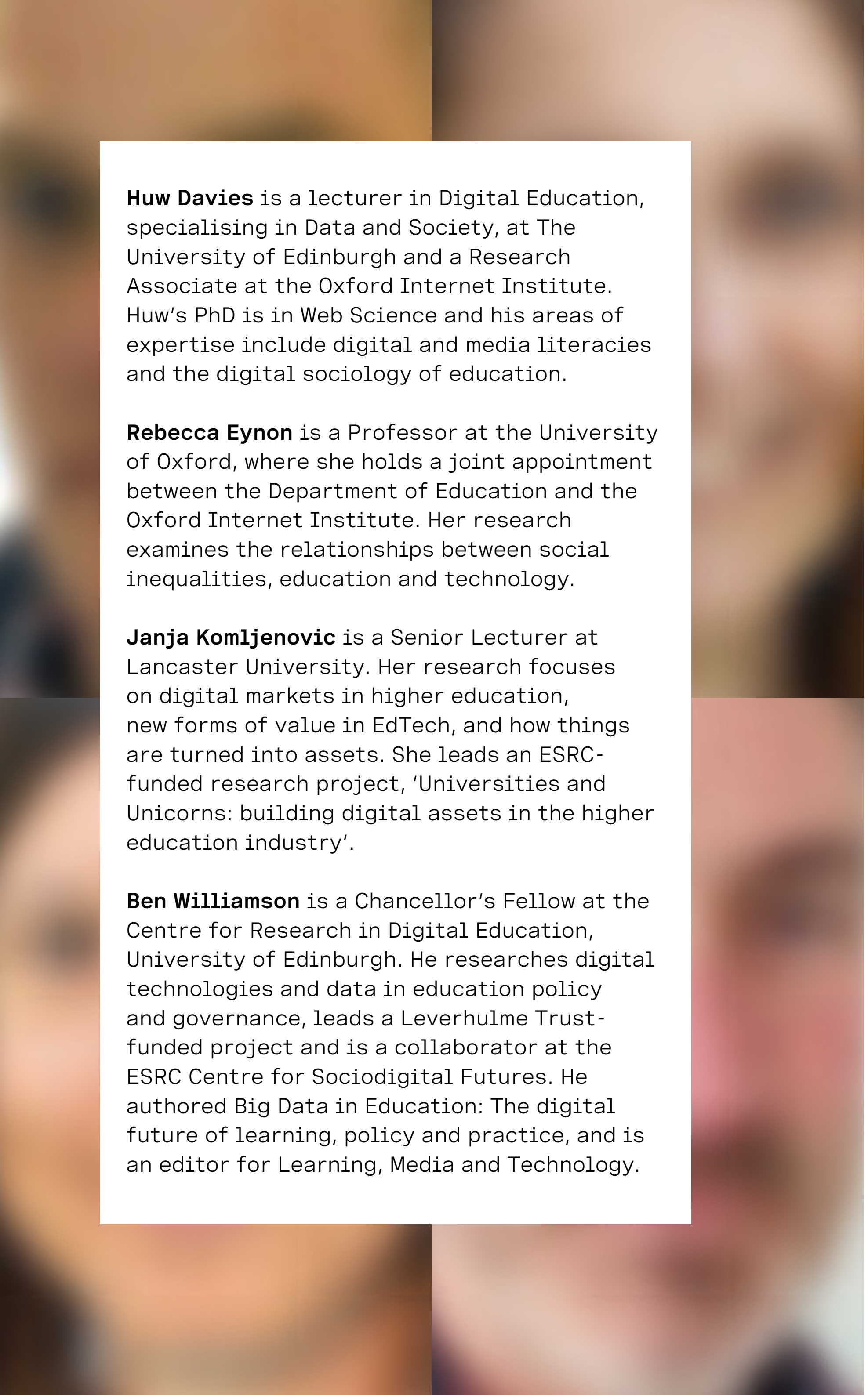

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Investigating the financial power brokers behind EdTech

