

The Future of Schooling **IN A GENAI WORLD**



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INVESTOR IN PEOPLE

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Book Abstract and Keywords

Abstract

In most of the world, models of schooling look remarkably similar. Young people get up in the morning, get dressed, and go to a building called “school.” In these places, trained professionals called “teachers” organize lessons for large groups of students in order to “cover” a curriculum dictated to them by a state or provincial school board. We know that these kinds of schools are no longer needed. And we don’t need human teachers for that kind of transactional teaching; generative artificial intelligence (GenAI) can now oversee those learning processes for us. And GenAI is only getting smarter.

In this book, we raise key questions about the future of schooling:

How is GenAI changing teaching, learning, and assessment, and how will it continue to do so?

How does and will GenAI challenge the need for schools as we have known them historically?

How can school leaders and teachers get ahead of the GenAI change curve to bring empowered, student-centered learning to their schools?

What kind of leadership actions are needed to design new forms of schooling based on the advent of GenAI?

How do we embed more of the human traits of joy, belonging, care, and collaboration into these new designs?

What should parents ask their school leaders as they negotiate change through the next decade of schooling for and with their children?

Through each chapter, we weave data, anecdotes, stories, examples, and exemplars from our research to share and interpret emerging GenAI best practices in this dynamic era of massive change.

Keywords: Education; schooling; school design; pedagogy; educational leadership; educational technology; generative artificial intelligence; issues in education; 21st century/future-focused learning; sociology of schooling

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Chapter 1

The Cloud is the Limit

No Time to Stand Idly By

In 2024, ChatGPT 4 successfully passed virtually all of the high school graduation and university entrance exams, including the Law School Admissions Test. It also passed the Uniform Bar Examination to qualify as a lawyer. For those who believe in the current array of assessments and examinations as the “gold standard” of the education system, fasten your seat belts. You’re in for a bumpy ride. The question isn’t *whether* generative artificial intelligence (GenAI) emerges to transform teaching and learning, it’s how long we take to attempt to harness it into an equity-focused tool that brings higher levels of learning to all of our students.

Let’s cut to the chase of what we learned in writing this book. We will need schools in the future. We will need teachers in the future.

However, we will need designs of learning, teaching, and leading that are drastically different than before. And we need them in 3–5 years, not 100 years.

Enjoy the ride.

Pedagogies of Passivity

One hundred years ago, nearly all schools had slate blackboards with chalk in every classroom as the primary technology medium teachers used to share real-time content with their learners. The technology then evolved to green boards, still used with chalk. Later, the invention of the overhead projector enabled educators to face their classrooms, often teaching students in the dark, except for the light bulb of the overhead. The next technology innovation was the whiteboard, which replaced chalk with markers and doubled as a projection screen. Next-generation smart boards evolved with touch screens and ports for computers, speakers, and projectors to be attached. PowerPoint presentations beamed through those smart devices replaced traditional classroom notes and became the default pedagogical tool of teacher-focused lessons.

However, through all of these innovations, the basic pedagogical philosophy remained the same throughout the 20th century. A typical classroom today –

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one-fourth of the way into the 21st century – still has a teacher standing in front of students and talking at them for the majority of the instructional time. Children are mostly passive bystanders in their own learning, with the extrinsic motivation of a practice worksheet for today’s lesson and a test covering the content of the week’s lessons on Friday.

In the current age-based system, if you are seven years old, you are just finishing first grade. If you are 12, you just finished sixth grade.

Rinse and repeat.

Smart Schools for a Smart World

We are not dealing with GenAI right now. Our board wants us to take it slow and not get out ahead of it. So, we will deal with it down the line. – Middle School Principal

GenAI is here, and it’s really going to impact what we do. We put together, as we call it, the RAID team. It’s the research and development AI team. And it’s a team of staff that are passionate and interested in learning about artificial intelligence. GenAI allows us to develop resources, allows us to lift the benchmark across the place. – High School Principal

Most of us would never submit a document to a teacher, professor, or boss without using the spelling and grammar check tools embedded in our word processing software. Most of us would never think twice about using the recommended route proposed to us by our smartphone’s GPS device. Similarly, most of us would not hesitate to board an international flight, even though we know that the pilot’s hands are physically on the control column or stick for only minutes of the flight. The rest of the time, the pilot is interacting with advanced avionics to determine the next best step to provide a safe, smooth flight. This technology does not make human contribution less important. With technology on board, streaming information every second, human evaluation and decision-making become even more important.

Most of us are comfortable with the above examples of AI technologies in our everyday lives. So, why are many educators so hesitant about the role of GenAI when it comes to schooling? Why does the main concern with and discussion about the role of GenAI in schooling often come down to how students may be using it for cheating? It seems that collectively, we as educators are missing the point. In planning this book, we asked what might happen if we collectively looked beyond the obvious fear that GenAI can be used to facilitate cheating and looked instead at how these tools can be used to transform learning.

