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Globalisation, Societies and Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/cgse20

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To cite this article: Janja Komljenovic, Ben Williamson, Rebecca Eynon & Huw C. Davies (23 Oct 2023): When public policy 'fails' and venture capital 'saves' education: Edtech investors as economic and political actors, Globalisation, Societies and Education, DOI: 10.1080/14767724.2023.2272134

To link to this article: https://doi.org/10.1080/14767724.2023.2272134

Published online: 23 Oct 2023.

GLOBALISATION, SOCIETIES AND EDUCATION
https://doi.org/10.1080/14767724.2023.2272134

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When public policy 'fails' and venture capital 'saves' education: Edtech investors as economic and political actors

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ABSTRACT

Educational technology (Edtech) investors have become increasingly influential in education; however, they remain under-researched. We address this deficit and introduce the grammar and landscape of Edtech investment into education research. We empirically examine venture capital Edtech investors and argue that they are economic *and* political actors. Investors construct the Edtech industry through their investment and advancing particular imaginaries. They legitimate their authority in education through narratives of expertise and measures of social impact. They consolidate the Edtech industry by constructing social networks to perform the political work of futuring. The analysis provides original insights into the power of Edtech investors in education and proposes a research agenda examining new relations between the education, technology, and finance industries.

ARTICLE HISTORY
Received 1 March 2023
Accepted 13 October 2023

KEYWORDS
Education technology; Futures; Investment; Investor; Venture capital

Introduction

Educational technology (Edtech) increasingly structures teaching and learning processes, determines how education is governed, and reframes educational purposes and aims (Decuypere, Grimaldi, and Landri 2021). Since Edtech is so impactful for education, it matters what kind of Edtech is incubated, innovated, and rolled out into the sector. The nature of Edtech is determined by socio-techno-financial processes resulting from power struggles between various actors (Komljenovic 2021). We argue it is investors who increasingly influence the nature of Edtech. They can realise future visions by structuring the direction of entire industries through their funding priorities (Cooiman 2022). However, they do more than only invest financial resources; they conduct studies, issue reports, educate entrepreneurs and other actors, organise networking, work with policymakers, and more (Williamson and Komljenovic 2023). Hence, investment and consequent actions are as much political decisions about the future as they are financial decisions about funding startup companies. What can and cannot exist is determined by an investment decision (Feher 2018), and investors seek to materialise particular visions of futures through very laborious actions that accompany the investment itself (Muniesa et al. 2017).

Historically, investors were hesitant to invest in the education sector due to low returns, long investment cycles, fragmented markets, heavy regulation, and public hesitancy towards privatisation. This has changed with the emergence and growth of Edtech, akin to other sectors in the digital economy, accelerated by the pandemic (Teräs et al. 2020). Education via Edtech is seen to have an

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enormous opportunity for growth among investors as one of the last sectors that have not yet been digitalised. In other words, Edtech made education investable.

The Edtech industry is relatively young. While we can trace the use of the first computers for academic research back to the mid-1940s and their first use in university and school classrooms to the 1960s (Molnar 1997), the Edtech industry as we know it today developed in the early 2010s. Since 2010, the number of newly established Edtech companies has sharply increased (Komljenovic, Sellar, and Birch 2021). Venture capital (VC) investment in Edtech rose from $500 million in 2010 to more than $20 billion in 2021 (As of November 24, 2022, HolonIQ listed on its website https://www.holoniq.com/notes/global-Edtech-venture-capital-report-full-year-2021). And the COVID-19 pandemic accelerated investment in Edtech and its use in education (Williamson and Hogan 2020). The Edtech industry is now consolidating, as indicated by the rising value of individual investments into particular companies (Brighteye Ventures 2022) and an increasing number of acquisitions (Brighteye Ventures 2022), indicating the emergence of 'Big Edtech' (Williamson 2022). The number of Edtech 'unicorns', companies valued at more than $1 billion, increased from 0 in 2014 to 62 in 2021 (Brighteye Ventures 2022). An important reason that the Edtech industry has grown and consolidated is capital investment.

Surprisingly, Edtech investors, particularly VC investors, remain under-researched in education research. In this article, we ask who Edtech investors are, how they operate, and what are the consequences. We argue that Edtech investors became economic and political actors in the education ensemble of multisector influences on policy and practice (Robertson and Dale 2015) who need to be brought into research focus. We address the research gap by discussing Edtech investors' operations, exploring the political and economic actions of two Edtech VC investors through an original empirical study, and proposing a research programme to investigate these key actors further.

We proceed as follows. First, we provide a brief overview of the practices of Edtech investors to illuminate the investment landscape and its grammar. We then explain our approach to the empirical study. We proceed by discussing three forms of VC investors' economic and political labouring of making the Edtech industry, legitimating their role, and consolidating the industry. We conclude by reflecting on the implications for education.

About Edtech investors

Innovation needs resources and financial investment (Mazzucato 2018). Like any sector, there could be no Edtech industry without investors. Investors transfer money to those users of real capital who need it to acquire resources in the hope of reaping profits later in time via claims they make on future income, such as via company shares (Knorr Cetina and Preda 2006).