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The education technology (EdTech) market is diverse and powered by finance from a growing EdTech investment sector (Pau, 2021). It is a global market, but its wealth is concentrated, with the fastest growing and wealthiest companies located in just a few countries, primarily China, India and the USA, although European countries are starting to catch up (HolonIQ, 2022a). Similarly, EdTech investors are based primarily in China and the USA, and increasingly in Europe and the UK (Brighteye Ventures, 2022). According to the education market intelligence company HolonIQ, global venture capital investment in EdTech totalled US$500 million in 2010, rising to US$16 billion in 2020, and to more than US$20 billion in 2021 alone (HolonIQ, 2022b). This is expected to continue escalating, with the coronavirus pandemic fuelling increasing investment and interest in the EdTech market. The number of EdTech companies valued at more than a billion dollars ('unicorns') has surpassed 30 worldwide, most of them 'minted' in 2021, with venture capital investors seeking to identify other potential future unicorns that they can invest in now to secure economic returns in the future (Barosevcic, 2022).

Despite the significant funds unicorns spend on EdTech, they are relatively inconspicuous to the public or even to those working in education. However, they deserve attention because they are power brokers in the EdTech economy, with their investment decisions ultimately determining what products and services are funded into existence or not; they are therefore consequential in shaping the future of education (Feher, 2018).

EdTech investors are not only financial actors; they are also political actors, using their financial power to influence what they think should be happening both within and after school. Investors take a lifelong learning view, 'from pre-K to gray',[1] based on a model of education that involves a person's whole life course and that is increasingly integrated with private technology services as well as the entertainment industry. EdTech investors are therefore setting the digital scene for the future of education in schools and beyond (Regan & Khwaja, 2019).

Investors calculate their future earnings, or so-called return on investment (ROI) (Muniesa et al., 2017). Increasingly, EdTech investors' vehicle of choice for the greatest ROI is the platform model. Platforms act as new intermediaries in education, providing access to learning content, allowing students to upload assignments or complete tasks online (Kerssens & van Dijck, 2021). A prominent example is Google Classroom, used extensively in schools, which offers both a free-to-access platform for online teaching and learning, as well as for-pay subscription features including integration with thousands of other services, data-driven insights about students, and increasing capacity to automate selected educational tasks (Perrotta et al., 2021).

Investors consider such digital platforms a particularly reliable revenue stream because they can be regularly upgraded with new features, integrated with other platform services and continuously collect user data, to be used as intelligence for future product and functionality development (Komljenovic, 2021). As in the wider digital economy, user data provides a source of value creation and subscription fees from users while simultaneously amassing data to develop further derivative products and services for future financial yields (Sadowski, 2020). Digital education platforms therefore act as new kinds of intermediaries, connecting users to

educational services and extracting data traces from every interaction as a route to monetisation (Decuypere et al., 2021).

Beyond their investment strategies, some investors deliberately and actively promote a particular view of education to serve their interests. They operationalise specific ideas about what is wrong with education, how it should be disrupted or fixed, and what future education should materialise. A familiar trope is that EdTech will deliver a 'digital transformation' of education and modernise it towards the digital future (Marmol Queralto, 2021). This is widely shared across business, policy, technology and finance sectors, particularly since the onset of school disruptions related to COVID-19 and a global explosion in the use of private EdTech products across public education systems (Williamson & Hogan, 2020). EdTech investors have exploited this discourse, claiming they are investing in companies and platforms that will 'transform how the world learns' (HolonIQ, 2021).

The range of investors in EdTech includes venture capital, private equity and strategic investors, and may be generalist (investing in all or several economic sectors) or EdTech-specific (Komljenovic et al., 2021). We hypothesise that some investors might simply pursue ROI while others act as powerful and influential political actors. Here, we provide an insight into EdTech unicorns' investors through a focus on four investors that have invested in five or more unicorns – two EdTech-specific (Tiger Global Management, GSV Ventures) and two general (Owl Ventures and SoftBank Vision Fund).[†] We highlight the work investors do in reframing the practices, values and meaning of education, and consider the implications for the governance of education data.

† We took the list of unicorns from HolonIQ's website on 26 November 2021 and searched for investors in those unicorns on CrunchBase. We prepared a list of 424 investors. The huge majority (361 investors, or 85%) invested in only one unicorn. We found six investors that invested in five or more unicorns: Tiger Global Management, Coatue, Tencent, GSV Ventures, Owl Ventures and SoftBank Vision Fund. We took these six investors as the focus for our analysis. After an initial investigation, we removed Tencent due to limited sources and it being a tech company and not an investor per se, and Coatue as a general investor, to maintain a comparative balance between the cases. We propose that investors that invest in multiple unicorns are playing the most powerful role in shaping the future of EdTech.

