

## BOOK REVIEW:

# Algorithms of education: How datafication and artificial intelligence shape policy

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Have you seen a film called WALL-E, released in 2008? The story takes place about 700 years after people have left Earth. The lone robot, WALL-E (Waste Allocation Load Lifter-Earth-Class), keeps trying to clean up all the trash people left behind. WALL-E is a lonely little machine. A cockroach is his only friend. That is until a mysterious ship drops off a flashy robot named EVE (Extra-Terrestrial Vegetation Evaluation) on a mission to find life on Earth. WALL-E is very happy to show her his collection of rare things, including a plant found in the trash. EVE is happy, so she puts the plant in her cargo hold and turns off the ship. WALL-E takes care of EVE and treats her like a person. He goes with her when the ship takes her back to space.

The spaceship Axiom is operated by the captain with the aid of a lieutenant robot named Auto. It is filled with thousands of fat humans who can't walk anymore and are serviced by robots. The captain is happy EVE found a plant because they can now go home. But the computer co-pilot has been told not to let the spaceship return to Earth. So, he tries to destroy the plant and anyone else who gets in his way. WALL-E does everything he can to save the plant because he wants to help EVE. He teaches the people on the ship and the robots what it means to be human and how it feels to be alive. The movie ends with all people on the spaceship winning the battle and returning to Earth to start their new lives, changing the rubbish Earth into green Earth.

Now, as this decade embraces artificial intelligence (AI), what are you afraid of? Do not worry, if you are. In fact, as of 2021, more than 30 countries have released national AI policy strategies. These documents articulate plans and expectations regarding how AI will impact policy sectors, including education and, typically, they discuss AI's social and ethical implications (Schiff, 2022).

UNESCO published its first document, *AI and education: Guidance for policymakers*, in 2021. This document advises policymakers on how to maximise the benefits and mitigate the risks provided by the developing relationship between AI and education.

It notes:

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and

ultimately accelerate the progress towards SDG 4.<sup>1</sup> However, these rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. (UNESCO, 2021, p. i)

*Algorithms of education: How datafication and artificial intelligence shape policy* is a timely and indispensable book for understanding AI's potential and political consequences in education policy and governance. It goes beyond debates that separate humans and machines to develop new strategies for and a new politics of education. The original contribution of this book is to propose that datafication has combined with the rationalities of AI to produce a synthetic form of education governance.

In addition to the informative introduction chapter, this book comprises seven other chapters, including three conceptual and methodological chapters, three empirical chapters, and a concluding chapter. The book's purpose is to 'explore how algorithms of education move among us in the everyday workflows, values, and rationalities of education governance' (p. 2). The authors consider how machines complement and extend contemporary education governance; hence, they propose synthetic governance, which is neither human nor machine governance but human and machine governance. The book gives an in-depth analysis of how the arrival of AI has affected contemporary education governance. It raises awareness that the growth of AI develops new modes of thought and has been interwoven into our daily workflows and education governance ideals. The authors demonstrate that datafication is a process that cannot be disregarded since education generates enormous amounts of data. They investigate datafication linkages and potential contributions to the development of education policy.

The authors conceptualise and explain how AI may significantly contribute to governance beyond policymaking by using existing data sets to anticipate, forecast and frame educationally relevant challenges. However, the authors do not 'romanticize' the difficulties associated with AI and data in education. They highlight the need for interoperability and standardisation when generating, sharing and using data across networks. The book's discussion on how existing data collection methods, such as through facial recognition systems and other business intelligence systems, are already contributing to the development of AI in education is illuminating. It suggests that AI in education should gain a higher degree of importance and be utilised for its benefit because, post-Covid, more start-up companies and tech giants, such as Microsoft, Google and Amazon, are already focusing their research and development in this area.

The book reveals that using the ability of current systems to capture and analyse large volumes of data, AI and datafication are instrumental in discovering new knowledge regarding issues such as factors that influence students' performance in different fields of studies. The evolution and growth of big data is, undoubtedly, a game changer for AI and datafication in education.

It is, however, reassuring to know that datafication will increase accountability among key education ecosystem stakeholders. There is hope for better quality education that is

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<sup>1</sup> Sustainable Development Goal [SDG] 4 aims for inclusive and equitable quality education and the promotion of lifelong learning opportunities for all. It is based on the principals of human rights and dignity, social justice, peace, inclusion and protection, as well as cultural, linguistic and ethnic diversity and shared responsibility and accountability (UNESCO, 2016).

*BOOK REVIEW: Algorithms of education: How datafication and artificial intelligence shape policy*

inclusive without discrimination or biases. The authors' visualisation of digital education governance by integrating AI and datafication has yet to be realised fully. This is the expected result of improved monitoring and control of processes, people, systems, and administration. The book illustrates the domino effect that monitoring and management will have at a higher level of governance. As a result of not relying on personal preferences, policymakers may make more consequential choices that can alter the landscape of education because performance indicators, benchmarks and standards can measure the effectiveness of data-driven decision-making. In addition, AI systems have the capability to predict the favourable and unfavourable impacts of decisions.

The book argues that datafication and automation do not replace the Anglo-governance paradigm, which emphasises the rights and roles of stakeholders in governance. Rather, it strives to deliver new types of policy instruments and technologies of governance in tandem. Hence, it makes it more feasible to adopt and apply the concepts offered in this book. It acknowledges that using AI to create a synthetic form of education governance without the participation of humans would not be viable. It reassures that integrating machines and humans is necessary to lessen opposition to exploring data-driven computational rationalities in education. It is intriguing to learn that datafication may unify administration in education systems. It inspires optimism that new data analysis and representation modes may significantly contribute to identifying effective practices in an educational institution or system that intrinsically contribute to attaining goals.

The book successfully demonstrates that the innovation and improvement brought about by datafication are not cosmetic. The promises of data-driven management, personalised learning and automated testing and marking give educational institutions and students autonomy and authority. Consequently, it is alluring to investigate the opportunities that AI and datafication provide. Effective decision-making will promote the development of the education profession. Hence, it is amazing to realise that with the present computational power and recursive algorithm systems, we can unlock the potential for decision-making that is not possible by humans, such as processing large amounts of complex data and finding the interconnections between them. Inherently, this will provide the opportunity to identify remedies to the negative impact of previous ill-informed decision policies as well as education-related societal issues.

The book is an eye-opener, providing evidence that education is not a standalone entity. Whether we like it or not, technology, particularly AI, algorithms and datafication, plays a vital role in advancing education and resolving the challenges of the 21<sup>st</sup> century. We encourage teachers to explore the authors' questions further: What can we do with and about synthetic governance? And what would be a critical synthetic politics of education in this context?

Network governance<sup>2</sup> acts as an effective and legitimate way of problem-solving that assists policy implementation and education reform. It allows stakeholders within a policy arena to negotiate win-win outcomes by transacting differently valued 'goods' in negotiating agreements about governing (Chan, 2019). To conclude, we think it

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<sup>2</sup> Network governance is defined as 'self-organising, inter-organisational networks characterised by interdependence, resource exchange, rules of the game and significant autonomy from the state' (Rhodes, 1997, p. 15).

important to mention another 2022 UNESCO document, titled *K-12 AI curricula: a mapping of government-endorsed AI curricula*, which states, ‘As AI technology represents a new subject area for K-12 schools worldwide, there is a lack of historical knowledge for governments, schools, and teachers to draw from in defining AI competencies and designing AI curricula’ (p. 4). We must provide our students with a framework for AI-related topics under this proposed curriculum. However, a one-size-fits-all strategy may not be useful for all nations. As a result, the policies of individual nations should be studied next.

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