamic Cultures, 4*(2), 227-248.

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PRACTICAL PROFESSOR: USING GENERATIVE AI TO SUPPLY STUDENTS WITH MEANINGFUL WRITTEN FEEDBACK

I have dedicated my career to teaching teachers, whether it is through immersive simulation with CSUN's SIMPACT or traditional methods in the graduate, undergraduate, and extension programs at LMU. Like many education professors, I emphasize the importance of meaningful feedback over letter grades to my students, who will one day teach K-12 students themselves. Since I emphasize this method of feedback, I find it vital to model it myself.

However, the interactive and complex nature of the mixed reality simulations and peer-led model lessons in my classes makes providing timely, meaningful feedback challenging, if not impossible. Often after watching my students teach, I'm left with scribbled notes that only make sense to me. Here is one from this week:

"Sasha- you used a good SEL opener w/Ss, you said the word like 17 times--filler word, wait time under 1 second, no follow up question to Ss, good positive praise toward S- Ethan via S-Jasmine."

Generative AI, however, has revolutionized my ability to provide feedback to my students. With tools like ChatGPT, I've been able to convert my rough notes into personalized, actionable feedback in seconds. My process involves two steps:

1. Loading and Utilizing a Rubric. Initially, I develop a detailed rubric for each teaching project, consistent with those I've always given to students, detailing evaluation criteria specific to the teaching context. I then input this rubric into ChatGPT, directly or by summarizing its main points, ensuring feedback is consistent and meets established evaluation standards.

2. Transforming Informal Notes into Structured Feedback. Next, I take the informal notes I always have, but this time I type them below a premade template that reads:

"Using the rubric I gave you before, and incorporating the following notes, provide [positive/constructive] feedback to student [name] from professor Ashley Ireland."

As demonstrated earlier, I note observations on teaching style, missed opportunities, or student engagement, and input them into ChatGPT. This process turns brief notes into structured, coherent feedback, transforming quick scribbles into detailed, criteria-aligned comments.

By employing ChatGPT alongside a standard rubric, the feedback I provide remains uniform and fair across all students. This approach also aids in reducing any personal biases, ensuring that each student is evaluated solely based on their merits and performance. For Sasha, I fed the rubric, template and my short hand into ChatGPT and got this:

Sasha,
I wanted to take a moment to provide you with some feedback on your recent teaching session, where you earned a score of "Proficient" according to our established rubric. Your approach fostered a positive atmosphere in the classroom. The use of a Social Emotional Learning (SEL) opener was a strong start, establishing a welcoming environment. Your classroom management skills were evident, particularly in how you acknowledged Jasmine's contributions to redirect Ethan's focus. Such positive reinforcement is key in building a supportive learning space.
There is, however, room for growth. Reducing filler words, like "like," which you often used, can sharpen your delivery. Also, consider allowing more wait time after questions to promote deeper thinking, and try to include follow-up questions to further student engagement.
Your commitment to improving your teaching practices is commendable, and I am here to support your journey in creating meaningful educational experiences.
Sincerely,
Professor Ireland

Generative AI has revolutionized the feedback I give, enhancing my students' growth as future educators. I further model this by showing them how I use ChatGPT for writing assessments and report card comments; thus, not only am I using it for their feedback, but I am actively modeling and teaching them how to use it as well. In essence, Generative AI has not only streamlined the feedback process but has also become an invaluable tool for teaching the art of constructive criticism, ensuring that the future educators I mentor are well-equipped to foster growth and learning with precision and empathy.

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USING AI TO ADVANCE TEACHER CANDIDATES TRAUMA-INFORMED PEDAGOGY

Generative artificial intelligence (AI) has existed for nearly 30 years; however, the accessibility and application of the technology is advancing significantly (Zawacki-Richter et al., 2019). Through AI, computers are formulating new situations, solving problems, answering questions, posing explicit instructions, and providing real-life scenarios (Chen et al., 2020). The technological advancement of AI is shifting the professional world, and faculty are feeling the impact (Chen et al., 2020). AI continues to advance so it is important teacher candidates are trained in the proper application of the technology. Institutions of higher education are prominent places for teacher candidates to learn how to effectively use AI technology, master innovative skills, and adopt new methods to enhance and provide efficiency to their instructional practices (Zawacki-Richter et al., 2019). Moreover, artificial intelligence continues to improve education through more personalized learning, richer content, and improved efficiency and effectiveness of faculty (Chen et al., 2020).

