

AIと基督教教育の未来：
イノベーションと人間中心の教育法
AI and the Future of Christian Education:
Balancing Innovation with Human-Centric Pedagogy
Lecture at the 2024 IAMSCU Research University Symposium
(International Association of Methodist Schools, Colleges and Universities)
Jan. 26, 2024, Aoyama Gakuin University

Paul Tsuchido Shew

The advent of Artificial Intelligence (AI) is a pivotal milestone for humanity in general and for education specifically. It heralds new possibilities and challenges for educators, students, and institutions alike. This lecture examines the relationship between emerging AI technologies and the field of education, particularly within the context of Christian educational institutions. This lecture advocates for a future where AI is not merely a convenient supplement to education but a transformative force that enriches the learning experience while upholding the core values and human qualities that are central to Christian education.

The Evolution of Technological Waves in Education

Before looking forward, let us look back. Technological innovation is not new to education. The field of education has been continually shaped and reshaped by various waves of technological innovation. Each wave, while distinct in its character and impact, shares a common narrative of initial excitement, followed by a more tempered and realistic integration into

educational practices. This pattern of enthusiastic adoption followed by a critical reassessment is evident in the history of educational technology, from the advent of print media to the proliferation of digital technologies.

The first significant wave can be traced back to the 15th century with the introduction of the printing press. This innovation marked a paradigm shift from oral and manuscript-based learning to accessible printed materials, democratizing knowledge and standardizing educational content across diverse geographies. However, the impact was gradual and intertwined with broader societal changes, highlighting the complex relationship between technology and education.

In the mid-20th century, audio-visual technologies, including radio, film, and television, emerged as new mediums for educational content delivery. These technologies expanded the horizons of traditional classroom-based education, introducing dynamic and multimodal learning experiences. Yet, their integration also necessitated a reevaluation of pedagogical strategies to effectively harness their potential.

The late 20th century witnessed the personal computer revolution, altering the educational landscape with interactive and individualized learning tools. This era introduced the concept of educational software, which promised to revolutionize learning processes through interactivity and engagement. However, the efficacy of these tools depended heavily on their integration into a well-structured pedagogy.

The proliferation of the internet and the advent of online learning platforms further transformed education, offering global access to a wealth of information and learning resources. The rise of Massive Open Online Courses (MOOCs) in the early 2010s exemplifies this trend. Initially heralded as a force that would transform higher education, MOOCs fell far short of their promise. The initial enthusiasm surrounding MOOCs – even predicting the end of

traditional higher education – was a product of hype rather than a grounded assessment of their impact. This serves as a reminder that the potential of new technologies in education must be critically evaluated.

In recent years, interactive and adaptive learning technologies, leveraging advancements in AI and machine learning, have promised new personalized and efficient learning experiences. However, as with previous innovations, their successful integration requires careful consideration of existing educational structures and pedagogies.

As we embark on the latest wave, characterized by generative AI and advanced EdTech, it is crucial to reflect on these historical patterns. While technology has consistently influenced education, the core challenges and issues in education remain largely consistent. Understanding the impact of past technological integrations in education allows us to approach generative AI with a critical eye, aiming to utilize it wisely and productively. The goal is not to be swayed by unfounded optimism but to leverage AI's capabilities in a manner that genuinely enhances educational practices and outcomes.

Generative AI's Role in Current and Future Education

The advent of generative AI presents a unique juncture for education at which longstanding pedagogical methodologies, namely instructional and constructionist approaches, might converge. Instructionalist methodologies are primarily characterized by direct teaching and the delivery of content by educators. This is the more traditional teaching style. In contrast constructionist approaches emphasize student-driven learning through exploration, creation, and problem-solving. Generative AI, with its advanced capabilities, holds the potential to bridge these paradigms, offering a symbiotic blend of guided learning and exploratory education.

Generative AI could potentially harmonize these approaches by providing personalized learning experiences that adapt to individual student needs while also encouraging creative problem-solving and critical thinking. For instance, AI-driven platforms can deliver customized instructional content that aligns with each student's learning pace and style, thereby upholding the instructional model's focus on efficiency and effectiveness. Concurrently, these platforms can stimulate constructionist learning by posing challenges, facilitating creative thinking, and encouraging exploration, thus maintaining a student-centric learning environment.

However, this integration is not without its concerns. There is a growing apprehension regarding generative AI's potential to disrupt traditional educational paradigms, particularly its impact on the role of educators and the nature of student engagement. One of the concerns is the risk of AI replacing the human elements in education. The human interactions, personalized feedback, and emotional support that educators provide are vital to the learning process, aspects that AI is currently ill-equipped to fully replicate.

Perhaps even more concerning, the reliance on AI-driven educational tools may inadvertently lead to a reduction in critical cognitive skills among students. While AI can efficiently handle tasks like information processing, problem-solving, and content creation, there is a serious risk that over-reliance on these tools could diminish students' abilities to develop real understanding and essential skills. This concern underscores the need for a balanced approach where AI is used as a tool to enhance, rather than replace, learning processes.