The most common types of investors are accelerators, angels, venture capital (VC), private equity, family offices, government non-profit funds, and corporate investors. We focus on VC, namely 'investment funds that manage the money of investors who seek private equity stakes in startups and small – to medium-sized enterprises with strong growth potential' (As of November 25 2022, Dealroom listed on its website https://knowledge.dealroom.co/knowledge/investment-funding-rounds). While investors, particularly VC investors, are relatively new actors in education via Edtech, they are different from other stakeholders in that they provide finance in search of return on investment (ROI) and impact on the actions of their investees. VC follows particular investment patterns in that returns are concentrated in a few investments and aim to scale start-up companies quickly. Expectations are an important part of VC logic that become incorporated into investment practices and devices (Birch 2022).

For a specific fund, VC firms aim for 20–30% ROI of the entire fund for their shareholders (Zider 1998). However, not every investment is expected to produce ROI. Instead, very large returns are concentrated in a few investments (Mallaby 2022). The logic of the VC investment is thus to 'invest in multiple firms but only expect one or two to provide returns necessary for success of the fund'

(Birch 2022, 6–7). Indeed, only 10–20% of invested companies need to be highly successful to reach the targeted ROI of the entire fund (Zider 1998). Furthermore, the ROI is expected quickly as 'in return for financing one to two years of company's startup, venture capitalists expect a ten times return of capital over five years' (Zider 1998) or even sooner, more recently. Consequently, invested companies are expected to scale up within only a few years (Pfotenhauer et al. 2022), with VC prioritising startups with a 'hypergrowth' potential for scalability (Cooiman 2022). VC investment funds normally have an investment thesis as a guiding logic and an idea of how a specific investment will create an impact (Bocken 2015).

VC firms are run by partners. They collect private capital to launch investment funds in the fundraising phases and can run several funds in parallel (Gompers and Lerner 2001). VC firm partners' tasks include searching and attracting new investment deals, monitoring existing investments, allocating additional capital to successful existing investments, assisting with exit options, and more (Zider 1998). Partners get paid a percentage of the fund's total capital, typically 2–3% regardless of results, plus operating costs (Zider 1998). It is in the partners' interests to produce high ROI to attract investors in their future funds. In addition, venture capitalists get 20–30% of the gains from the fund's performance in total (Zider 1998).

When an entrepreneur and an investor are mutually interested in an investment, they meet to negotiate the company's value, terms of investment, milestones to be reached, and the percentage of equity the investor gets for a particular investment sum. Establishing a mutual agreement on the company's value is not easy, and these actors tend to stand on different grounds initially. From an investor's perspective, the company's value is not its market price today but its earning power in the future (Muniesa et al. 2017). Such future '[e]xpectations are an important component of this VC logic. As a mode of valuation, VC is configured by the incorporation of future expectations into investment operations, practices, and organisational structures' (Birch 2022, 35). After agreements are reached, VC partners take seats on a startup's board of directors to monitor the company, shape its strategy, and provide guidance, expertise, and connections with relevant actors to ensure 'product-market fit' (Williamson and Komljenovic 2023).

However, Edtech companies' success or failure does not have to do only with the state of finance but with the fundamental question of whether education is an appropriate sector for investment, even if through investing in technology; and if so, what kind of technology should be supported with investment. These are ultimately political questions addressing a concern for the common good. Therefore, investors are not only actors in the economic sphere pursuing their own interest in a market (Scherer, Palazzo, and Matten 2014), but they are political actors in advocacy politics who influence the construction of public policies (Néron 2010). We take a broader view of politics in that political action is not confined to formal institutions of government but 'operates in a multiplicity of ways' in education, 'from whose knowledge counts to how the sector is governed' (Robertson and Dale 2015, 145).

Most prominent investors are generalists who invest in all sectors and industries, while specialist investors invest in particular sectors, including Edtech. Investors specialising in Edtech emerged in more notable numbers in the past years. Edtech-specific investors typically invest at early stages, making Edtech investable in the first instance, with generalist investors stepping in later to stabilise investments with bigger sums (Mascarenhas 2020a), consequently supporting Edtech's expansion. Thus, it is likely that Edtech-specific investors set the course of the industry by supporting initial ideas and growing start-up companies. As Edtech is becoming ubiquitous in education, Edtech-specific investors have become critical actors who are accumulating power and authority to structure and shape which kinds of Edtech products are produced, which visions of education are considered desirable, and which forms of digital education can take shape. We now turn to discuss our approach and methodology to empirically examine how Edtech VC investors structure and shape types, visions, and forms of Edtech.

Our approach

We analyse two Edtech-specific VC investors, GSV Ventures and Owl Ventures, both based in the USA, which are actively investing capital in startup portfolios internationally to pursue billion-dollar unicorn valuations and financially profitable ROI. We purposively selected these investors because they have invested in five or more unicorns. Our sampling approach was to focus on Edtech unicorns as a starting point because they are companies that have reached the highest valuations and, therefore, are good proxies of the business models and imaginaries that investors deem to have the most potential, representing the ideas and approaches that have been most successful in the Edtech industry thus far.

To inform our choice of cases and research each firm's economic activities, we primarily drew on data from HolonIQ, Crunchbase, Pitchbook and Dealroom. HoloIQ is the leading market intelligence platform on the Edtech industry and is commonly used in the sector. Crunchbase and Pitchbook are commercially provided databases on global companies, investors, and associated individuals, both considered reliable sources for academic research (Dalle, Besten, and Menon 2017; Sharma 2017). We also drew from the Dealroom database on Edtech, to provide additional information about the investment landscape.