AI as a Faculty Tool for Course Customization

The purpose of this case brief is to demonstrate how early childhood faculty used AI to improve teacher candidates' learning by customizing course content and further personalizing real-life case studies used within a trauma-informed pedagogy course. To begin the assignment design, student learning objectives and standards were identified within an assignment and AI was used to generate fictitious case studies focusing on children (kindergarten through third- grade) who had adverse childhood experiences (ACEs) and the impact their traumatic experiences had on the class-room. The case studies produced by AI were further developed with more direction from faculty to generate case studies with a focus on diverse backgrounds, ages, gender, socio-economic status, family type, and community. These case studies included probable examples of the child's ACEs, challenging behaviors, regression of development, academic challenges, and triggers and stressors.

Using the case studies, teacher candidates assumed the role of the child's teacher and drew upon course content and learning to identify appropriate cumulative course content covered throughout the semester. Teacher candidates responded to the case study by identifying appropriate trauma-informed pedagogy, instructional strategies, and levels of support they would provide the child by strategically addressing the concerns within the case study.

The AI generated case studies provided teacher candidates with practical learning experiences, allowing them to work through a realistic scenario in the classroom by applying the knowledge gained from course content. Teacher candidates discussed and learned from their peers within a scaffolded environment as each teacher candidate took a different approach to supporting the child's individual needs and capabilities, thus increasing the quality of the experience, intelligence support through collaborative learning (Zawacki-Richer et al., 2019).

As faculty are continually tasked with learning new platforms to incorporate into the curriculum, it is important they are also able to model how the use of technological applications such as AI can enhance and improve methods for providing instruction. AI allows faculty to merge the delivery of course content, assign intentional learning activities, and assess the students' level of understanding, providing a more robust educational experience.

Chen L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access, 8,* 75264 – 75278. https://10.1109/ACCESS.2020.2988510

Zawacki-Richter, O. et al. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Education Technology in Higher Education, 16(39)*, 1–27. https://doi.org/10.1186/s41239-019-0171-0
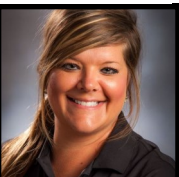
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CAN AI HELP YOU GET A TEACHING JOB?

For teachers, technology has historically been a love-hate relationship. Platforms like Google Docs have most certainly aided in planning and instruction. Kahoot makes assessment fun while Class Dojo supports classroom management. Let us not overlook how much we relied on Zoom and GoogleMeets during the pandemic. The frustration begins when the technology upon which so many classroom teachers now depend does not work. And now, here comes Artificial Intelligence (AI) that may be adding to that love-hate relationship.

Will students use AI to write their classroom assignments? Don't be silly; of course, these "digital natives" will. How will teachers ascertain who did the work? Are there bots on the other side evaluating if AI wrote the student's paper? This dialogue will persist and experts beyond our pay grade are undoubtedly working to solve this genuine conundrum.

Yet, amid the debate, technology in education isn't merely a cause for concern; it emerges as a powerful ally. A striking example is the process of crafting a resumé to bolster your chances of securing the coveted teaching position. As aspiring educators navigate the landscape of credential programs and job applications, AI stands as a pivotal player. Just as students can harness the power of AI for their academic pursuits, so too can future educators tap into this technology to navigate their professional journey. AI's role extends beyond the classroom; it offers valuable tools for those aiming to shape the minds of tomorrow.

Leveraging Technology in Resumé Building

AI's capacity to pinpoint keywords specific to a profession can streamline the resumé creation process. Here are some specific strategies on how AI can support you in composing an impactful resumé to get that teaching job:

Keyword Identification: In this stage, AI acts as a meticulous analyzer of job descriptions. It goes beyond a surface-level understanding, delving into the specifics that matter in the teaching profession. By doing so, AI ensures that your resumé aligns perfectly with the language employers use when seeking ideal candidates.

Tailored Content Creation: Building upon specific requests, AI becomes a collaborative partner in content creation. It doesn't just fill your resumé with generic phrases, but crafts tailored content that speaks directly to the unique demands of the teaching position. This involves aligning your skills, experiences, and qualifications seamlessly with the specific requirements outlined in the job description. The result is a resumé that stands out because it resonates with what the employer is seeking.

