THE AI ASSIST

Strategies for Integrating AI into the *Very Human* Act of Teaching

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Introduction: Embracing the Future of Education with AI

In 2022, AI became increasingly prevalent across society, from everyday applications to complex systems. While AI's potential made headlines in many sectors, its integration into education presented unique challenges. Unlike other industries where AI adoption was more straightforward, the landscape lacked clear guidelines for implementing these powerful tools in classrooms. Even now, the role of AI in education continues to evolve, leaving many educators without a clear road map.

This book aims to provide that essential guidance. It's crucial to remember that although AI offers significant opportunities to enhance learning, it should complement, not replace, the irreplaceable human qualities that define effective teaching. Empathy, creativity, and the ability to inspire students remain uniquely human traits. As educators, your role is to leverage AI in ways that support these human elements, ensuring technology enhances rather than diminishes the personal connections fundamental to education.

The integration of AI into education is inevitable; the questions now are when and how. This book serves as your strategic guide for effectively integrating AI into education, rather than simply reacting to technological change. It's important to understand AI's twofold impact: it may challenge conventional teaching approaches, but it also presents opportunities to amplify your role as an educator. AI can facilitate personalized learning experiences, allowing you to focus more on nurturing curiosity and building meaningful connections with your students.

As Ethan Mollick (2024) highlights, discussions about AI often fall into a false dichotomy—either AI is all "hype," or the age of superhuman machines is imminent. The reality lies somewhere in between. Current AI technologies, especially large language models (LLMs) like ChatGPT, Copilot, Claude, and DALL-E, are already proving to be valuable co-intelligence tools, significantly enhancing human performance in various tasks. These tools have shown their strengths in areas such as innovation, productivity, and coding, but we are still exploring their full potential.

The first wave of AI adoption was focused on individual use and saw some of the fastest adoption rates in history for a new technology. The second wave, however, involves integrating AI into organizational structures, which will be crucial for achieving true productivity growth. This integration is not just about efficiency or cost cutting; it's about understanding how AI can unlock new opportunities and drive innovation in education.

With each new wave of technology, including personal computers, the internet, and now generative AI, we must decide how to integrate these advancements into our learning environments. This is especially true for generative AI technologies like ChatGPT and DALL-E, which can profoundly support project-based, interest-driven creative learning experiences. By intentionally designing and using these tools, we can align AI integration with our educational values and visions, fostering environments in which students develop as creative, curious, collaborative learners.

This book aims to simplify AI for educators with a clear, practical guide. It is organized as a step-by-step journey, starting with the basics of AI and moving to hands-on classroom applications. Each chapter builds on the previous one, providing a logical and comprehensive progression through the topic. As we integrate AI into education, it is vital to ensure that these technologies support and enhance learner agency rather than constrain it. AI should provide students with opportunities to set their own goals, build on their interests, and feel a sense of ownership over their learning. Furthermore, we must recognize the value of human connection in teaching, ensuring that AI tools serve as supplements to, not replacements for, human teachers. This

approach will help maintain a balance where AI enriches human interaction, creativity, and empathy in the classroom.

In this book, you will learn how to use large language models like ChatGPT for generating personalized writing prompts and providing instant feedback on student essays. You'll explore tools like DALL-E for creating unique and engaging visual aids that can bring complex concepts to life, making lessons more vivid and memorable. Additionally, we'll discuss Copilot as a real-time coding assistant that helps students with programming assignments by offering instant suggestions and debugging tips.

Throughout the chapters, these tools will be explicitly referenced, with clear pointers to the figures where you will find detailed descriptions and instructions for their effective use. Whether it's leveraging ChatGPT to enhance classroom discussions, using DALL-E to stimulate creativity through visual projects, or integrating Copilot to support computer science education, each tool is presented with practical applications and tips for maximizing their potential. This ensures that you have the resources and knowledge to seamlessly incorporate these advanced AI technologies into your teaching practice, thereby enriching the learning experience for your students.

Engage with this book as a dialogue. It is designed to be interactive, prompting you to reflect, challenge your current practices, and grow as an educator at the forefront of technological advancements in education. The narrative here is direct and practical, offering you deep insights and an understanding of how to apply AI effectively.

This new terrain, marked by algorithms and data, may seem daunting, but it is also ripe with opportunity. As we navigate this terrain, this book emphasizes the importance of intention and humanity. The goal is not to create classrooms that are mere extensions of ChatGPT but rather to foster environments where technology is harnessed to enrich human interaction, creativity, and empathy. When you are equipped with the right tools and knowledge, AI can become a powerful ally in the quest for a more enlightened and equitable education system.

