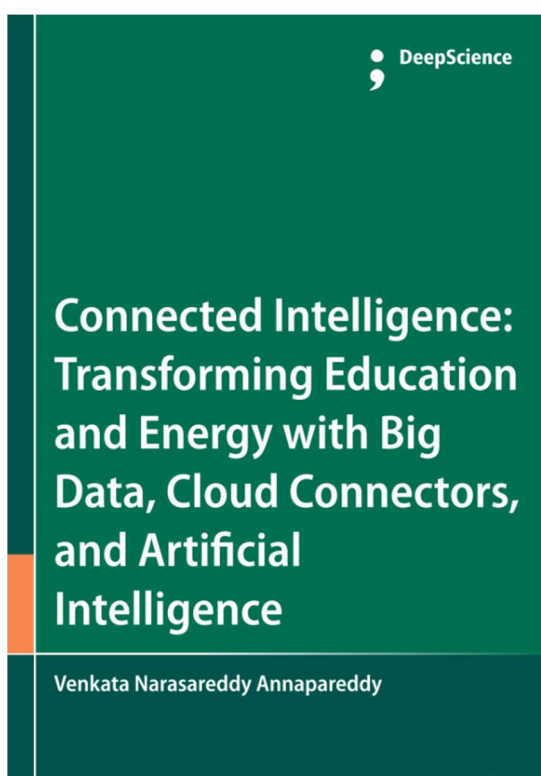


Book Review: Connected intelligence: Transforming education and energy with big data, cloud connectors, and artificial intelligence

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Annapareddy (2025), the author explains the transformative impact of emerging digital technologies on contemporary society, particularly in the fields of education and energy management. The book presents the concept of *connected intelligence* in which refers to the integration of artificial intelligence, big data, cloud computing, and interconnected digital infrastructures to support intelligent decision-making and sustainable education development.

The book presents the growing role of artificial intelligence and big data in education. The educational institutions are increasingly adopting data-driven approaches to improve teaching, learning, and administrative processes in all sectors. AI-powered learning systems can provide personalized learning by adapting contemporary contents, learning assessments, and learning pathways to individual needs. Furthermore, the cloud technologies enable scalable and flexible learning environments, supporting online education, collaborative learning, and real-time access to educational resources.

This book consists of 12 chapters explaining the artificial intelligence, big data, cloud computing, machine learning, and the internet of things that are transforming education and energy systems through interconnected digital infrastructures. The details can be found in the following.

Chapter 1: Understanding the convergence of artificial intelligence, big data, and cloud technologies in shaping the future of education and energy systems. This chapter introduces the concept of connected intelligence by emphasizing the convergence of AI, big data, and cloud technologies. The author explains these technologies complement one another to create intelligent ecosystems capable of collecting, processing, and utilizing large amounts of data. In education, this convergence supports personalized learning and data-driven decision-making.

Chapter 2: Leveraging connected intelligence to enable smarter decision-making across educational institutions and renewable energy infrastructures. This chapter focuses on decision-support systems powered by connected intelligence. Educational institutions can use data analytics to improve student outcomes. Similarly, energy organizations can employ intelligent systems to forecast demand, optimize

supply, and improve operational efficiency. The chapter illustrates how real-time data transforms traditional decision-making processes into proactive and evidence-based practices.

Chapter 3: Building data-driven educational models through the integration of machine learning and predictive analytics. This chapter discusses the role of machine learning and predictive analytics in education. The predictive models help educators to identify students at risk of academic failure, personalize learning pathways, and enhance student engagement. The chapter argues that educational institutions can improve learning outcomes by using data to anticipate student needs and provide targeted interventions.

Chapter 4: Designing scalable IT frameworks using cloud connectors. This chapter examines cloud connectors as technological bridges that integrate different educational and energy management platforms. Cloud-based architectures enable seamless communication among learning management systems, databases, IoT devices, and energy monitoring platforms as well. The chapter emphasizes scalability, interoperability, and flexibility as essential features of modern digital infrastructures.

Chapter 5: Applying big data analytics to enhance curriculum development, administrative efficiency, and sustainable resource planning. The chapter explores how big data analytics can improve educational quality and operational efficiency. Data were collected from learning environments can inform curriculum design, evaluate teaching effectiveness, and support evidence-based policy development. In addition, institutions can use the data analytics to optimize resource allocation and long-term planning. The chapter demonstrates how educational leaders can transform institutional management through data-driven strategies.