To select our two cases, we took the list of Edtech unicorns from HolonIQ's website on 1.02.2023 and searched for investors in those unicorns on CrunchBase. We verified results with data from Pitchbook and Dealroom. We then used Crunchbase to prepare a list of investors in the identified Edtech unicorns. The list included 529 investors. Out of these, eight invested in five or more unicorns: GSV Ventures (10 investments), Tiger Global Management (8), Tencent (7), Coatue (6), Owl Ventures (5), Salesforce Ventures (5), Lightspeed Venture Partners (5), and SoftBank Vision Fund (5). Out of these eight investors, we chose GSV Ventures and Owl Ventures as our two cases because they were the only specialists in Edtech and VC investors. Beyond investing in Edtech unicorns, as of 1 February 2023, GSV had made a total of 88 additional investments in Edtech companies, and Owl Ventures, a total of 76. As such, both GSV and Owl are significant actors in shaping what Edtech is funded and are likely to promote particular normative visions of the future of education – visions their investments and promotional work are intended to enact.

GSV Ventures was founded in 2016 by Deborah Quazzo and Michael Cohn as the education-focused investment vehicle of GSV (Global Silicon Valley), a merchant bank established in 2000 as a major investor in the digital technology and social media industry. GSV Ventures holds around $275 million in Edtech assets and has two active funds (Mascarenhas 2021). The company specialises in Edtech startups of varying maturity. Since the launch of its second fund in 2021, GSV Ventures has begun to invest in Edtech companies beyond the USA, although its investments in unicorns are confined to India and the USA (As of February 1 2023, GSV listed on its website https://gsv.ventures/portfolio/).

Founded in 2014 with offices in San Francisco and Menlo Park, Silicon Valley, 'Owl Ventures has become the largest venture capital fund in the world focused on the education technology market' (As of November 24 2022, Owl listed on its website https://owlvc.com/news-owl-ventures-fund-v.php). Owl Ventures holds $2bn in assets under management in Edtech (As of November 24 2022, Owl listed on its website https://owlvc.com/outcomes.php). Owl invests in early to late-stage Edtech companies, typically investing between five and fifty million dollars. Since the launch of its third fund in 2019, Owl has begun to invest in Edtech beyond the USA, also with investments in Edtech unicorns in the US and India (As of February 1 2023, Owl listed on its website https://owlvc.com/portfolio.php). Interestingly, the two investors seemingly compete with each other, tending to invest in different Edtech companies, sharing only two unicorn investments, i.e. in Degreed and MasterClass (Figure 1).

Our methodological approach includes two steps. First, we created visualisations resulting in Figures 1 to 3. We collected information from the databases mentioned above about Owl and GSV investments in terms of the Edtech companies they have invested in, the size of the investments, and their geographical location. Using this data, we visualised these investment networks

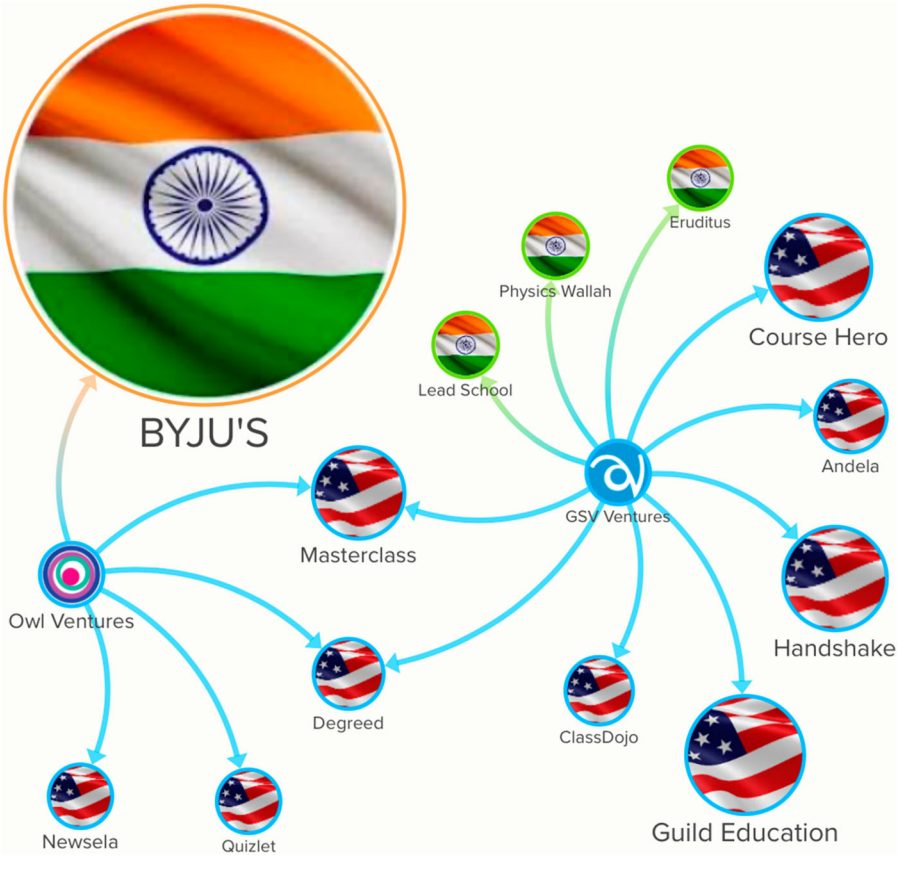

Figure 1. Edtech Unicorn Investments by GSV vs Owl by country and sized by relative valuation. Source of data: Pitchbook (1 February 2023)

with a combination of Flourish and Kumu to begin to build important insights into the significance of these investors for education systems.