We are at a pivotal moment in history—one that demands a reevaluation of the educator's role in an AI-infused future. The question now is how can we

mold that relationship to reflect the values we hold dear in the teaching profession? *The AI Assist* seeks to answer this question, providing a scaffold upon which you can build a future that respects the delicate balance between technological advancement and the timeless value of human mentorship and guidance.

We'll embark on a mission to reconcile the technological surge of AI with the timeless craft of teaching. This is not a manifesto advocating for the replacement of educators with machines, nor is it a treatise pushing a technology-first doctrine. Instead, this book stands as an affirmation of AI's role as a powerful adjunct to the human efforts in education, capable of enriching student learning and broadening the horizons of what's possible in an inclusive, innovative, and impactful learning environment.

The HAIL model—Humanizing, Augmenting, Integrating, and Leveraging AI—is the bedrock upon which this book is built, championing the conviction that human connection, empathy, and creativity are the soul of education. These are the elements that no algorithm can replicate; they're the qualities that AI should aim to support and elevate. We will navigate these themes in an integrated manner, reflecting the fluidity with which AI should meld into the fabric of education. Each chapter highlights practical examples, reflective questions, and links to further resources, painting a comprehensive picture of AI's role in education.

This narrative is born from my experiences as a school and district administrator, where I piloted initiatives to weave technology into the fabric of our classrooms. It was a time of intense learning, and it was a challenge at times to fit the proverbial square peg of technology into the round hole of educational needs. Those experiences, coupled with the advent of AI, have reshaped the landscape of educational possibilities for me, bringing new opportunities and ethical considerations to the fore.

Parallels with the SAMR Model

To guide our thoughtful integration of AI in education, we can draw valuable insights from Ruben Puentedura's SAMR model (2013). This model provides a framework for educators to reflect on how they are incorporating technology

into their teaching, with each level—Substitution, Augmentation, Modification, and Redefinition—offering a progressively more significant impact on teaching and learning outcomes.

I urge you, as an educator, to see AI as a multifaceted instrument—akin to how the SAMR model encourages educators to progress beyond merely substituting traditional methods with digital counterparts. AI, when aligned with this model, can augment your teaching by providing immediate feedback to students, thereby enhancing the learning process. Further, it can modify your approach to education by facilitating new ways of interacting and engaging with content that were previously inconceivable. Ultimately, AI has the potential to redefine education by creating entirely new methods of learning and collaboration, propelled by its data-driven insights and adaptive capabilities.

Before we delve into the intersection of AI and this model, let's take a moment to unpack each layer of SAMR in detail. The first level, Substitution, is where technology acts as a straightforward swap for traditional tools, without enhancing the learning experience. Think of it as reading an ebook instead of a paperback—the medium changes, but the act of reading remains the same. Augmentation, the second level, still replaces the old with the new but with added benefits; for example, a digital thesaurus can suggest synonyms quickly, enriching a student's vocabulary as they write.

The Modification level is where true transformation begins. Here, technology fundamentally changes the task. Imagine students using collaborative online documents to work together in real time, breaking the confines of the classroom walls and enabling a more dynamic learning process. Finally, Redefinition takes us to the peak, where technology allows for brand-new, previously impossible tasks to emerge. Consider students using simulation software to conduct virtual science experiments, allowing for infinite repetitions and manipulations without the constraints of physical lab time or resources.

Just as Puentedura's model advocates for transformative uses of technology in education, I invite you to harness AI in ways that not only change the shape of tasks but also transform pedagogical strategies and learner outcomes. This approach is not about allowing technology to overshadow the

human elements of teaching but having technology support and elevate them, promoting a balance that fosters a rich learning community.

The ultimate aim is to integrate AI in a manner that respects and amplifies our shared humanity. This approach involves using AI to bring forth a deeper understanding of subject matter and to tailor educational experiences to each learner's unique needs and aspirations. The role of AI here is not to supplant the teacher but to serve as a dynamic and responsive tool, enhancing the teacher's ability to connect with and inspire students.

In your journey as an educator in this AI-infused landscape, remember that, like the SAMR model, the use of AI should be a deliberate choice aimed at improving instruction and outcomes. Consider AI's role at each level of the SAMR ladder and strive to push beyond substitution toward transformative teaching experiences. Embrace AI as a partner in the education process—one that brings new dimensions to teaching and learning and opens doors to experiences that prepare students for an increasingly complex and technology-integrated world.

In this light, your approach to AI integration becomes a dance between technology and pedagogy, choreographed with intention and guided by a model that values both innovation and the irreplaceable human touch.