As discussed above, most of us attended formal schooling from the time we were very young. We sat facing forward in desks, listened to teachers talk, and (mostly) followed a set of rules and procedures that programmed us to stay quiet and passive while we went through periods of creative genius (at least two) and biological changes that shaped us. Many of us remember a hero teacher who

broke that mold and got to know us, let *us* determine at least some aspect of our learning journey, or at least seemed to love teaching. Schools were developed as sorting institutions to predict who goes where in life, and it is often clear from the pedagogy being used that this assembly line approach to schooling became obsolete a long time ago. Education researchers can predict students' test scores based on their postal codes and suburbs, which reveal where they go to school. With few exceptions, the design of schools has yet to be fixed; if schooling can be reimagined, perhaps the experiences of students who go to mainstream schools might be less like a sentence imposed for a crime and more of an inspiring journey of hope and opportunity.

The Urgent Need to Reconsider the Way We Do Schooling

At least twice before in history, with the advent of the printing press in 1440 and the creation of Google in 1998, transformative technology enabled those with access to share and engage with the written word and other media, profoundly altering the human experience. In 2011, [Dittmar \(2011\)](#) chronicled the rise of European access to the printing press, which made books more accessible to those who could read. In the first 10 years following its invention, there were no more than 10 locations in the world, all in Western Europe, which had a movable-type press. By 20 years, nearly 20 locations had a printing press. And even in 1500 – 60 years after its invention – there were still only about 100 presses across Western Europe with about two million books available. By 1800, printing presses in operation throughout Western Europe had already produced more than 20 million separate book titles. By 1840, with presses spreading even further afield, output rose tenfold to an estimated two billion books. The invention created a need for reading teachers, which in turn drove the demand for more books. About two billion books within 400 years of Gutenberg's invention. This seemed like an incredible rate of growth, and it was.

However, when Google launched in 1998, Brin and Page initially indexed 26 million distinct website links. Two years later, Google had evolved to include one billion websites. By 2005, the search engine had sorted eight billion sites ([Google, 2000](#), June 26; [Google, 2005](#), October 5; [Vise & Malseed, 2005](#)).

Four hundred years to get to two billion published books.

Seven years to get to eight billion indexed websites.

With the advent of Google, humanity entered a new era of information access.

Following the public release of ChatGPT in 2023, internet users gained unprecedented access to a generative AI system trained on vast datasets. These datasets comprise publicly available and licensed sources, enabling new ways to engage with information at scale. The potential is to train GenAI to search and synthesize from more than 130 trillion sources of information as it grows and evolves through our training it on what to use and what not to use ([OpenAI, 2023](#)).

Unlike the spread of the printing press in Europe, which required the physical acquisition and movement of an expensive and unwieldy piece of equipment, as well as training in how to use it, all of us with internet access now have a virtual

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reference librarian and research assistant available 24/7 on our smartphones. With very little work on our part, these assistants can help guide us to conduct research, analyze data, write summaries and reports, disaggregate themes, design presentations, write music, create art, find connections, stay ahead of trends, and sort big data sets of relevant information.

In this context, what do we need from schools? Do we need them to be places where young people go to watch their teachers work? Do we need classroom layouts with rows of desks facing forward so that teachers can more easily monitor student behavior while guiding them toward a singular learning goal? Do we need all students to be on the same page at the same time as they prepare for high-stakes state-mandated tests? Can we still make the claim that this industrial age model is fit for purpose?

Do We Need Schools as We Know Them in a GenAI World?

In most of the world, models of schooling look remarkably similar. Young people get up in the morning, get dressed, and go to a building called “school.” In these places, trained professionals called “teachers” organize lessons for large groups of students in order to “cover” a curriculum dictated to them by a state or provincial school board. Students mostly sit passively at desks lined up in rows positioning them to each look forward, not at each other, so that they are more readily able to comply with their teachers’ commands. They go through this ritual day after day, year after year. Learners are asked to produce “correct” answers to predetermined questions on sterile assignments, interrupted only by recess, lunch, and the occasional movie or special event on a Friday. Although successful alternatives to this approach have popped up around the world, the majority of young people continue to be passive learners – human cogs in an assembly line approach to learning as part of a mass-produced education factory. We know that these kinds of schools and the educational results they produce are no longer needed. And we don’t need human teachers for that kind of transactional teaching; GenAI can oversee those learning processes for us now. And GenAI is only getting smarter. So, the real question is, how can we harness the potential of GenAI to enable teachers to use their valuable expertise and time to teach at higher levels and personalize the learning journey with the support of emerging tools?