In contemplating the future of education with generative AI, it is imperative to tread a path that respects and integrates the strengths of both instructionalist and constructionist methodologies. The focus should be on

leveraging AI to complement and augment the educational process, ensuring that the technology serves pedagogical goals. As we envision a future where AI is woven into the fabric of education, it is crucial to maintain a critical perspective, ensuring that these advanced technologies are employed in ways that truly enrich learning experiences while preserving the fundamental elements that constitute effective education.

Integrating AI into Existing Educational Systems

The integration of AI into existing educational systems necessitates a comprehensive understanding that goes beyond the issues involved in the technical adoption of this advanced technology. It calls for an in-depth appreciation of the multifaceted social-technical systems that form the backbone of educational environments. A systemic approach is crucial; one that aligns technological advancements with the overarching pedagogical goals and actively involves the entire educational community – learners, educators, administrative staff, support services, and parents.

This integration process acknowledges that while a minority of students may thrive in self-directed learning environments, the majority of learners benefit significantly from the support and engagement of a broader learning community. The role of AI, therefore, should be envisaged not as a standalone solution but as a component of a holistic educational strategy. This strategy must encompass the diverse needs and contributions of all stakeholders in the educational process.

Community involvement is key in this paradigm. Learners, as the primary beneficiaries of AI integration, should have a say in how these technologies meet their learning needs and preferences. Educators must be equipped not only with the technical know-how to use AI tools but also with the skills to critically assess their application in teaching and learning.

Administrative and support services play a key role in ensuring the seamless implementation and sustainable use of AI technologies. Additionally, at primary and secondary levels, parents must be engaged as partners in understanding and supporting the use of AI in their children's education. AI cannot be a replacement for the essential role of educators, parents and the learning community.

A focal point in integrating AI into education is its influence on cognitive development. An essential consideration is the distinction between *enhancing* cognitive tasks and *replacing* them. AI has the potential to augment human cognition, aiding in complex problem-solving, data analysis, and comprehension. However, an over-reliance on AI for tasks that are critical to cognitive development could lead to a decline in crucial skills such as critical thinking, creativity, writing, and problem-solving.

Therefore, the integration of AI in education should be carefully calibrated to ensure that these technologies support rather than replace the cognitive activities that foster uniquely human skills. The objective should be to use AI as a tool to enhance the educational experience, nurturing skills that are less susceptible to technological outsourcing, such as emotional intelligence, ethical reasoning, and interpersonal communication. This balanced approach will ensure that AI serves as a catalyst for enriched learning experiences, supporting the development of well-rounded individuals equipped to navigate an increasingly complex and technologically driven world.

Preparing Educators and Students for AI-Driven Changes

As educational systems stand on the brink of significant transformations driven by AI, preparing both educators and students for these impending changes becomes imperative. This preparation involves imparting the

technical skills necessary to operate AI-driven tools and fostering an understanding of the broader implications of AI in the educational landscape.

For educators, the advent of AI in education necessitates a dual approach. First, faculty and professional development programs must be designed to enhance their technical proficiency with AI tools. This training goes beyond basic operational knowledge, extending to an understanding of how to integrate these tools effectively into the curriculum. Second, educators must be equipped to critically evaluate the impact of AI on pedagogical practices. This involves an understanding of how AI can be used to complement their teaching methods, how it might influence student learning outcomes, and how to maintain a balance between technology-driven and traditional educational approaches. AI should not be seen as a threat that will replace them, but as additional tools in their pedagogical toolkit to enhance the teaching and learning experience.

Moreover, educators must be prepared to address the ethical considerations surrounding AI in education. This includes understanding data privacy concerns, biases in AI algorithms, and ensuring equitable access to AI-driven learning tools. They should be sensitive to the importance of fostering a learning environment that values human judgment and interpersonal skills alongside the integration of new technologies.

For students, AI-driven changes in education imply adapting to new ways of learning that blend traditional methods with advanced technological interventions. Students need to be trained not just in using AI tools but also in understanding their role as a part of their learning process. This includes developing a critical awareness of the strengths and limitations of AI and learning how to leverage these tools to enhance their educational experiences. This will require engaging the students with a deeper understanding about how to learn and how to advance their own cognitive development. AI tools

give the learners tremendous power to develop themselves, but at the same time, they provide the tools to finish assignments without learning anything besides how to use powerful AI tools. With more responsibility for learning squarely in the hands of students, integrating AI literacy into the curriculum is essential. This involves not only teaching students how to use AI tools but also educating them about the broader societal and ethical implications of AI. By doing so, students can become informed users of technology who understand both its potential and its limitations.

Furthermore, as AI reshapes the job market, students need to be prepared with skills that are complementary to AI capabilities. Emphasis should be placed on developing soft skills such as creativity, critical thinking, problem-solving, communication skills, and emotional intelligence – skills that are distinctively human and less likely to be replicated by AI. Education systems should aim to foster these skills to prepare students for a future where AI is an integral part of the workforce.

