

#291 — AI and the 4 Cs: Creativity

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Speakers

Paul (98%), Transition (2%)

Paul Beckermann 0:01

Welcome to Tech Talk for Teachers. I'm your host, Paul Beckermann.

Transition Music 0:06

Check it out. Check it out. Check it out. Check it out. What's in the toolkit? What is in the toolkit? So, what's in the toolkit? Check it out.

Paul Beckermann 0:17

The topic of today's episode is AI and the 4 Cs: Creativity. This episode is the final installment in the four-part series exploring how artificial intelligence can be used to strengthen the transferable skills often referred to as the 4 Cs: Communication, Collaboration, Critical thinking and Creativity. This episode will focus on creativity. To begin with, creativity is really important. In our article, "5 Reasons Why It is More Important Than Ever to Teach Creativity," Nicole Kruger says, "Research is showing that creativity isn't just great to have. It's an essential human skill, perhaps even an evolutionary imperative in our technology-driven world." Wow, that's a lot. She explains that the more quickly society changes, the more important it is for humans to demonstrate innovation to keep up with those changes. Technology, and now specifically artificial intelligence, has rapidly accelerated that rate of change, making innovation and creativity more important than ever. Beyond what she describes as a near existential need for developing creativity, Kruger goes on to outline five reasons why she believes it's important to teach creativity in schools.

Transition Music 1:36

Let's count it, let's count it. Let's count it down.

Paul Beckermann 1:40

Here are the five. Number one, creativity motivates kids to learn. Number two, creativity lights up the brain. Three, creativity spurs emotional development. Four, creativity can ignite those hard-to-reach students. And five, creativity is an essential job skill of the future. A recent report from the World Economic Forum supports that last point, noting that in 2023, creative thinking was already the second most sought-after skill by employers. Analytical thinking was number one, and even though artificial intelligence, or AI, is just beginning to impact jobs in the

mainstream, AI was already the number three skill on the list. An emphasis on these three skill areas is projected to continue into the foreseeable future. Brian Johnsrud, Global Head of Education, Learning, and Advocacy for Adobe, reinforces this viewpoint and takes it one step further. He says that students must learn to develop these skills and also use them in an integrated way. Johnsrud states, "In the rapidly evolving job market, knowing how to use AI to fuel creative thinking and express ideas in powerful creative ways will be essential for almost every job and career." So how does AI fit into the creativity equation? And how do we address the concerns that AI use will actually hinder, rather than develop, student creativity?

Well, to unpack this question, it's helpful to reflect on the work of Steven Johnson, author of "Where Good Ideas Come From: The Natural History of Innovation." In his viral YouTube video summarizing his work, Johnson explains it's important to remember that the great driver of scientific innovation and technological innovation has been the historic increase in connectivity, and our ability to reach out and exchange ideas with other people, and to borrow other people's hunches and combine them with our own hunches, and then turn them into something new. Johnson argues that people often only have half of a good idea, and that partial idea doesn't reach its full innovative potential until it collides with another good idea. The two partial ideas unite to become innovation. Johnson was writing about how the internet was providing transformational ways for humans to connect and generate new ideas. Generative AI is poised to have a similar effect, not only as AI made it faster and easier to get answers to our questions, but by design, it amplifies the collision of ideas. In order to respond to a user inquiry, an AI chatbot literally searches its databases to find connections and patterns among the billions of ideas upon which it's been trained. Generative AI is an idea supercollider that has the potential to help us pull ideas together that humans alone might honestly never connect. In fact, a 2023 study done by Dr. Eric Guzik at the University of Montana found that ChatGPT-4 has already matched the top 1% of human thinkers on a standard creativity test. Think about that for a moment. That means anyone with access to generative AI like ChatGPT-4 can have a virtual conversation with a thought partner equal to one of the smartest humans on Earth. In other words, by partnering with generative AI, we all have the potential to supercharge our own creativity. That's a transformational opportunity that can empower our students and help boost them to new heights of creative thinking. So, in that context, how might we design classroom experiences for inspiring creativity with AI?

Transition Music 5:29

How do I use it? Integration inspiration. Integration ideas.

Paul Beckermann 5:36

Mitchel Resnick in his article, "Generative AI and Creative Learning: Concerns, Opportunities, and Choices," outlines what he calls the 4 Ps of Creative Learning: Projects, Passion, Peers, and Play. By integrating these four elements into student learning experiences, he argues that we can increase the likelihood students will develop their own creative skills. Number one was Projects. So the first element reinforces the idea that creative work must be open-ended. If an assignment is close-ended, such as a multiple choice question, there's generally only one correct response. This leaves little or no room for creative thinking. Projects and project-based

learning provide the flexibility and space for students to be creative. Number two is Passion. This concept builds on the idea of student projects. When students are allowed to work on open-ended projects, they have more opportunity to integrate their personal passions into the work. These personal connections often lead to increased motivation, inspiration, and creativity.

The third P is Peers. This states that, essentially, work should be collaborative. The more collaborative the experience, the more ideas are bouncing around and available to be connected or reimagined. The fourth P is Play. Einstein's often attributed to the quote, "Creativity is intelligence having fun." Well, that idea has profound implications for our classroom. Kids are creative when they play, especially when they have space to reinvent or make up the rules to the games that they're playing. When Resnick talks about the power of play, he says that play allows students to experiment, try new things, take risks, and push boundaries. He extends this idea saying, "We should provide young people with opportunities to use AI technologies to explore new directions, tinker with new possibilities, and iteratively refine their ideas." He continues saying that students should be using AI tools as a catalyst, not a replacement, for their own creative process and their collaboration with others. When summarizing his Four P's Model, Resnick describes how it all comes together, saying young people are most likely to develop as creative, curious, collaborative learners, when they have opportunities to work on projects, build on their passions in collaboration with peers, in a playful spirit. That's a great recipe for designing experiences that inspire creativity in our classrooms. So with that context in mind, let's look at some specific ways that you can bring AI into the creative process.