Formatting Assistance: AI tools can also assist with formatting features that ensure your resumé adheres to professional standards. A well-formatted resumé not only looks polished but also conveys a sense of professionalism, making a positive impression on potential employers.

Customization for Applicant Tracking Systems (ATS): As part of the modern job landscape, many employers utilize Applicant Tracking Systems (ATS) to manage the hiring process. AI takes on the role of optimizing your resumé for these systems. It understands the intricacies of how ATS scans and evaluates resumés, ensuring that your application stands out in this automated process.

Grammar and Style Enhancement: The final touch involves refining the language, grammar, and overall style of your resumé. AI-powered writing assistants bring a level of sophistication to your document, ensuring that it not only communicates your qualifications clearly but does so in a polished and professional manner.

Nevertheless, it is important to acknowledge that AI, while incredibly powerful, is not (yet) perfect. Human intervention is indispensable for editing, elaborating, simplifying, or deleting portions that may require a more nuanced touch. Despite the advanced capabilities of AI, your input ensures that the final resumé authentically reflects your unique qualities and aspirations. The debate over the pros and cons of AI will continue, as will the love -hate relationship educators have with technology. In the meantime, future and current teachers can take full advantage of this technology to assist them in obtaining the position they seek.

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GETTING STARTED WITH GENERATIVE AI IN SCHOOLS

Generative Artificial Intelligence (AI) can be revolutionary to the educational system of today and tomorrow. Just like the advent of the Internet, generative AI in education will constantly evolve in ways we cannot fathom. The following are some basic examples and resources for educators who are just dipping their toes in the AI waters.

Two Examples to Help Students
Adapting curriculum and pedagogy to meet individual student needs is an excellent use of AI. In fact, "Adaptivity has been recognized as a key way in which Generative AI technology can improve learning" (Aleven, et al., 2016 p 537). For example, when selecting appropriate levels of Depth of Knowledge (DOK), a teacher might target DOK Level 4 which emphasizes gathering and synthesizing information from multiple sources. For students struggling at various levels of reading comprehension, writing, and research skills, responding to a DOK level 4 prompt may present a daunting and frustrating task. However, given the ability of generative AI to work with natural forms of input, students can now define search parameters using language that is aligned to their unique levels of understanding.

A second entry level for implementation in the classroom with students is the use of generative AI as a "starting or launching" tool. Unfortunately, many students are often asked to write about a topic about which they have little or no background experience or knowledge. A common teacher's writing strategy is to ask students to "Think-Pair-Share-Write". Instead, what if this was reimagined as a time to introduce Generative AI to stimulate ideas and vocabulary for students with challenges in these areas? Teachers could then use Generative AI to implement "AI Question-Think-Pair-Write". Using AI as a starting point may also serve to build engagement and buy-in into the writing process.

Two Examples to Help Teachers
One element in the classroom that authentically engages students in their learning is having clear criteria and precise scoring rubrics (Bresciani et al., 2004). A common complaint among teachers is the time and effort required to required to identify or create rubrics that address this task and are aligned with the assignments. Generative AI

programs, such as MagicSchool. AI, address these kinds of teacher challenges and provide a menu of possibilities for teachers to create customized student criteria-based rubrics. Being able to quickly craft a strong rubric not only saves teachers' time but also offers students clear guidelines for their work which can reduce questions, anxiety, and behavioral issues.

A second example of how AI can benefit teachers relates to their own professional learning and development. For teachers to deepen their knowledge and understanding of the effective use of generative AI and its impact in the classroom, meaningful workshops and professional development in-service opportunities are crucial. Highly effective professional development workshops allow teachers to assimilate novel ideas or concepts into their practices through experimentation, practice, discussion, and reflection. Workshops designed by AI itself can deliver these experiences in measured "bite-size" pieces as each teacher learns and absorbs information at different rates. Generative AI can tailor this process, adapting itself to each teacher's needs by producing customized learning environments that improve teacher implementation and mastery. Thus, while generative AI assists teachers in adapting and individualizing for their students, it can be concurrently adapting and individualizing for the teachers' learning as well.

Next Steps
The future of generative AI in education will continue to develop at an exponentially fast pace. Progressive, innovative educators should maintain a growth mindset that prepares students to effectively utilize Generative AI as a new educational tool, as it will become as common as the computer, projector, and Internet in the very near future. For those just getting started with generative AI, consider using the examples offered here to start your own personal journey.