Chapter 6: Exploring the role of artificial intelligence in driving automation and innovation in smart energy and smart campus ecosystems. This chapter investigates AI applications in both educational and energy contexts. AI-driven automation supports intelligent campus operations including classroom management, facility monitoring, and administrative tasks. AI enables predictive maintenance, energy forecasting, and automated control of smart grids. The chapter presents AI as a catalyst for innovation and operational efficiency.

Chapter 7: Creating interconnected digital environments that support real-time insights, adaptive learning, and energy optimization. This chapter discusses the importance of interconnected digital ecosystems that integrate cloud services, IoT devices, and data analytics platforms. These environments generate real-time insights that support adaptive learning experiences and efficient energy management. The chapter highlights the continuous data flows allow organizations to respond rapidly to changing conditions and user needs.

Chapter 8: Developing comprehensive data architectures for educational institutions. This chapter addresses data architecture and governance. The institutions can design integrated data systems that ensure consistency, accuracy, accessibility, and interoperability across platforms. An effective data architecture supports learning analytics, institutional reporting, and strategic planning while reducing fragmentation of information systems.

Chapter 9: Implementing secure and compliant AI-driven solutions. This chapter focuses on cybersecurity, privacy, ethics, and data governance. The challenges such as data protection, algorithmic bias, regulatory compliance, and ethical AI use. The chapter argues that trust, transparency, and responsible governance are essential for the sustainable adoption of AI technologies in education and energy sectors.

Chapter 10: Transforming traditional educational delivery methods through intelligent cloud systems. This chapter explores the evolution of teaching and learning through cloud-based technologies. Intelligent cloud systems support online learning, hybrid instruction, virtual classrooms, and collaborative educational environments. The author highlights how cloud technologies increase accessibility, flexibility, and scalability while enabling educators to monitor student progress more effectively.

Chapter 11: Enhancing energy efficiency and sustainability in educational institutions. The chapter focuses on sustainable campus development through smart energy technologies. IoT sensors, smart grids, and AI-enabled monitoring systems help educational institutions reduce energy consumption, optimize resource utilization, and lower operational costs. The author emphasizes the role of intelligent energy management in supporting environmental sustainability and institutional resilience.

Chapter 12: Envisioning the future of education and energy through connected intelligence. The final chapter presents a future-oriented perspective on connected intelligence. The emerging technologies trends such as advanced AI, automation, edge computing, intelligent infrastructure, and cross-sector collaboration. The chapter argues that governments, industry, and educational institutions must work

together to develop sustainable and innovative ecosystems. The author presents connected intelligence as a strategic framework for tackling future educational, economic, and energy challenges.

The book presents a comprehensive framework for understanding about AI, big data, cloud computing, machine learning, and IoT are converging to transform education and energy systems. Across its twelve chapters, the author demonstrates that connected intelligence enables personalized learning, data-driven decision-making, smart campus management, renewable energy optimization, and sustainable development. The main point is that the future of education and energy relies on smartly combining digital technologies, backed by effective management, ethical practices, and teamwork across different sectors.

As schools and energy companies start using smart technologies more, it's important to talk about cloud-based systems, machine learning, and predictive analytics. The book effectively illustrates AI can support personalized learning and educational decision-making. These examples make the text particularly useful for policymakers, administrators, and educators. The AI-driven systems can contribute to more sustainable educational and energy practices through improved resource allocation, predictive maintenance, and data-informed decision-making. More critical engagement with issues such as algorithmic bias, surveillance, data ownership, and the social consequences of AI adoption would have provided a more balanced analysis. In educational contexts, for example, concerns regarding student data privacy, academic integrity, and overreliance on AI-assisted learning tools deserve deeper exploration.

From an educational perspective, the book could benefit from a more detailed discussion of pedagogical theories and learning sciences. While AI-enabled personalization and adaptive learning are highlighted, the relationship between these technologies and established educational theories such as constructivism, inquiry-based learning, self-regulated learning, and social learning is not extensively examined. Consequently, the educational discussion occasionally appears technology-driven rather than pedagogy-driven. The digital technology is now challenging school practices and students' learning pathways.