In this book, we raise key questions about the future of schooling:

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Our Vision

As educators and authors, our vision for schooling is focused on promoting the uniqueness of each child and supporting his or her potential to develop into an extraordinary human being. In the current system, school typically functions as a sorting process, built on a factory model. Massified school systems were purposefully designed to “weed out” and segregate young people using outdated assessment schemes and paradigms of “average,” in which children are labeled from an early age using measurements that favor those with wealth and privilege. In some places, scores on standardized tests correlate almost eerily with post codes, neighborhoods, and family wealth rather than with academic potential.

We envision schools in which children are motivated to get up in the morning and excited to explore their passions with educators and community members who bring joy to their work, inspiration to their teaching, and future-focused ideas to their pedagogy. We consider the development of intellectual curiosity and young people taking charge of their own learning (self-regulation) as essential components of school design. A successful school might be described as happy people learning together in diverse ways, using GenAI alongside human educators to provide personalized tutoring, individual support, and ongoing formative assessment guidance for each young person. Making use of the GenAI tools currently available, each student will have access to their own “reference librarian” and “personal assistant” to guide their learning journey. These tools are available now and, as GenAI continues to evolve over the next decade, they will be available, at scale, for all children to use in all schools.

Our framework and vision for schools are centered on the work of John Dewey, the father of progressive education. Through his work in the 1900s, Dewey revolutionized the notion of schooling, challenging educators to move away from assembly line approaches to pedagogies that provide young people with personalized learning that fits their special strengths. He challenged the “textbook and test” approach to curriculum, instruction, and assessment. While Dewey’s work on schooling took place long before the advent of GenAI, these powerful tools can be used to help educators bring his theories to life.

What is AI and What is GenAI?

Artificial intelligence (AI) tools quickly find and sort existing information and predict data based on the sources available. AI uses current information to help users navigate the vast amount of data and information available to us on the internet.

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For example, you might notice that when you do an online search, Google often predicts the results based on your prior queries. Similarly, you may receive marketing information from online stores where you previously made a purchase, telling you that you're missing out on a sale, or you left a product in your cart that you may want to buy for an upcoming trip, which is noticed in your calendar. All of these functions are run by AI tools. AI also drives sports simulations used by athletes to improve their skills and mastery of key fundamentals. From GPS directions to health care to banking, AI is a transformative force reshaping every aspect of human life and impacting the work of all businesses and institutions around the world (Harris, 2023; MIT Technology Review Insights, 2023; Stanford Institute for Human-Centered Artificial Intelligence (HAI), 2024).

GenAI, the evolution of AI, goes beyond finding and sorting existing content. It places that content into context for the user and generates new, original content. While using AI is a transactional process of information gathering, using GenAI is a relational process in which the tool's relationship with the user grows over time. It remembers the responses of the human user and refines its content creation for subsequent searches based on the feedback it receives. GenAI has already changed how global businesses handle transactions, how communication occurs, and how informal education takes place. It assists people to compare, contrast, and generalize information across the broad internet or from specific sources selected by the user. GenAI describes learning models (such as ChatGPT) that can be used to create original content, including text, audio, art, music, images, data summaries, presentations, simulations, and videos in rapid fashion based on focused sources of information and prompts (McKinsey & Company, 2024). It functions as a personalized reference librarian at your fingertips, responding to prompts and questions to provide you with information within the context you define. GenAI, in its infancy, is only as good as the sources it accesses and the prompts it receives from the user. GenAI evolves and changes as it learns from humans how to organize and interpret the vast amount of information and data available to it.

The advent of GenAI is a leapfrog technology that presents opportunities and challenges similar to the introduction of the personal computer in the 1980s (Gates, 2023). GenAI applications are already changing broad fields in education and are ongoing topics of debate in universities, schools, governments, and the centers in which professional learning for varied occupations occurs (The United Nations Educational, Scientific and Cultural Organization (UNESCO), 2023; World Economic Forum, 2024b). GenAI forces school leaders, researchers, policymakers, and AI developers themselves to rethink and reconsider the future of contemporary schooling in a GenAI world (Harvard Online, 2023; Hazan et al., 2024). Despite a plethora of reports and descriptive research on GenAI, there is a lack of first-hand empirical research connecting the voices of diverse stakeholders and translated for a mass audience of informed readers. Few researchers have attempted to disseminate the insights of AI experts to a broad education audience, which cares less about how to build the engine of GenAI, than how to effectively drive the car. That is, until GenAI drives the car for us.

What do we want and need schools to be in a GenAI world? In this book, we examine the perspectives of experienced stakeholders on the emerging transformation in contemporary schooling facilitated by GenAI. Through each chapter, we weave data, anecdotes, stories, examples, and exemplars from our research and interpret the best practices emerging in education in this dynamic era of massive change.