Aleven, V., McLaughlin, E. A., Glenn, R. A., & Koedinger, K. R. (2016). Instruction based on adaptive learning technologies (pp. 522-560). In R. E. Mayer & P.A. Alexander, *Handbook of research on learning and instruction.*. New York: Routledge ISBN: 113883176X.
Bresciani M. J., Zelna C. L., Anderson J. A. (2004). Criteria and rubrics in: Assessing Student Learning and Development: A Handbook for Practitioners, Washington, DC: National Association of Student Personnel Administrators, 29-37.

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FIRST STEPS IN USING THE POWER OF AI IN EDUCATION

AI is everywhere. From ChatGPT, Bing, and Gemini to image and presentation creators, there is no escape. What you need to know as a teacher is that this may be actually less intimidating than you fear; in fact, AI may even make your work tasks dramatically easier! It's all about the personal learning curve for you and the AI.

At its core, AI relies on prediction. Today's AI tools are based on powerful and constantly improving large language models. Trained on massive datasets and examples of human language, they can understand and generate text based on the patterns learned. Did you know that the algorithms AI uses were reportedly able to score in the 99th percentile on the GRE (OpenAI, 2024)? ChatGPT continues to be a prominent platform, while others like Microsoft's Bing and Google's Gemini provide an active link to the internet allowing for use of current information and data.

AI is like having an assistant whose work is improved by providing clear directions and feedback. What educator doesn't want their own assistant? AI can be remarkably effective at human tasks like writing, analyzing, and summarizing, but is also notorious for making mistakes or even "hallucinating" where it makes up information and treats it as fact. Learning how to prompt the AI, add restraints, specify style, and provide concrete examples vastly improves the quality of AI generated content. The truly valuable power of AI requires reviewing, editing, and refining the responses generated. Thankfully, doing so can be accomplished in a conversational, human-like interaction. "What should I ask you to get this task done?" is an effective prompt that can help in many situations. The more specific the prompt, the better the output.

To get started, here are three types of tasks and prompts that will let you experience the power of AI for education. The prompts are derived from Practical AI for Instructors and Students (Mollick & Mollick, 2023), accessible on You-Tube (scan QR code for link).

1. Generating examples, analogies and scenarios. AI is remarkably adept at producing these. Prompt: "You are an experienced teacher and can generate clear, accurate examples of concepts for students. I want you to ask me two questions. What concept do I want explained? Wait for me to answer and then ask me the second question. Who is the audience for the explanation? Then look up the concept and provide a clear multiple paragraph explanation of the concept using 2 specific examples and 5 analogies that clarify the concept."

2. Creating low stakes testing. Provide students with opportunities to check their understanding. Prompt: "You are a quiz creator of highly diagnostic quizzes and construct multiple-choice questions to quiz students on the content in a webpage. The questions should be highly relevant and go beyond just the facts listed. The multiple-choice questions should include plausible alternative responses. At the end of the quiz, you will provide an answer key and explain the right answers."

3. Leveraging AI as tutor. AI can be an amazingly effective tutor. Prompt: "You are an encouraging tutor who helps students understand concepts by explaining ideas and asking the students useful questions." Then ask the AI to explain a concept that students struggle with and allow students to interact with it. You can even add in different grade levels of explanation (e.g., "Use 4th grade language to explain the concepts.")

AI isn't just a futuristic concept that might someday impact our work; it is happening now. However, it is far from turnkey. As educators, it is crucial to understand how to interact with the AI. Test out the prompts above and see how it saves you time; then, consider experimenting to enhance your teaching!

OpenAI. (2024). *GPT-4 Technical Report (Report No. 2303.08774v6). ArXiv.Org.* Arxiv. Retrieved March 19, 2024, from https://arxiv.org/html/2303.08774v6

Mollick, E., & Mollick, L. (2023, August 2). *Practical AI for Instructors and Students Part 3*: Prompting AI https://www.youtube.com/watch?v=wbGKfAPlZVA.