Our second step was to analyse the discourse that Owl and GSV use to construct the future of education and technology. Our study is broadly located within critical discourse studies, which aim to make visible power structures by analysing various forms of semiotic data, such as written text. In line with such an approach, we view language as a foundational aspect of the ways that the future of education is constructed, and through its analysis, we can make visible the political and power relations at play (Wodak and Meyer 2016). We downloaded publicly available material from GSV and Owl Ventures that included their websites with all webpages, reports, and other documents published on their webpages, any material published on medium.com, and any interviews with their staff published on TechCrunch, a startup and technology news website review (Klopper 2021). We conducted a critical discourse analysis to study the political and futuring work of the two cases (Fairclough, Mulderrig, and Wodak 2011), drawing on multiple data sources and methods to support our analysis.

Our discourse analysis and visualisations were substantiated by conceptual approaches elaborated above and in discussion sections. We were particularly attentive to the political work that Edtech-specific investors do to materialise particular ideas and visions. This approach allowed us to understand the varieties of strategies and techniques employed by investors; and the connection between discursive construction and its materialisation.

Analysis

Our analysis proceeds in three moves. We first investigate how Edtech investors construct narratives of the future and scale. We argue that they are one of the key actors who built the Edtech industry. Second, we discuss the way they legitimate their expert and moral role through narratives of social good and associated evaluative tools and metrics. Finally, we analyse the political work they perform through constructing networks.

Making the Edtech industry

Education was not a popular sector among investors historically. Indicative numbers from Crunchbase[1] reveal that investment before 2000 was low (around $50M) and then sharply increased since 2009, particularly since the mid-2010s (to more than $20B in 2021). Investment in Edtech specifically is an important driver of this rise in education investment overall; Edtech, out of all education investment, amounted to 2% in 2001, increased to 30% in 2010, 38% in 2015, and 96% in 2020[2]. However, it has lowered after the pandemic peak in 2020. These numbers have to be taken with caution and understood only as indicative; but they reveal that Edtech was identified among investors as a category of interest around 2010. Education became *investable* via Edtech. However, this did not simply happen. Markets need to be made, including through cognitive and normative reorientation of activities previously not deemed appropriate to marketise (Aspers 2011). Thus, Edtech needed to be constructed as appropriate for investment and as a marketised industry catering to the education sector. An important part of that is the creation and circulation of future imaginaries (Beckert 2016). We now move to analyse how Edtech investors constructed narratives of the future and scale.

Investor future imaginaries

In this section, we examine the discursive construction of narratives about the future of technology, education, and Edtech by GSV and Owl. These narratives show investors' convictions, beliefs, fears, and hopes, which are supported by techno-economic tools that provide a calculative preview of the future (Beckert 2016). As Beckert (2014, 9–10) puts it, investors' expectations 'cannot be predictions of the future: they are mere imaginations of future states – imaginations upon which actors base their behaviour 'as if' these expectations actually did describe future states'. Moreover, they serve as strategic tools for persuading other actors, such as policymakers, to make decisions aligned with these specific imaginaries and not others (Beckert 2016). We view these future Edtech expectations as 'constitutive discourses, configuring and reconfiguring market actions and judgements in specific ways' (Birch 2022, 3). The core purpose is to stimulate market action towards an investor's future expectations, with the hope that realising the imagined future will also help produce ROI. Funding Edtech is an attempt to make future technological developments compatible with the investor's vision.

GSV and Owl construct a narrative of the future entirely based on digital technology, which serves as a context for the proposal that a digital revolution in education too is inevitable. These narratives are accompanied by quantitative and monetary data that can be understood as supportive evidentiary claims for these visions. For example, Owl Ventures has constructed a story of the 'digital revolution' and the 'transformative' role of software platforms in education, supported by massive market valuations:

> We believe there is a digital revolution rapidly unfolding in education … . This revolution is creating a historic opportunity to invest in companies that are disrupting and improving the over $6 trillion global education market. … The education ecosystem now consists of digital natives, and cloud software and information networks are connecting teachers, students, parents and employers in ways that were never before possible. (As of December 6, 2022, Owl Ventures listed on its website https://owlvc.com/about.html)

Part of these investors' stories is expectations of how digital technology will disrupt, revolutionise or transform education, often couched as 'trends', which function to legitimise their investment priorities.

For example, Covid-19 is among the 'megatrends' that GSV claims 'create tailwinds for investment'. The future is imagined here in highly deterministic terms, with educational practices and institutions assumed to be inevitably transformed by the kinds of technologies that GSV is interested in financing and securing profit from – software-as-a-service platforms, digital infrastructures, and, more recently, 'Web3', 'Metaverse', 'AI', and automated writing technologies like GPT-3 (As of February 3, 2021, Karayev listed on their website https://medium.com/gsv-ventures/gpt-3-what-it-is-and-how-it-could-affect-work-education-and-life-as-we-know-it-1c4e8754496a).