Using the HAIL Model

As you progress through this book, you'll gain increasingly valuable insights into applying the HAIL model. The strategies provided are ready for implementation in your classroom and supported by practical examples and reflective prompts that challenge you to think deeper. This comprehensive approach is designed to equip you, the educator, with the tools needed to chart a course through the evolving landscape of AI in education—a landscape in which human touch remains paramount and AI serves as a tool to enhance the tapestry we continue to weave.

The HAIL model's beauty lies in its ability to be not merely a static framework but a living spectrum that evolves and adapts, reflecting the multifaceted

and dynamic nature of today's classrooms. Recognizing that educators hail from diverse backgrounds, face unique challenges, and teach students with a wide array of needs and aspirations, the model offers fluidity. It acts as a guide, empowering you to fine-tune your strategies and ensure that AI integration is not just effective but also personal and tailored to your classroom's specific tapestry.

Embracing the HAIL model as a continuum acknowledges that planning with AI in education isn't a one-size-fits-all approach; it's about sliding along a scale that ranges from enriching human connection to leveraging sophisticated AI tools. This scale provides a flexible approach to planning, allowing you to adjust the mix of human and AI elements in response to the shifting landscape.

The HAIL continuum balances forward-thinking vision with practical realism. While exploring AI's potential to revolutionize education, I acknowledge the everyday challenges you face. This continuum serves as your guide, illuminating the path ahead while anchoring you to education's core mission: fostering human connections, nurturing understanding, and promoting student growth.

The HAIL continuum starts with Humanize, emphasizing the non-negotiable value of the human touch—empathy and understanding—within the learning process. This principle affirms teaching as an art that goes beyond curricula, embracing human emotions, connections, and experiences and valuing each student's individual path.

Moving to Augment, the continuum delves into enhancing our capabilities with AI's support, striking a delicate balance where technology amplifies the strengths of our educational methods without compromising the personal connection that is the hallmark of great teaching.

The Integrate phase smoothly blends AI tools with established teaching methods. Here, technology enhances our teaching practices, enriching learning while preserving the educator's unique influence.

Leverage represents the forefront of AI-driven education. This phase encourages you to fully utilize AI's capabilities to customize learning, predict needs, and transform students from passive learners into active participants in a dynamic education environment.

The HAIL model thus evolves from theory to practice. It guides you through education's changing landscape, providing the knowledge and tools to effectively combine AI innovations with traditional teaching methods.

How This Book Is Structured

This book's chapters form the core of our exploration—each one is a stepping stone on your journey to integrating AI into education with skill and insight:

Chapter 1: Understanding the Context: We begin by delving deep into the dynamics of your classroom. This chapter is about understanding the unique blend of personalities, learning styles, and existing tech landscape that make up your environment. It's about setting the stage for AI integration that's thoughtful and effective, taking into account your students' diverse needs and capabilities.

Chapter 2: Identifying Goals and Needs: Here, you'll be encouraged to clearly articulate what you aim to achieve with AI in your classroom. Is it enhancing student engagement, personalizing learning, or perhaps streamlining administrative tasks? This chapter helps you set meaningful, achievable objectives, ensuring that the technology you integrate serves a clear, beneficial purpose in your instruction.

Chapter 3: Selecting Appropriate AI Tools: With goals in hand, this chapter explores how to choose the right AI tools. It's not just about what's new or popular; it's about what aligns with your education objectives, your classroom's unique needs, and your personal teaching style. Learn to navigate the burgeoning market of educational technology with a discerning eye, selecting tools that will truly augment and amplify the learning experience.

Chapter 4: Planning and Designing Activities: Now it's time to roll up your sleeves and start designing AI-enhanced lesson plans. This chapter guides you through integrating AI into your curriculum in a way that's seamless and effective. You'll find strategies for marrying technological sophistication with depth, ensuring that every activity is enriching, engaging, and pedagogically sound.

Chapter 5: Implementing AI-Enhanced Activities in the Classroom: Once the planning is done, the real action begins. This chapter offers practical advice for bringing your AI-enhanced activities to life in the classroom. From the logistics of setup and introduction to strategies for keeping students engaged and on track, you'll find a treasure trove of tips for making your AI activities a success. This is also where you'll learn to be agile, monitoring student responses and being ready to adapt as needed.

Chapter 6: Assessment and Reflection on AI-Enhanced Learning: After implementation comes reflection. This critical chapter focuses on your AI integration's effectiveness and the impact it has on student learning. It's about developing a cycle of continuous improvement, where each iteration of AI use in your classroom is informed by the last. You'll learn methods for assessing both student progress and your own teaching, using these insights to refine and enhance your approach.

