Chapter 1
Disrupting Algorithmic Culture:
Redefining the Human(ities)

James Hutson
https://orcid.org/0000-0002-0578-6052
Lindenwood University, USA

Daniel Plate
https://orcid.org/0000-0002-1238-5425
Lindenwood University, USA

ABSTRACT

Academia must reevaluate its model in the face of AI and ML. Disciplinary boundaries are outdated, requiring interdisciplinary research and collaboration to understand algorithms and ML. Institutions should integrate new technologies while recognizing the importance of human oversight and collaboration in the human-AI partnership. The "human-in-the-loop" model enables new knowledge creation. Human fact-checking and critical evaluation are vital due to AI limitations. Empathy builds trust between humans and AI, ensuring alignment with human values. The illogical, irrational, and emotional aspects of human cognition drive creativity. Through interdisciplinary collaboration, human oversight, empathy, and leveraging unique human qualities, academia can navigate technological advancements and foster a symbiotic relationship with AI.

1. INTRODUCTION

The world is rapidly evolving and changing at a pace that is unprecedented in human history. We are currently in the midst of the Fourth Industrial Revolution (Industry 4.0), where technology is disrupting every aspect of our lives, from the way we work and communicate to the way we learn and live (Schwab, 2017). This requires an exploration of this new era and its impact on the future. From the rise of generative AI to the disruption of higher education, the key trends and developments shaping the world of tomorrow. This chapter provides a comprehensive overview of the future, its challenges and its opportunities, and provides higher education academic administrators, faculty and staff with an

DOI: 10.4018/979-8-3693-0074-9.ch001

understanding of the world we are entering. We will outline the ways in which institutions can reprioritize mission and goals and how to adjust curriculum, learning outcomes, assessment, and more to meet the needs of tomorrow's learners. The roles of higher education administration, faculty, staff, and even students will also be discussed.

"The future is now." The hyperbolic claim has been made for generations and is often used during times of technological innovation or change (Messerli et al., 2019; Peng et al., 2022; Yelland, 2005). But we may genuinely use the phrase to help identify times of social, cultural, and technological revolution. For instance, the Agricultural Revolution made stable social life possible with the shift from hunter-gatherer societies; the Industrial Revolution created cities of over 1 million, collapsed space and time with new forms of technology and transportation; and the technological revolution of the Information Age transformed industry as ideas became the currency of modern office life (Braidwood, 1960; Castells, 2010; De Vries, 1994). Industry 4.0 is upon us, but the full extent of the disruption can only be glimpsed today. Driven by emerging technologies such as artificial intelligence (AI) and the Internet of Things (IoT), it is also characterized by the integration of digital, physical, and biological systems and the blurring of the lines between the physical, digital, and biological spheres (Castells, 2010). Change is coming rapidly and will be felt broadly. Upskilling and retooling will be more and more common with current positions being automated or modified and new jobs being created. A new chapter in human history begins now and we need to prepare not only the students of tomorrow, but of yesterday for what lies ahead.

Human civilization is built on innovation and change. Each of the first three "revolutions" noted brought with them new ways of working, living, and organizing society, as well as disruption and upheaval. For instance, the Agricultural Revolution around 10,000 BCE saw the move away from small groups of hunter-gatherers constantly moving in a nomadic society to find food and allowed us to settle down in one place. Through the development of agriculture and the domestication of animals, the growth of large permanent settlements was made possible. This change brought about significant disruption, as people had to learn how to farm, create new tools and technology, and adapt to new ways of living. As a result, society began to specialize, with some people focusing on farming and others on other tasks, such as metalworking, pottery, and weaving. This specialization led to the development of new skills and roles within society. For example, farmers had to learn how to manage land, plant and harvest crops, and store food, while artisans had to learn how to create new tools and goods (Kerridge, 2013). Shortly thereafter, writing on was invented by the Sumerians in Mesopotamia (3400 BCE). The logo-syllabic script known as Cuneiform was pressed into clay tablets to record economic transactions first and then stories of the gods later. From there developed the scroll widely used in Eastern Mediterranean and Egyptian civilizations followed by the Roman invention of the codex (or bound book with pages we all know today). Arguably the greatest technological innovation in human history, writing allowed for information to be shared across space and time, passed down from generation to generation. Other technological innovations, such as the wheel, plow, and metallurgy could be shared, and new ideas added to them. Such was how civilization advanced, further spurred on in the Renaissance with the invention of the printing press, effectively democratizing information and education.

Equally disruptive were the two most recent revolutions, emerging out of the Age of Enlightenment. The Industrial Revolution was a period of rapid industrialization and technological development that took place in the late 18th and early 19th centuries and brought about significant changes in society, including the rise of factories, the growth of urbanization, and the emergence of new forms of work. The shift from rural to urban life, and from agrarian to manufacturing economies led to significant disruption, as people had to adapt to new ways of working and living. For example, factory workers had to