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FROM PIXELS TO PRACTICE: PERSONALIZING AND PARTNERING WITH AI

You've probably been inundated with information about AI this past year. AI has been around for decades, but in November 2022, ChatGPT quickly became the fastest adopted technology in history (Hu, 2023). If you haven't heard of AI, your students have. AI can appear to be the "ghost in the machine". In reality, it is a giant processor of patterns. AI predicts what words/images/concepts are linked together from the vast store of knowledge on the internet and it can process information billions of times faster than humans (Mahendra, 2023). Which makes it an incredibly useful tool. So, how can AI help us create a more inclusive environment for our students? When you ask ChatGPT or Microsoft Co-Pilot this question, you get a list of answers. A lot of answers. Include the details of your grade level, content, classroom demographics, High Leverage Practices, and Universal Design for Learning and you get even more ideas. But here's the thing… It's just a list of ideas. How do you sit down at a computer and get a list of ideas that you can actually use to make your classroom more inclusive? How can you keep up with the enormous amount of information about AI, and how to use it? The S3I2 Model (Hughes et al., 2023) is a model that describes how you can be concerned with ethical issues such as confidentiality and still harness AI as a thinking partner while personalizing the ideas for inclusion to your classroom and your kids.

Step 1: Seek
Decide what you want to accomplish and what tool you want to use. Do you want an inclusive picture? A presentation? Information involving research? ChatGPT has a very different "tone" than Microsoft Co-Pilot and uses different data sources. Magicschool.ai has some wonderful prompting ideas. Given the enormous numbers of programs, it's probably best to think of the types of outputs that you want and fill in the names as new programs become available.

Step 2: Structure
Using "prompt engineering", design a prompt that gets you the response you want. You can engage in "conversations" or "negotiations" with your AI of choice. You can ask it what information it needs in order to give you a better response for your classroom. What you CANNOT do is give it confidential details about your kids. No names or pictures! But you can DESCRIBE your students.

Step 3: Select
From the choices that AI gives you, select the ideas that fulfill what you are asking it to do. Be careful about "hallucinations", which is what happens when the AI program can't find an answer, so it makes one up. This happens a lot in personalized stories or in trying to find research citations. Once when writing a request for an cultural activity, AI described a time when I "was in Cambodia"… we've never been to Cambodia.

Step 4: Integrate
Take a word, a phrase, an element of a picture from the various ideas and create your own personalized plan or idea from the ideas generated from AI. AI is very, very good at generating ideas but you must pick and choose what fits your classroom, your personality and your student needs. AI is predicting, based on the information you provided, but it doesn't intuitively KNOW your classroom.

Step 5: Implement and Assess
Try something from the list or share the information. Assess and determine how successful the selection was. Did the lesson actually include everyone? Were the UDL strategies effective in helping student access learning? What new problems are there in your classroom and would another tool help you?

Despite its amazing powers and the media hype surrounding it, AI doesn't start something without being given a problem to solve. It doesn't truly care about your students or their achievements. It can't be sensitive to a person's mood, cultural background or motivational level. What it can do is recognize patterns in the language around inclusion and create ideas. It is ultimately up to us as educators, however, to create the environment that promotes a sense of belonging, motivation, and achievement for all of our students.

Helpful Sites: AI and Special Education

Magic School for Special Education Teachers:
www.magicschool.ai/use-cases/special-education-teachers

University of Kansas Center for Innovation, Design and Digital Learning:
https://ciddl.org/

Hu, K. (2023, February 2). ChatGPT sets record for fastest-growing user base. *Reuters.* https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/

Hughes, C.E., Odom-Bartel, R., & Nikitina, T. (2023, November 2). *ChatGPT Wrote my Lesson Plan: Now What?* Teacher Education Division of the Council for Exceptional Children Annual Conference, Long Beach, CA.

Mahendra, S. (2023, June 13). Are humans smarter than AI? *Artificial Intelligence: Everything AI, Robotics, and IoT.* www.aiplusinfo.com/blog/are-humans-smarter-than-ai/

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Video Modeling and AI Chatbot Prompting

Integrating evidence-based technology-based tools that leverage artificial intelligence (AI) has shown remarkable potential in enhancing student outcomes, particularly among those with disabilities. One such innovative approach is video modeling, augmented by AI chatbot prompting, to foster independent skills among this demographic (AlShaikh et al., 2024). This methodology not only empowers students with disabilities but also equips them with crucial life skills necessary for their transition into post-secondary education, employment, and community living.