EdTech-specific investors: GSV Ventures and Owl Ventures

GSV Ventures and Owl Ventures are both based in the USA, with international investments. They are major investors in EdTech unicorns, and also promote particular normative visions of the future of education – visions that their investments and promotional work are intended to enact.

GSV Ventures claims a need for massive digital disruption, and views education as an investment opportunity similar to e-commerce in the past. It claims, 'we invest in education technology leaders positioned to achieve disproportionate gains'.[2] GSV Ventures engages in 'pre-K to gray' thematic investing, seeking gains across the full lifecycle, including the schools sector. It invests in technologies used in schools in the UK, such as ClassDojo and Duolingo, although it invests in models of platform-based EdTech that it assumes have global market potential. The unicorns it has invested in include Andela, Degreed, Guild Education, Handshake and MasterClass. It uses the calendar analogy of 'BC' and 'AD' to position the pandemic as a transformative opportunity for investment and disruption in education. 'BC' refers to 'before corona', where education is seen as targeting the traditional student population, is organised in classes, temporally runs in semesters, consists of lectures and exams, is done during the daytime, is segmented in the curriculum and teaches theory. Alternatively, 'AD' stands for 'after disease', and is framed to cater for everyone across their life. For schools, AD education is characterised by peer-to-peer learning, on-demand teaching, massive scale operations (called 'weapons of mass instruction'), personalisation and increasing use of data and artificial intelligence (AI) ('RoboEd'). Learning is not only lifelong but also life-wide, with the rise of 'whole self-education' (Moe & Rajendran, 2020).

GSV Ventures does political work through reports, podcasts and other promotional materials, and by organising large events starring notable politicians and celebrities promoting their vision of education. It also facilitates start-up challenges to lead entrepreneurs in developing particular technologies and business models, and evaluates, rates and publicises the 'most transformational' EdTech start-ups in terms of their revenue scale and growth, user reach, geographic diversification and profit margins profile.[3]

Founded in 2014, Silicon Valley's Owl Ventures, with over US$2 billion of EdTech assets, is the world's most significant EdTech venture capitalist company. 'We believe there is a digital revolution rapidly unfolding in education', the company claims. 'This revolution is creating a historic opportunity to invest in companies that are disrupting and improving the over $6 trillion global education market… Hundreds of millions of students and teachers around the world can now leverage innovative learning platforms'.[4] Like GSV Ventures, Owl Ventures is celebrating new post-pandemic opportunities, highlighting how long top-down sales cycles and entrenched publishing incumbents made schools difficult markets. But now, thanks to government cash injections and the 'aggressive' adoption of technology during the pandemic, schools offer a lucrative source of income.

Owl Ventures' investments in EdTech unicorns Apna.co, BYJU's, Degreed, Greenlight, MasterClass, Newsela, Quizlet and Stash highlight its strong focus on employability, workplace skills and its interest in direct-to-consumer (DTC) EdTech. It also promotes a narrative of an outdated education system, and envisions the future of education in similar terms to GSV Ventures, such as short courses offering skills validated by micro-credentials and promoting wrap-around cradle-to-grave models of learning, arguing the need to constantly reskill to stay relevant in ever-evolving job markets. It also sees data as an important fix to inequality, encouraging companies to collect as much data as possible about their learners to facilitate social justice (Owl Ventures, 2021).

'Generalist' investors: Tiger Global Management and SoftBank Vision Fund

Tiger Global Management (USA) and SoftBank Vision Fund (UK) have international investments, primarily in technology

Tiger Global focuses on investments in China, India, Russia and the USA across multiple sectors.[5] It is seen as a major player in shaping the technology sector globally, especially internet-driven consumer and financial technology (FinTech) companies. Although education is a relatively minor segment in its portfolio, it has invested in five EdTech unicorns: BYJU's, Kajabi, Outschool, Unacademy and Zuoyebang. One of its most recent EdTech investments is in the GoGuardian platform for schools, taking its valuation to more than US$1 billion, supporting its ambitions to scale to new markets outside the USA (Bergen, 2021). These highlight its interests in data-intensive personalised learning and creating a new platform marketplace beyond formal educational provision. It is not engaged in any kind of promotion of a particular vision of current or future education; it is the investments themselves that are important in shaping how data-intensive systems are to be used in education.