Chapter 7: Fostering a Culture of Continuous Improvement in AI Integration: Commit to ongoing enhancement of your AI-integrated teaching practice. This chapter is about cultivating a mindset of perpetual growth and adaptability. You're encouraged to view each lesson—each interaction with technology—as an opportunity to learn and evolve. Dive into the iterative process of refining your AI integration, drawing from student feedback, emerging AI tools, and the latest in professional development. Learn to embrace change as the only constant, using it to fuel your pursuit of education excellence. This chapter guides you in maintaining innovative teaching practices, ensuring that AI thoughtfully enhances both your instruction and your students' learning experiences.

Each chapter aims to inform, inspire, and empower you. As you begin integrating AI into your teaching, remember: This isn't just about adopting new technology. It's about advancing the fundamental education goal of fostering knowledge and understanding.

The HAIL model guides you throughout this book, offering direction whether you're new to AI or experienced in education technology. It reflects my conviction that AI can improve education while addressing real classroom

challenges. The model helps you navigate the many possibilities AI offers in education.

A Practical Guide for the Educator

In the upcoming chapters, you'll find lesson plans that apply the HAIL model, demonstrating how human interaction and AI can seamlessly work together in the classroom. The principles of this model emphasize the crucial role of human connection alongside AI's powerful capabilities, setting the stage for their integrated use in education.

At the core of this practical approach is the sliding-scale concept, an adaptable framework that goes beyond theory. This model empowers you to balance your essential human insights with the data-driven perspectives that AI technologies provide, ensuring your teaching methods meet the evolving needs of today's classrooms.

Imagine the HAIL model as a spectrum, with Humanize and Leverage at opposite ends and Augment and Integrate in between. Like a pianist selecting the right keys to create a fitting melody, educators can choose the appropriate approach for each learning situation. This flexible model allows teachers to tailor their methods—whether that means emphasizing human connection, personal narratives, or leveraging AI's customized feedback—to best suit the needs of their students and the subject matter.

The continuum's vitality lies in its versatility. It is not about adhering to rigid benchmarks or ticking off criteria. Rather, it serves as an advisory, shedding light on the wide array of options educators have at their disposal. Whether it's deploying a novel AI application or deepening human relationships within a technologically advanced lesson, the sliding scale provides guidance and support, aligning with each lesson's unique needs and the learners' varied necessities.

The sliding scale advocates a balanced stance, avoiding any overreliance on either extremity. By recognizing the placement of a particular teaching session or activity along this continuum, educators are equipped to make

judicious decisions, ensuring that neither the human factor is eclipsed nor the potential of AI is underleveraged.

Why is such dynamism crucial? Classrooms are far from being monolithic; they're dynamic ecosystems brimming with students who bring a plethora of experiences, learning speeds, and levels of understanding. The sliding-scale concept acknowledges and embraces this heterogeneity, enabling educators to adjust and refine their instructional methods dynamically. This ensures that each student connects with the lessons, feels acknowledged, and stays actively involved, regardless of their starting point.

Delving deeper into the HAIL model's pragmatic use reveals that the synergy of human insight and AI is not solely about the incorporation of technology. It's a conscious, nuanced blend, guaranteeing that every teaching moment, activity, or project is imbued with the sincerity of human interaction, amplified by the precision and flexibility of AI. The sliding scale acts as a navigational tool on this voyage, steering educators toward developing comprehensive, equitable, and forward-thinking learning experiences for every student.

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Nathan's distinguished career encompasses roles as a teacher, an elementary and high school administrator, and a university adjunct professor. Notably, he has served as the director of elementary curriculum and instruction for Metropolitan Nashville Public Schools and as an education supervisor at NASA's Johnson Space Center. His previous positions include chief education officer at WeVideo and vice president of national product line at Savvas Learning.

A dedicated advocate for global sustainability, Nathan serves as the U.S. State Ambassador for the Climate Action Project, a collaborative initiative supported by the United Nations, World Wildlife Fund, NASA, and Jane Goodall Institute. He is also an advisor for Take Action Global (TAG).

An accomplished author, Nathan has contributed significantly to the education landscape, writing extensively about instructional coaching, innovative teaching methods, and the integration of technology in classrooms. His publications include *Everyday Instructional Coaching: Seven Daily Drivers to Support Teacher Effectiveness*; *The New Art and Science of Teaching Mathematics* (coauthored with Robert J. Marzano); *WeVideo Every Day: 40 Strategies to Deepen Learning in Any Class*; *Mathematics Unit Planning in a PLC at Work®, Grades PreK–2* (coauthored

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Nathan earned a bachelor's degree in general science–chemistry from Harding University, a master's degree in administration and supervision from the University of Houston-Victoria, and a doctorate in learning organizations and strategic change from David Lipscomb University.

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