Another key narrative of the future of education is built on ideas that current education is facing severe challenges or is entirely broken. GSV consistently critiques an out-of-date education system that is in crisis and can be solved through tech and market-orientated solutions, often promoting a replacement logic. Owl is more conciliatory in tone, aiming to work in partnership with the education sector to help solve current challenges, promoting Edtech often as a supplement and hybrid option to 'traditional education' – yet still perpetuating the transformational role of technology and the market to address these issues.

Investor stories underpin their investment theses and the actions they undertake. Among GSV's investment priorities are 'lifelong learning', which it refers to as 'Pre-K to Gray Thematic Investing', 'weapons of mass instruction' (scalable Edtech platform services), 'accelerated learning through emerging tech' (data-driven personalised learning), 'Hollywood meets Harvard' (edutainment), 'Return on Education' (low-cost consumer subscriptions), 'invisible learning' (gamified content), and 'knowledge as a currency' (careers-focused skills development).

Owl similarly constructs its stories and expectations as 'emerging trends' to contextualise and legitimise its investment thesis and funding priorities. These include technological trends such as cloud software and information networks, infrastructure investments, and rapid changes in the global economy. The educational trends it highlights include 'growth of consumer Edtech' (new direct-to-consumer platform subscription models), 'Edtech + as an expanding category' (where 'Edtech+' refers to services spanning 'multiple industries' including education, healthcare, mental health and wellbeing, entertainment, and FinTech), and 'a rise in partnerships between universities and employers' (such as 'just-in-time skills' and careers-focused online learning programs, as well as 'alternative' forms of digital or 'micro' credentials).

Investing in scalability

A key aspiration of Edtech investors is that the startups they invest in can be 'scalable', experiencing rapid growth and leading to 'big paydays', such as when an investee undergoes a high-value initial public offering (IPO) or trade sale, thus securing a big ROI for the investment fund, the founders, and its limited partners (Wan 2021). The stories they construct and tell are often narratives of 'scaling Edtech'. Scaling is characteristic of the digital platform economy, as companies and their investors can foresee long-term earnings from constant expansion into new markets and generate prospective value from the 'network effects' of accelerating user numbers (Srnicek 2017). As Pfotenhauer et al. (2022, 5) note, 'in the era of big tech, the aim is frequently to scale up first and profit later. Silicon Valley financiers explicitly select new ventures for their (blitz-) scalability in all-or-nothing domination strategies'. Scaling is thus part of a VC logic to find those 'hypergrowth' companies that can produce disproportionate ROI in the investment portfolio (Cooiman 2022). This pursuit of hypergrowth scalability as a route to 'disproportionate profits' and Edtech 'blockbusters' is explicit in the strategy of GSV:

> Disproportionate gains accrue to the dominant players in technology. We invest in education technology leaders positioned to achieve disproportionate gains. The GSV Ventures team is uniquely qualified to partner with the most important companies across the 'Pre-K to Gray' digital learning sector, investing in exceptional entrepreneurs driving massive digital disruption. (As of December 9, 2022, GSV listed on its website https://gsv.ventures/)

Some of GSV's investment priorities support this focus on blockbuster scalability, especially its emphasis on 'weapons of mass instruction', 'Edtech as an export', and 'network effects'. It aims

to support massively scalable platforms that can deliver 'mass instruction' and operate as 'exportable' products beyond their initial location and generate the beneficial hypergrowth 'network effects' of escalating user numbers. A specific example of GSV's aspirations for scaling Edtech is 'RoboED', 'the advent of AI-based tutors' intended for 'scaling low-cost tutoring around the world' (As of May 6, 2020, Moe and Rajendran listed on their website https://medium.com/gsv-ventures/dawn-of-the-age-of-digital-learning-4c4e38784226).

Owl is likewise animated by the promises of scalability as part of what it constructs in its expectational stories as the 'international acceleration of Edtech':

> Overall, the global Edtech market continues to scale rapidly as demand, usage, and spending on digital solutions rise around the world. With billions of learners worldwide, improving digital infrastructure and increasing adoption rates of education technology, there are massive international Edtech opportunities. (As of December 9, 2022, Owl listed on its website https://view.genial.ly/615f5ecf4ec4620d9a6b863c)

Its focus on scaling is reflected in its portfolio of 'the fastest growing companies in the global Edtech market', which 'include 'unicorn' $1B + valuation companies such as Apna, BYJU's, Degreed, Greenlight, MasterClass, Newsela, Quizlet and Stash' (As of January 12, 2022, Bloomberg listed on its website https://www.bloomberg.com/press-releases/2022-01-12/owl-ventures-closes-over-1-billion-in-new-funds-for-global-edtech-investments-kybfo4zw).

This pursuit of scale is reflected in the type of products that are attracting the most investors. The 'politics of scaling' tends to prioritise technical fixes or solutions which cut problems up into narrow and discrete pieces that may be solved by the owners of ready-made scalable platform technologies (Pfotenhauer et al. 2022). In Edtech, those technologies that scaled most as unicorns are building a parallel system to institutionalised education by targeting individuals or employers. Drawing on data from HolonIQ, which categorises the varied types of Edtech, we can see in Figure 2 that direct-to-consumer tutoring software, especially in India and China, is currently receiving more investment than any other form of digital education. These products are highly 'scalable'.