Similarly to Tiger Global, SoftBank Vision Fund's EdTech investments constitute a relatively minor part of its portfolio.[6] Indeed, education is a relatively new venture, with most EdTech investments made since 2020 (albeit it already invested in 2001 and 2004). As with Tiger Global Management, its influence is primarily in what it invests in rather than in the promotion of any particular vision of education. Its investments in 24 EdTech companies (including Atom Learning, Kahoot, Zuoyebang, EdCast, GoStudent, Riid and Unacdemy), of which seven are unicorns, tend to focus on personalisation and increasing educational access. Most investments are in DTC EdTech, thus its focus on reconfiguring and creating new educational markets.[7] Its corporate philosophy aims to 'promote the Information Revolution to contribute to the wellbeing of people and society' and to 'bring happiness and give inspiration to people.'[8] It invests in companies across the economy that promise to bring change with technology.

Personalisation, deinstitutionalisation and scale

EdTech-specific investors are political actors that construct, promote and operationalise particular ideas of education and its future. They institutionalise these ideas through investment in particular products and the promotion of particular visions of education through events, blogs, reports and other activities. Generalist investors do not engage in the promotion of EdTech, and appear mostly concerned with ROI regardless of the sector-specific interests. Indeed, they tend to invest in the later stages of the investment cycles, and with larger investment sums. Therefore, EdTech-specific investors engage in the first-order work of financing specific products and services, and also engage in the second-order work of shaping discourses and practices of education more widely. Generalists step in later to enable scaled growth and the institutionalisation of these visions. The meaning and values promoted by EdTech investors have significant implications for education. We now review three key themes and their implications for schools in the UK: personalised learning across the life course, bypassing educational institutions, and scaling up.

First, investors see EdTech as having a role in every learning stage of a person's lifecycle ('pre-K to gray'). EdTech investment presents itself as pursuing a moral purpose by financing the solutions required for the challenges facing learners of any age, especially in a digital-first economy. Across very different sectors of education, investors project similar ideas of education. In particular, platforms are promoted to allow personalised learning, which requires continuous data extraction, prediction of progress and tailored recommendations to improve future performance. Personalised, platform-based education is positioned as a moral imperative in the face of apparent curriculum standardisation, outdated modes of assessment and educators' incapacity to address individual learners' needs on demand and just in time. The implication is that schools are failing, unable to modernise, and don't personalise learning.

Personalisation is also envisaged to cater for individuals beyond institutionalised forms of learning. Platforms are imagined to help individuals find and engage with the most appropriate micro and other learning opportunities throughout their life, support parents, caregivers and children in tutoring or home schooling, provide digital credentials for career-readiness, connect learning to work more seamlessly, and even improve individuals' wellbeing and personal growth through tailored opportunities (Davies et al., 2021). Investors often claim such investments are 'fixing' education, supporting each individual based on their needs, and improving society. They offer what they construct as benevolent capitalism that can save education and alleviate geographical, social and economic inequalities through intelligent use of data and strategic investments. However, to address these inequalities, investors say they need as much biographical and behavioural data as possible. This produces a moral tension between data for social good, and data for surveillance and profit.

Second, investors increasingly finance products and platforms that bypass the gatekeepers within the school system to deliver EdTech direct to young people, their families and lifelong learners. Again, such strategies reinforce views widely shared by EdTech investors, that formal education is slow to innovate, outdated, not fit for purpose and in need of transformation. This is reflected in rapidly increasing investment in platforms that mobilise and promote peer-to-peer learning, and the view that anyone can become a teacher, creating lectures and other content on digital platforms. Increasingly, education systems such as schooling in the UK and elsewhere are being decentralised and opened up to private contractors, making technical platforms into one of the new centralising powers, uniting schools as a national school system (Hillman et al,, 2020). This suggests EdTech investors are financing technology services and platforms that function as 'shadow' powers to shape what happens in schools, with little involvement of official governance or regulatory agencies (Williamson, 2019).

In a clear effort to build investor confidence in education, these investors construct this new deinstitutionalised sector as a largely untapped trillion-dollar source of revenue, which is less constrained by local legislative, regulatory and other messy challenges if focused directly on individuals. The data implications here are highly significant and are more likely to be based on the interests of the EdTech sector than children, young people and other learners.