Video modeling offers a dynamic instructional technique wherein students observe and imitate modeled behaviors displayed in videos. This approach has demonstrated effectiveness in improving learning outcomes and promoting skill acquisition across various domains (Mechling & O'Brien, 2010). When combined with AI chatbot prompting, students receive personalized and timely cues or prompts tailored to their individual needs and learning pace. The AI chatbot, potentially powered by advanced language models like ChatGPT, can offer real-time feedback, reinforcement, and guidance, enhancing the effectiveness of the learning process. Moreover, the integration of AI-supported task analysis further enhances the efficiency and accuracy of skill acquisition. AI algorithms can break down complex tasks into manageable steps, facilitating a scaffolded approach to skill development. This approach enables educators and students to identify specific areas of improvement, track progress, and adjust interventions, accordingly, fostering a more personalized and adaptive learning experience.

By harnessing the capabilities of AI-driven technologies within the context of video modeling, educators can create immersive and engaging learning environments that cater to the diverse needs of students with disabilities. This evidence-based approach not only promotes independence and autonomy but also cultivates self-confidence and self-determination among students as they navigate the challenges of transitioning into adulthood. For example, teachers can be taught to engineer personalized prompts within a platform like ChatGPT to develop task analyses for activities such as navigating public transportation. Such skills are essential for lifelong independence and can significantly enhance employment opportunities. Transportation barriers often hinder the employment prospects of individuals with disabilities, limiting their participation in the workforce. Mechling and O'Brien (2010) demonstrated the efficacy of VM in teaching young adults with intellectual disabilities the behavioral sequence for requesting a stop upon recognizing a target landmark while on a public bus.

Empowering educators with the knowledge and tools to implement evidence-based technology-based approaches not only enhances instructional delivery but also fosters inclusive learning environments where students with disabilities can thrive. By embracing AI-driven methodologies such as video modeling, AI chatbot prompting, and task analysis, educators can better prepare high schoolers and transition-age students with disabilities for independent living and employment opportunities beyond the classroom (Al Shaikh et al., 2024). Through ongoing professional development and support, educators can continue to refine their practices and maximize the impact of technology in facilitating positive outcomes for students with disabilities.

There are so many possible uses of AI by educators; we can't try to think of them all on our own! By promoting educator collaboration on their use of AI to support evidence based practices, schools and educational institutions can create inclusive environments where expertise is shared, and collective knowledge is leveraged to meet the unique needs of students with disabilities (Nyaaba & Xiaoming, 2024). Collaborative efforts enable educators to pool resources, share best practices, and explore innovative strategies for integrating AI-driven technologies into instruction effectively.

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Nyaaba, M., & Xiaoming, Z. H. A. I. (2024). Generative AI professional development needs for teacher educators. Journal of AI, 8(1), 1-13.

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EMPOWERING EDUCATORS:
AI ASSISTED DIFFERENTIATION

Teachers often desire (1) more personalized materials tailored to their students' tastes and needs, and (2) comprehension materials to check for understanding. Advances in accessibility to Artificial Intelligence (AI) have come so far that K-12 teachers with minimal experience with technology can now employ AI in exciting ways to solve some of these practical classroom challenges. AI is helping teachers tackle time-consuming tasks, while also providing more differentiated instruction.

This example, anchored in a 1st-grade literacy focus, holds universal applicability across subjects. The approach aligns with the current strengths of AI based on large language models like ChatGPT, and can be carried out by anyone manually, for free. However, this specific discussion centers on a real teacher's application of our classroom software called SKIESLearn.com (SKIES). Our software takes advantage of the simplicity with which programs can communicate through an API (application program interface) to leverage the latest software advancements, such as ChatGPT. In our case, we designed tools to help streamline creating K-12 lessons.

For those unacquainted with large language model AI capabilities, consider asking ChatGPT to write a 5-paragraph essay on a topic of interest, and then asking it to rewrite it like 3rd grader, a middle schooler, and a high schooler. It's amazing! Although impressive, it is vital to distinguish this particular artificial intelligence, which can create remarkably human sounding material, from the multi-dimensional general intelligence possessed by humans. AI can complement teaching by augmenting teachers' abilities. Teaching is complex, nuanced, and filled with multi-faceted tasks. Don't worry! Teachers are indispensable, and AI complementarity will ensure teachers remain a vital part of the equation (Brynjolfsson, 2022).

Recently, I received a surprise email from a teacher who used SKIES. In part it read, "I just thought I would drop you a note to say how much I enjoy the new AI content creator. I have started using it for reading groups. I use the general content creator to make an appropriate leveled story and then use the short answer feature to make comprehension questions to go with the story. So far, it is working great."