GSV's and Owl's narratives of the future and scale lay out particular visions of Edtech and education where education is digitally transformed or entirely disrupted with scalable platform services, supported by innovations, such as that delivered by AI, and catering for personalised, gamified, and

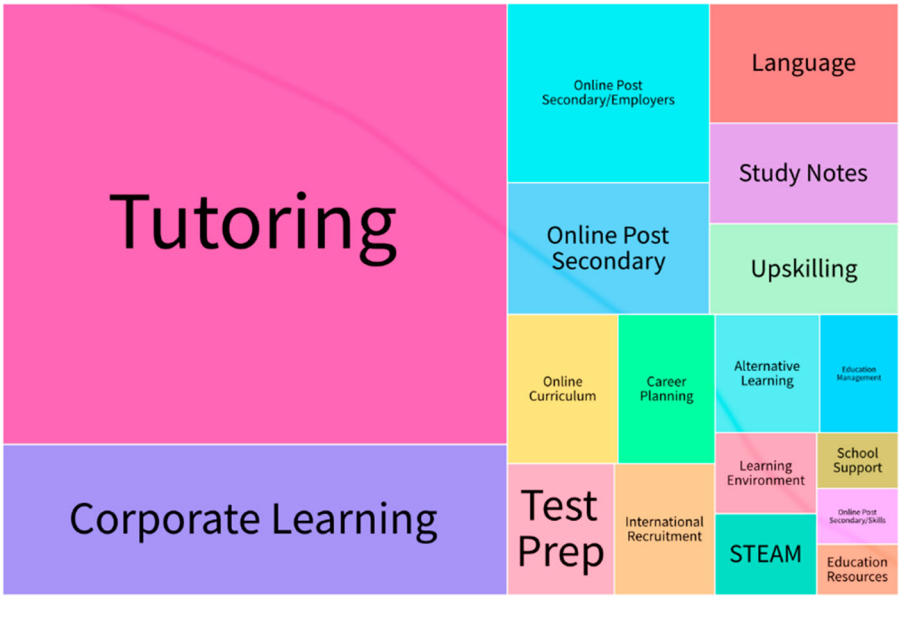

Figure 2. Types of Edtech products by size of total investment. Source of data: HolonIQ, 1 February 2023.

relevant-to-employers education trajectories. These trajectories are portrayed as rapidly scalable and highly profitable over the long term, as they target lifelong learning as well as institutional education, and can thus claim user subscriptions through expanding network effects well into the future. While these narratives may seem viable, investors need to be seen as credible actors to have an impact on the sector. We now move to analyse how they construct themselves as expert and moral figures.

Legitimating investors' role: investors as expert and moral figures

The public perception of the investor as a social figure has changed over time. Before 1850, investing faced moral, economic, and political doubts. However, during the first wave of globalisation (c. 1850–1914), the investor was transformed into a scientist capable of discovering universal laws of the market and reconfigured as having universal validity (Preda 2006). During the past three decades marked by the financialisation of capitalism, the investor is not only seen as the most competent and capable of allocating available economic resources optimally due to their specialised knowledge, but an investor's point of view is now deemed as the best and fairest (Chiapello 2015). In this sense, investors appear as moral and virtuous authorities, uniquely endowed with the knowledge, skill, and expertise to decide where societal resources should be invested (Chiapello 2015), legitimising capitalism as a just system (Preda 2006). VC are placed as 'the financier par excellence, the fount of not only capital for startups but also of expertise, drive, and kudos' (Birch 2022, 34).

Edtech investors construct stories of social impact to portray the narrative of investment as a moral action. Such stories may serve several purposes: to attract other wealthy donors and 'limited partners' to raise financing for a particular investment fund; to solicit startups to pitch for funding; and, more broadly, to produce conviction amongst other constituents of the education sector that investors are knowledgeable and authoritative experts on the future of education. These stories are perpetuated through a range of activities, including market commentary, press releases, events and awards ceremonies. Importantly, investors develop metrics of social impact as justification for investments that were and will be made (Chiapello 2015). In what follows, we first present how Owl and GSV construct the narrative of the social impact that Edtech investment brings into education; and then discuss the metrics they developed to make social impact tangible.

Imagining social impact

Scaling Edtech to new and emerging markets is achieved by investors through efforts to demonstrate their moral legitimacy to reshape education. GSV and Owl align their investment funds with social impact and sustainable development goals measures. Scaling of Edtech products is not just a matter of innovation and its financing, but signifies a normative framing for businesses, governments and non-governmental organisations to elaborate on the worthwhile social problems to address, what kind of solutions are desirable, and who should authorise them (Pfotenhauer et al. 2022). For GSV and Owl, the desire to achieve scalable social impact is evident in how they position themselves as empowering startups to increase diversity, equity, and inclusion, and democratise access to learning. For example, GSV's interest in 'RoboED' is animated by claims that 'RoboED democratises access to specialised help' at 'low cost' for underprivileged global communities (Moe and Rajendran 2020). Indeed, GSV positions itself as 'investing for good' through its 'Return on Education' (ROE) investments in 'lower cost' and 'purpose driven' Edtech:

> GSV believes that it is critical for great Edtech companies to deliver a high Return on Education ('ROE') … . They are mission driven and ambitious – they want their education solution to reach tens of millions of students. … We believe that purpose driven companies will deliver the strongest outcomes. (As of April 26, 2021, Wani listed on their website https://medium.com/gsv-ventures/changing-the-world-for-good-in-india-lead-school-b0e6c76e3e1b).