However, while this appears to be a *de*institutionalisation of education – bypassing schools and universities, quality control and national, institutional and democratic standard setting – it is more of *re*institutionalisation of education around private platforms. This mirrors other domains of society such as news media. Publishers in the UK are regulated by public bodies such as the Independent Press Standards Organisations. Platforms are able to act as de facto publishers without similar independent oversight.

Neither personalisation nor reinstitutionalisation is possible without the third theme: scale. Only very large-scale platforms are able to produce massive disruption. Investors are therefore investing in technologies and markets that offer them rapid scale and revenue promise. For example, as a result of a series of inward capital investments, BYJU's in India is estimated to be worth more than US$22 billion. It has established a laboratory for AI innovation, hired technology experts from companies such as Amazon, acquired numerous other EdTech companies, and sought to expand to new markets internationally through major partnerships (such as Disney in the USA and Google in India). Its main source of revenue, which its investors expect to generate future ROI, is growing subscription payments from students for access to its platform services (Thathoo, 2022). It is therefore pursuing a simultaneous strategy of fundraising, technology innovation and expanded scale for its particular model of platform-based, AI-enhanced education, with a business plan that emphasises market and revenue growth. BYJU's example is quite representative of other unicorns' activities and strategies.

EdTech investors also strategically support coordinated and consolidated ecosystems of interoperable platforms that are both 'lifelong' and 'life-wide' in their pursuit of scale. An exemplar case is the learning management system Blackboard, acquired by Anthology, a student information systems company, in 2021, in a multibillion-dollar deal between their respective private equity owners. The newly merged company aims to 'break down data silos' and 'create the most comprehensive and modern EdTech ecosystem at a global scale for education' (Ballhaus, 2021). The merger was driven by revenue growth opportunities associated with cross-selling, increasing international reach and combining products and data to create new value (Hill, 2021).

Although the value of these new forms of data integration and cross-platform integration may not be obvious to educational institutions, it is an appealing model for vendors and investors because it promises to unlock value from data while locking in customers to the ecosystem. As with BYJU's, it also seems to indicate a trend towards increasing monopolisation, with the EdTech economy increasingly characterised by mega-EdTech corporations and vast interoperable platform ecosystems.

Conclusion

We have highlighted the ways investors in EdTech unicorns operate in the education sector. Their primary influence is on the EdTech economy as they allocate finance to selected companies, but this exerts a second-order influence on the education sector more generally. Investors are not only creating the future uses of data-intensive systems in education through their financial power; they are also actively creating the future by shaping the discourse around EdTech in ways that will benefit their actions (Watters, 2016). Well-financed EdTech companies are enabled to expand their offerings, grow market share and deepen their penetration into education. Moreover, investors and EdTech companies are pursuing new models of education that can reshape conventional practices of teaching, learning and management, or produce new competitive alternatives, such as DTC learning platforms that bypass educational institutions altogether. By avoiding any official gatekeepers, including government and school bureaucracy, these solutions offer investors the rapid scaling that their large investments demand, with as yet unknown consequences for students, families, education and wider society.

The financial and discursive role investors play gives them a significant role in how the future of education should unfold and how data should be used. We are not convinced by the intertwined educational and data futures that investors are creating, as it is a reductionist view of the purposes of education, focusing on efficiency gains and learning as an individual activity that is primarily carried out for economic purposes. When it comes to data collected at or through school, who determines what is good for children, young people, schools and society? Whose interests are served, and who gets to write the agenda?

In the UK it is notable how much of the future vision of EdTech in schools has been shaped by the visions of the EdTech industry (see, for example, Ball, 2021; DfE, 2019). At the same time, there are significant regulatory and implementation gaps in the ways that data are used in schools (Day, 2021). It is important not only to address these gaps from a legal perspective, but also to ask if the kind of EdTech that gets developed and supported is the kind schools want and need. For example, what educational impact do particular digital products and services have, what kinds of algorithms run its operations and on what principles, and what is the pedagogic principle behind the innovation?

The primary motive of the investors driving the EdTech market is ROI. This influences, for example, data governance policy in education. Governments and teachers must have a far stronger role in setting both the educational and regulatory agenda so that education serves the interests of whole society: children, young people and life-learners, not just private capital investors.

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