Transition Music 8:14

Here is your list of tips.

Paul Beckermann 8:17

The first is brainstorming. This is the most obvious place for students to lean on generative AI tools. AI tools like ChatGPT are exceptionally good at generating lists of ideas. In fact, in a study led by Sabrina Habib, and published in the Journal of Creativity, 100% of students surveyed said that AI was helpful for brainstorming. 100%. To make sure that AI doesn't do all the hard work, it's often a good idea to have students brainstorm their own list of ideas first. One way to structure the brainstorming process is to have students brainstorm individually, then as a group, and finally, with the help of AI. Each step brings another collaborator into the process.

Number two, overcoming brain block. Most of us are familiar with the idea of writer's block. We get stuck and just can't think of a new idea or direction to go. This can happen anywhere in the creative process, and it feels like your brain is blocked from coming up with new ideas. This is another space that AI can really help us. It can prime the pump and reignite our thoughts by providing a list of possibilities.

Number three, solve a local problem. When you challenge students to solve a local problem, an AI chatbot is less likely to know the specific details of the problem to be solved. Because AI won't be able to provide all the answers, students are required to take on more of the heavy

lifting. Students can still ask the AI questions and help in generating ideas, but to get quality responses, they will need to be thoughtful about what they ask. Ultimately, students will need to pull together pieces of information in new and creative ways to solve the problem. The more authentic the problem is, the better. If it's real to the students, it will often feel more relevant and motivating.

Number four, phone a friend. Set limits on how much or how often students can ask the AI for help. You could frame this as a "phone a friend" feature. For instance, if students are tasked with creating something new and original, they could be allowed to ask AI for help four times. By imposing a limit, students will be more likely to think for themselves before wasting one of their AI allotments. It's also beneficial to have students document their AI questions and responses. You can have them submit that documentation with their final product and possibly use them to facilitate a conversation about the usefulness of AI during the creation process.

Number five, scaffold an art project. Students can be asked to create some form of art. This might be writing, visual art, or even music, AI can be used to assist in the process. To make sure students don't rely too much on the AI tool, the final product should be more complex than the AI can generate with a single prompt. You might even require a mash-up of several forms of art into one project. For instance, students could be asked to use the Book Creator app to create a storybook that includes pictures, text, and a soundtrack. AI might be able to help with individual elements of the creation, but students will need to both, drive it and synthesize the parts, into a coherent final product.

Number six document AI use. This is more of an overarching idea rather than a specific assignment or task. AI documentation can be both a learning experience and a form of accountability. Essentially, students are asked to report back on how they used AI during the creative process, students might even consider how they would have done things differently without AI.

Number seven, use AI as a coach. Programs like KahnMigo, or AI tools that coach students through the writing process rather than doing the writing for them. Even if they don't have access to these specialized programs, students can submit prompts to a generative AI tool. They can enter prompts which guide them through a creative process rather than simply giving them the answers. You could give students a specific prompt to use or coach them to develop their own. A prompt might be something like, "Guide me through the process of outlining a story by asking a series of questions. Don't tell me specifically what to write but rather ask me for the ideas that I will later use to write my story. Only asked me one question at a time." Prompts like this can be used with any type of creative process. As a built-in bonus to the creative process that the students will perform, the process of creating prompts requires a degree of creativity, as well. So, by engaging in this process, students will be thinking creatively on multiple levels.

Number eight, do something impossible. This idea comes from Ethan Mollick, professor at Wharton School of the University of Pennsylvania. In his college classes, Mollick requires his students to use AI and, in the process, do something that they don't know how to do. That's the impossible thing. This requirement forces students to stretch themselves and use AI to learn

something new. For instance, if students don't know how to code, perhaps they use AI to generate code for a website or an app related to their project. Number nine, evaluate ideas. Part of the creative process is evaluating iterations of the work being created. Once students have generated something that they feel is creative and original, they can submit their ideas to an AI chatbot for feedback. Students might include criteria, perhaps a teacher's rubric, or come up with their own questions to pose to the chatbot. Based on the feedback received, students can evaluate their own effectiveness, revise their work, and improve their final product. And number 10, provide a spark. Allow students to use generative AI to provide the initial idea upon which they will build. Perhaps students prompt AI to invent a fictional character. The student can then take that character and write their own original story using that character as an inspiration. The same process could be used for a piece of artwork, where a small portion is AI-generated and then integrate it into a larger work, or use it to inspire another piece in a series. In the area of music, students could use the AI to generate an underlying beat upon which the lyrics and the chords and the melody are built. These ideas are certainly not all inclusive. In fact, to say that this list is complete would only stifle your creativity. Like a good collaboration with AI, the key is to take a foundational concept or an idea starter and allow it to collide with your own ideas. As you design learning activities for your students, think about how these ideas apply to your content area, the age and grade levels of your students, the interests of the students in your classroom, things that are going on in your school community, and the content standards that you are addressing. All of these things and more are elements that you can use to build up your own creative ideas. Oh yeah. And don't be afraid to reach out to generative AI as a thought partner. Just like they can help be a catalyst for your students' creativity, they can also inspire you, as you design learning experiences for your students.

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