ROE is not only a calculation of social impact, but of potential monetary benefit: 'RoE is a key part of our investment thesis and is directly correlated to ROI; the higher the RoE, the better the investment outcome' (As of August 11, 2022, Pampoulov listed on their website https://medium.com/bubblin-from-a2apple/stars-through-thunderstorms-13146d65362f). Elsewhere, GSV explains that 'We partner with companies that have the opportunity to solve some of society's biggest issues because that's where the biggest returns are' (As of December 9, 2019, GSV Ventures listed on its website https://medium.com/gsv-ventures/gsv-5-ps-framework-24982e21810a).

Similarly, Ian Chiu, managing director at Owl, highlights the importance of finding startups that are accessible to those in low-income contexts, arguing that Edtech needs to go beyond a focus on the richest in society as 'if you're serving the 1%, you're by definition serving a much more limited market' (Mascarenhas 2020b). As such, Owl's and GSV's commitment to low-cost, 'democratised' access to Edtech is also inextricably linked to its pursuit of massively scalable platform services that can generate 'network effects' of escalating user numbers and secure highly profitable financial returns (Pampoulov 2022).

Furthermore, Owl highlights how its portfolio addresses the UN Sustainable Development Goals (SDGs) on eradicating poverty, health and wellbeing, quality education, gender equality, and decent work and economic growth (Owl Ventures 2021). Here, we see Owl positing VC as a moral force in achieving the SDGs, reflected in the expansion of its portfolio to include investees from Africa, Asia, and Latin America, as well as Europe and North America.

The social impact imaginary makes an interesting move regarding the scaling of digital products. In the previous section, we discussed that hypergrowth and fast scaling became normalised expectations of VC investors to reach fast ROI in financial terms. However, the narrative of social impact at the same time legitimises scaling as a matter of democratising learning, catering for accessibility and equality, and even contributing to the UN's SDGs. While the narrative of scalability turns the number of users into technology companies' assets in financial and economic terms (Birch, Cochrane, and Ward 2021), the narrative of social impact at the same time turns the number of users into a moral category. The narratives of social impact are constructed with the help of specific numbers and metrics, to which we turn next.

Market (e)valuation

Scaling Edtech and achieving social impact requires significant work from investors. Beyond the construction of narratives of expectation lie complex processes and practices intended to accomplish those desires. We discuss how particular investment techniques of impact evaluation and valuation function to construct and order Edtech markets to provoke Edtech market growth. These techniques and their devices are performative in creating and shaping the systems they are describing (Mackenzie and Millo 2003).

The first technique is the construction of evaluative criteria for calculating startups' prospective future value. For example, GSV 'focus on companies that score high on our 5Ps – People, Product, Potential, Predictability, and Purpose, as those ultimately lead to strong earnings' (Pampoulov 2022). First publicised in GSV founder Michael Moe's business book Finding the Next Starbucks, the '5Ps framework' has become a common language and a 'repeatable system' used by GSV for assessing startups for their suitability for investment – that is, their potential to generate long-term earnings and 'disproportionate gains' (GSV Ventures 2019). As a technique of both startup evaluation and valuation, the 5Ps act as a metric framework to support GSV's future expectations and stories.

Investment evaluation frameworks can also be used to rank and order whole markets, far beyond assessing individual startups for funding. GSV notably runs a number of annual competitions to rate and rank Edtech startups, using a particular proprietorial 'scoring system' to calculate their potential market growth. The annual Edtech 150 list compiled by GSV is derived by calculating 'scores across several KPIs' (key performance indicators), which include 'Revenue scale', 'Revenue growth', 'Active learner reach', 'International reach', and 'Margin profile' (As of January 7, 2022,

Argo listed on their website https://medium.com/gsv-ventures/gsv-edtech-150-the-most-transformational-growth-companies-in-digital-learning-39b6252048e7). The final list of 150 companies includes many big-name Edtech unicorns.

Similarly, the GSV Cup is an annual 'pitch' competition for early-stage startups to win seed funding, judged using the 5Ps Framework by judges from GSV and other investors, including Owl. It produces an annual list of the 'Elite 200', 'an acclaimed list of companies with the potential to become scaled players in the Edtech sector' profile' (As of January 18, 2022, Argo ad Rosenberg listed on their website https://medium.com/gsv-ventures/gsv-cup-elite-200-promising-pre-seed-and-seed-stage-startups-in-edtech-c62ac8b812aa). These competitions align the Edtech market with GSV's expectations of the future of education and its aspirations to generate disproportionate gains from 'scaled players'. The two lists are, therefore, not only catalogues of the past but catalysts of the future by directing resources and attention to scalable startup products that match the investor imaginary.