Using this unique approach to data collection, we provide relevant sources of data aimed at people with a child or grandchild in school, the teachers of those children, school leaders, those who influence education and social policy, and people generally interested in the institutions of schooling. In our investigation of the potential of GenAI for schooling, we tapped the opinions and experiences of those developing GenAI tools and applications, the thought leaders discussing GenAI, and those already integrating it into their schools. Incorporating their insights, we offer a GenAI reference book for every boardroom and staff room as we continue to engage with this technology in the next few years.

The Roots of John Goodlad's *A Place Called School*

In *A Place Called School* (Goodlad, 1984), a seminal treatise on the role and function of schools in society in the 1980s, John Goodlad offered a comprehensive look at the reality of school for that generation, at a time when standards for schooling were being developed. A comprehensive examination of American education, *A Place Called School* was based on an extensive on-site study involving more than 1,000 classrooms nationwide. Goodlad (1984) gathered research data through interactions with teachers, students, leaders, parents, and community members to gain a holistic understanding of the educational landscape.

Goodlad's findings revealed a significant disparity between the intended goals of education and actual experiences within schools. He observed that, while schools often had well-articulated objectives, their implementation frequently fell short, leading to inconsistencies in educational quality and student engagement (Wiggins, 1983). In his recommendations, Goodlad advocated for a comprehensive redesign of the educational system, addressing aspects such as curriculum development, school-community relationships, teaching methodologies, and the effective use of instructional time. He argued that piecemeal reforms were insufficient and that a systemic approach was necessary to achieve meaningful and lasting change in education (Goodlad, 1984). *A Place Called School* remains a landmark study, offering valuable insights into the complexities of the American educational system and serving as a foundation for ongoing discussions about school reform and the pursuit of educational excellence.

Flash forward to today and our study, in which we investigated how classrooms in countries around the world might change and are changing with the advent of GenAI. To gather data, we used iterative surveys administered to three audiences and conducted in-depth interviews to provide insights and first-hand experiences not yet found in the literature. Participants included stakeholders from around the world: (1) people who are leading, inventing, and developing GenAI and its applications; (2) education thought leaders, gurus, and pundits

who are influencing opinion, practice, and policy; and (3) principals who are early adopters of GenAI in their schools. Drawing from the surveys and interviews with these experts, we present the game-changing potential of GenAI for schooling – the tremendous opportunities as well as the serious challenges.

We employed a modified version of the Delphi method supported by a backcasting approach, based on two surveys and semi-structured interviews conducted over time. The Delphi method is an iterative process used to gather feedback from a group of experts in two or more rounds (Aichholzer, 2009; Geist, 2010). Researchers use this method as a long-range forecasting technique to elicit, refine, and draw upon the collective opinion and expertise of a panel of experts. The Delphi method, therefore, is well-known for its unique strengths as a planning, forecasting, and decision-making tool (Gupta & Clarke, 1996) to investigate future-related and forecasting inquiries (Okoli & Pawlowski, 2004) and shape a set of alternative future scenarios (McGrath & Fischetti, 2021). In our research, by incorporating sequential surveys interspersed with our research team’s feedback, we used the Delphi method as a systematic information-gathering tool for designing the future of schooling we imagine (Linstone & Turoff, 1975). Backcasting is an approach used to assess a desirable future with a focus on discovery and is thus suitable when envisioning an alternative future (Hines et al., 2019). Backcasting can be used to develop preferred futures and work backward from a goal to identify the pathway (Bibri, 2018). Semi-structured interviews have been used as an appropriate and fruitful data collection tool in research into educational issues. These types of interviews, which offer a well-grounded tool to find out what people think in depth and provide important insights (Merriam & Tisdell, 2016), were referred to as “the main road to multiple realities” (Stake, 1995, p. 64). By integrating the backcasting approach with the Delphi method and conducting multi-stakeholder interviews, researchers can explore complex issues and develop alternative plans for action (McGrath, 2021; Zimmermann et al., 2012).

Using this novel approach, we conducted two rounds of iterative surveys followed by semi-structured interviews with survey respondents. We also reviewed and coded video and audio presentations of some of the world’s leaders in GenAI to identify common themes. In the first round, we asked survey participants for their opinions about the implications of GenAI for a place called school. In the second round, we provided participants with a summary of what all respondents told us in the first round, then asked them to edit and revise their survey information and interview answers based on the summary of the first-round data. We gathered their opinions as to whether we understood their initial responses accurately and if, from their expert perspectives, we were on point with the potential of GenAI to transform schooling as we know it. Based on their input, we then created our list of the themes, vignettes, ideas, opportunities, and pitfalls of GenAI, and our recommendations for moving forward with these tools. Through our findings, we connect the future-focused dramatic changes of GenAI back to the work of Goodlad in the 1980s to determine the level to which status-quo schooling needs to change. This unique approach enabled us to develop this book, which we hope will guide those who are teaching, leading schools, and