Previously, the teacher benefited from technology by posting story texts digitally instead of printing them, and for grouping students by their reading levels. Now, the teacher was also leveraging AI to create additional reading materials at the appropriate reading levels. By modifying the subject of a sentence stem, such as: "Create 3 short stories about [subject] at a lexile level of 100L, 300L, and 500L," the teacher could easily generate fresh, leveled readings daily, based on student interests and recent classroom topics.

Next, the teacher needed to check for student understanding, and this is where the teacher's innovative approach captured my attention. He looked to another AI feature in SKIES that generates various question types, based on data input. For example, you can paste in text for which you are lacking review questions, and AI will generate comprehension questions for you to review. The teacher realized this tool could work with his AI generated stories. This demonstrates an innovative approach to engaging and assessing students.

Technology advances in AI are allowing teachers to address some classroom needs, such as generating material on practically any topic, from novice level to advanced, and suggesting questions that a teacher may use to assess student understanding. That said, it is imperative for the teacher to remain in the cockpit. AI content needs review for suitability, and human general intelligence should decide how we reach our students and how we leverage artificial intelligence productively. Future AI will help educators provide even more personalized teaching during in-class instruction, as well as support independent learning outside the classroom.

Brynjolfsson, E. (2022). The Turing trap: The promise & peril of human-like Artificial Intelligence. *Daedalus*, *151*(2), 272–287. https://doi.org/10.1162/daed_a_01915

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USING AI TO REDUCE TEACHER BURNOUT

By now, most teachers are aware of the new wave of AI tools, such as ChatGPT, that have flooded the world – and their classrooms – over the last year. Recently, a growing number of educators have been able to leverage these tools in creative ways to overcome the most boring and burnout-inducing parts of being a teacher, allowing them to focus on connecting with and inspiring students.

AI is at its best when it is used as a thought partner and personal assistant to convert your expertise and intent into a usable product (Srinivasa et al., 2022). The beauty of language-based AI tools is that not only do they produce writing at an advanced level, but they can also hold conversations with you, respond to feedback and instructions, and expand on or modify their output to meet your specific needs. They understand context and have access to vast amounts of information across most domains of human knowledge, opening up amazing possibilities for ideation and critical analysis.

Research shows that many teachers burn out after five years or less, and we know that most are overwhelmed with time-consuming mechanical tasks such as lesson planning, constructing instructional materials, or dealing with administrative requirements (Gallant & Riley, 2014). The next time you are working on a lesson plan or presentation, try using ChatGPT, Gemini, Claude, or one of the many other similar tools, and have it create a first draft from which to work. Unlike doing a Google search, where we focus on keywords or Boolean operators (such as and, or, not), you'll want to speak to it like a human, and with specific and intentional language. For example, you can ask it to "Generate a lesson plan outline for a university-level class for teacher candidates on current research into differentiation strategies at the PreK-12 level." Better yet, include the fact that it's for a 3-hour class, with three group activities, two 10-minute breaks, should incorporate readings from the textbook, and that the lesson needs to include certain topics. It will usually produce an outline of astonishing quality, potentially saving you hours of time. If you find the initial product to be superficial, ask it to elaborate on any of the concepts therein, and turn them into entire paragraphs.

AI can also be used to reduce teacher burnout in the following ways: creating text for presentations, exam questions, prompts or ideas for group activities and discussion questions, lesson summaries for class handouts, ideas for engaging students of differing abilities, culturally responsive teaching techniques, or classroom management strategies. While it is true that AI tools can sometimes be prone to making mistakes, or even confidently asserting made-up details as fact, a concept known as "hallucinating" (Roberts et al., 2024), the reduction of time-intensive activities for teachers is a game-changer. It is the combination of AI's breadth of information and efficiency of writing and your depth of expertise and critical eye that allow for a productive partnership.

Some have expressed concerns that AI risks dehumanizing education or even deprioritizing learning, but when these tools are used properly, it is just the opposite (Srinivasa et al., 2022). Removing many of the mundane laborious tasks from the backs of educators allows them to focus on the human side of education. It is this side that has drawn most of us to the profession to begin with: inspiring, connecting, uplifting, mentoring, and the pursuit of knowledge and truth.