Preparing both educators and students for AI-driven changes is a multifaceted process. It involves equipping them with the necessary technical skills, fostering a critical understanding of AI's role in education, and ensuring that the human element in learning remains paramount. This preparation is crucial for navigating the challenges and opportunities presented by AI in education, ensuring that both educators and students are ready to thrive in an AI-enhanced learning environment.

AI for Christian Education: Towards a Theology of AI

The integration of Artificial Intelligence in Christian education, particularly within the Methodist tradition, necessitates a re-examination of educational paradigms in the context of faith and value-based education. The Methodist educational ethos has historically emphasized holistic development,

focusing on character building, social contribution, critical thinking, and ethics education. In the age of AI, this type of education gains heightened importance, demanding a thoughtful synthesis of technological advancements with the foundational principles of Christian education.

In Methodist-related educational institutions, the integration of both instructionist and constructionist approaches has been pivotal in nurturing holistic development. This balanced approach aligns seamlessly with the Christian emphasis on developing individuals to their full God-given potential. In the era of AI, the focus on holistic education becomes even more crucial. Knowledge acquisition, while important, is insufficient on its own. Facts and information are already available through the internet and will be even easier to obtain with the help of AI. The future world will increasingly require individuals who possess not just information but deep comprehension, empathy, robust critical thinking skills and sound ethical discernment. These attributes are distinctively human and not easily replicated by AI. Christian education in the age of AI should, therefore, accentuate these qualities, ensuring that students are equipped not just with knowledge but with the wisdom to use that knowledge responsibly.

The advent of AI brings forth profound theological questions concerning the essence of being human. What does it mean to be human on a planet where we are not the most intelligent beings? Genesis 1:27 asserts that humans are created in the image of God. This passage takes on increasing significance in an age of AI. At the very least, being made in the “image of God” mean that humans are uniquely bestowed with intellectual, ethical and emotional capacity. This enables us to understand ourselves and others, as well as the universe itself. It enables us to discern good from evil, and to make ethical decisions, rather than living by instinct. The emotional capacity enables us to love and be loved, by God and each other. This should inform

our understanding of what it means to be human, and the kind of education we need to fully realize our humanity.

This understanding prompts a deep exploration of how education can nurture these aspects, which are crucial for holistic human development. The rise of AI can serve as a catalyst for Christian education to focus more intentionally on nurturing aspects of humanity that are distinctively human. This includes fostering a deep understanding of the self and others, developing the ability to discern right from wrong, and cultivating the capacity to love and be loved by God and fellow humans.

As AI becomes more prevalent, Christian education has the opportunity to lead conversations on the intersection of technology, ethics, and spirituality. By focusing on the development of qualities that are uniquely human, Christian education can prepare individuals to engage with AI in ways that are grounded in faith and guided by ethical principles. The integration of AI in Christian education, particularly within the Methodist educational movement, should not only focus on technological proficiency but also on nurturing the full spectrum of human potential, something that Methodists have long considered the true essence of education. This approach ensures that as we step into an increasingly AI-driven world, the core values of empathy, ethical discernment, and spiritual development remain at the forefront of our approach to education.

Futuristic Vision - Shaping Education with AI

In envisioning the future of education in an AI-driven world, it is imperative to embrace a forward-thinking and innovative approach that integrates AI not as a replacement, but as an enhancer of the educational experience. The primary goal of this collaborative vision is to leverage AI's transformative potential in a way that acknowledges and addresses its

limitations and challenges. AI in education should be seen as a tool to develop and augment human intelligence, facilitate deeper learning, and personalize educational experiences while maintaining a focus on developing the critical human qualities and abilities that define us.

In this future, AI serves as a catalyst for enriching educational content, diversifying teaching methods, and creating more inclusive and accessible learning environments. However, the role of educators remains central – AI becomes a partner, assisting teachers in enhancing their pedagogical strategies and enabling them to focus more on the individual needs and holistic development of each student.

Moreover, this futuristic vision recognizes the importance of nurturing skills and qualities that are uniquely human. In AI-enhanced education, emphasis is placed on cultivating creativity, critical thinking, empathy, comprehension, and ethical discernment. These are the attributes that not only define our humanity but also ensure that we use AI responsibly and thoughtfully. Christian education should be well positioned to thrive in this environment because it matches our educational values.

This vision also anticipates the continuous evolution of AI technologies, requiring an adaptive and flexible educational environment. It calls for ongoing professional development for educators, ensuring they are equipped to integrate new technologies into their teaching. Similarly, it demands a curriculum that is dynamic and responsive to the changing technological landscape, preparing students not just for the jobs of today, but for the challenges and opportunities of the future.

In conclusion, the future of education with AI is not about diminishing human involvement or capabilities but about amplifying them. It is about creating a symbiotic relationship between human intelligence and artificial intelligence that enriches the educational experience and prepares learners

for a world where AI is an integral part of life. By embracing this vision, we can ensure that education continues to be a journey of human empowerment and advancement.