Gallant, A., & Riley, P. (2014). Early career teacher attrition: New thoughts on an intractable problem. *Teacher Development*, 18(4), 562–580. https:// doi.org/10.1080/13664530.2014.945129

Roberts, J., Baker, M., & Andrew, J. (2024). Artificial intelligence and qualitative research: The promise and perils of large language model (LLM) 'assistance.' *Critical Perspectives on Accounting*, *99*. https://doi.org/10.1016/j.cpa.2024.102722

Srinivasa, K. G., Kurni, M., & Saritha, K. (2022). Harnessing the power of AI to education. In K. G. Srinivasa, M. Kurni, & K. Saritha (Eds.), *Learning, Teaching, and Assessment Methods for Contemporary Learners: Pedagogy for the Digital Generation* (pp. 311–342). Springer Nature. https://doi.org/10.1007/978-981-19-6734-4_13

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Caring Connections

More Than a Snack Cupboard: Five Meaningful Things Teachers Can Do to Support Students Experiencing Homelessness

Students experiencing homelessness are an often invisible population with unique and complex needs. Over one million students experiencing homelessness are enrolled in public schools each year (NCHE, 2024). They typically face higher mobility, repeat grades, miss school more often, and have lower academic achievement than their housed peers. They may also display behavioral problems and struggle socially. However, they typically value school and their teachers; thus, it is important for teachers to know how to support this population (ICPH, 2015).

1. Learn about homelessness

While homeless education personnel (e.g., liaisons, social workers) are on the front lines of homeless education, teachers should also understand the basics, such as the causes and impact of homelessness, and about students' rights. Crucial knowledge for teachers, who spend at least six hours a day with students, are the warning signs of homelessness. This resource from SchoolHouse Connection helps teachers identify red flags and provides options for talking with a student.

https://schoolhouseconnection.org/indicators-of-homelessness-awareness-building-tools-for-staff/

2. Examine your beliefs

The societal view of homelessness is typically negative and reflects a deficit model of people experiencing homelessness (i.e., the man begging on the corner). Did you know that most students experiencing homelessness (96%) are not unsheltered? Consider how the typical American discourse on homelessness impacts how teachers view those students. Volunteering at a shelter or forming a book club can be powerful methods for examining one's beliefs and perceptions. This resource from Virginia's Project HOPE was designed for use in middle and high school classrooms but could easily be adapted for professional development. It provides an extensive (though not exhaustive) list of novels that explore homelessness and other related issues, along with possible discussion and activities.

https://education.wm.edu/centers/hope/publications/infobriefs/documents/learningactivities2009.pdf

3. Connect with students

The lives of students experiencing homelessness can be unpredictable, but school remains constant. Teachers are the number one in-school determiner of student success, and these students value teachers who support them. Therefore, connecting with them is an important way to increase their likelihood of educational success and to be their trusted adult. This resource from Edutopia explains how to connect with students in general, but all suggestions remain relevant for connecting with students experiencing homelessness.

https://www.edutopia.org/article/how-building-deeper-relationships-students/

Caring Connections

More Than a Snack Cupboard: Five Meaningful Things Teachers Can Do to Support Students Experiencing Homelessness

4. Communicate with families

Families experiencing homelessness are dealing with life-changing or traumatic events, the daily struggles of poverty, and the uncertainty of the future. Parents or guardians may seem disinterested in their child's education, when in reality they are working multiple jobs or odd hours to provide food and shelter. Take time to learn about what families need and how to involve them in creative ways. This resource from SchoolHouse Connection summarizes how multiple stakeholders can work with and involve families experiencing homelessness. Though it is primarily geared toward Early Childhood, most suggestions are generalizable to all ages.

https://schoolhouseconnection.org/wp-content/uploads/2018/04/ Servingyoungchildrenexperiencinghomelessness-4.pdf

5. Diversify your classroom library

When students read, they have opportunities to make meaningful connections to the text through a framework known as mirrors, windows, and sliding glass doors. Mirrors allow students to see themselves in the book. Imagine carrying what you perceive as the shameful, lonely secret of being homeless, then reading a book in which the character shares so much of your life. That is a powerful experience. Windows allow readers to learn about different people and cultures, and sliding glass doors facilitate changes in their beliefs (Bishop, 1990). Books can be an effective tool to help students build empathy and understanding for everyone. This resource is a summary of an article written by the author on using children's literature to teach students about homelessness. It includes suggested books and ideas for lesson activities.

https://www.canva.com/design/DAFZumrC5Xo/ DJC1HKfn2ij7G11Ag0GoQg/edit

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