Another key way Edtech investors operate is through the deployment and presentation of particular measures of the impact of their investees. Owl, for instance, has begun publishing annual 'Education Outcomes' reports based on its belief that 'the most successful companies will be those that are able to quantitatively measure their education outcomes' (As of December 6, 2022, Owl Ventures listed on its website https://owlvc.com/outcomes.php). The report is a detailed catalogue of Owl's portfolio performance as captured by metrics of scale and access, diversity, and outcomes, and features graphics detailing its various outcomes, reported as measures of 'research & efficacy rigor' (Owl Ventures 2021). Consistent with Owl's emphasis on scalability and social impact, it features a series of quantitative indicators of the portfolio scale (such as its collective reach of portfolio companies to 228 countries and 445 million users) and diversity metrics, and aligns these indicators to UN SDGs. The 2021 report features outcomes profiles of 43 individual companies from Owl's current portfolio, each presented as a case study story supported by data visualisations and numerical outcomes metrics.

The portfolio case studies and metrics are characteristic of the success stories that VC investors construct to narrate past achievements and stimulate future action (Birch 2022). Through these techniques, Edtech investors undertake extensive (e)valuation of the Edtech market, both in terms of prospective valuation (rating of Edtech startup prospects) and retrospective evaluation of their impact outcomes. In this sense, these techniques of evaluating and valorising Edtech are key ways in which Edtech undergoes capitalisation. However, these forms of (e)valuation and the future expectations with which they are aligned depend on investors' political work. Interested actors compete in creating and instituting markets by offering their narratives, as we discussed above (making Edtech industry), making themselves legitimate, as we analysed in this section, and also labouring to make their visions happen (Beckert 2016). They perform futuring labour and strategise to make their visions legitimate and productive and engage in political work (Oomen, Hoffman, and Hajer 2021), to which we turn next.

Consolidating the Edtech industry

Thus far, we argued that investors, in general, and Edtech VC, in particular, are key actors in constructing the Edtech industry and are legitimising their role in it as moral actors. In this third step, we further develop our focus on Edtech investors as political actors. As noted in the introduction, we conceptualise political actors more broadly than state and government structures. Politics refers to the concern for the common good and is about the exercise of power in the broad sense (Scherer, Palazzo, and Matten 2014). Indeed, investors are gaining power as actors who are seen as best placed to decide for the common good (Chiapello 2015). They complement their narrative constructions with 'futuring' activities (Oomen, Hoffman, and Hajer 2021) and by constructing powerful cross-sector networks (Ferrary and Granovetter 2009) to exercise their political authority in advocacy politics (Néron 2010).

Investment networks

To achieve their objectives, VC investors must build various relations with other organisations and individuals. These include the limited partners who commit to investing in VC funds and much wider networks, including financial and market analyst firms, policy actors, academics and universities, journalists, social media commentators, foundations and philanthropies, and other audiences (Ferrary and Granovetter 2009). This is part of the laborious work investors undertake to produce conviction and consensus among others (Beckert 2016) in their diagnoses of the current problems of education and their expectations about how Edtech will solve those problems. As capitalisation professionals, investors not only deploy discursive repertoires and technical valuation methodologies, but move within specific social networks, organisational situations, and shifting political and economic contexts (Muniesa et al. 2017).

The first level of networking is an inter-organisational one between VC firms and Limited Partners, i.e. investors in VC firms who expect ROI from the portfolio. They are often not publicly disclosed, but Owl indicates it is 'backed by top global Limited Partners consisting of prestigious College & University Endowments, Sovereign Wealth Funds, Foundations, Strategic Education Institutions, and Family Offices from across the U.S., Asia, Europe, Middle East, and South America', calling it an 'aligned deep global network' that 'is critical to helping Owl and its portfolio companies with distribution channels, partnerships, and international resources and networks (As of December 6. 2022, Owl listed on its website https://owlvc.com/about.html). As such, a key practice for Owl is managing this 'aligned' network towards the shared aim of financing startups (often in co-investment syndicates with others) based on valuations of the future cash flow potential and supporting them to achieve international scale and reach.

A related form of networking is between individual actors within the VC firms and the wider investment landscape. Investors do not only finance startups: managing partners at GSV and Owl sit on the boards of startups they fund, playing an active advisory and steering role in their development. GSV co-founder Michael Moe, for example, has been on the board of Coursera since its first investment in the startup in 2013, and senior personnel have routinely moved to roles across GSV and Coursera (GSV Ventures on Twitter: https://twitter.com/gsvventures/status/1377353882360143874?s=20&t=VXLIz_wBKHGCXdOHMQJuzA). The current managing partner and director of GSV Ventures, Deborah Quazzo, leads 7 of GSV's investments in edtech companies and additionally sits on the on the board of 13 other edtech companies, such as Degreed and Turnitin. These relationships are characterised by active and engaged governance of the startup by the investor, whose task is to ensure the overall alignment of the portfolio with the expectations of future value creation negotiated between the investor and its limited partners.

Edtech investors' networks extend far beyond their portfolio companies and Limited Partners, i.e. those who invested in VC's funds, to further contribute to their political actions. As mentioned above, VC's managing partners are key figures in the social, economic, and political work of VC firms. Other constituents include market intelligence providers, such as HolonIQ, a partner in the GSV Cup for startups and a sponsor of GSV's annual conference. They also include educational institutions and policy actors. For rexample, GSV's Managing Partner is a board member of several private non-profit organisations, such as The Common Ground Foundation, The Educational Testing Service, The Falling Walls Digital Education Jury Board, The Khan Academy Thought Leadership Council, The New Profit Prophets Education Advisory Group, The Oriental Education Institute, The Strada Institute for the Future of Work Advisory Committee, and the Valenture Institute.

A second level of networking occurs where VC firms engage in diverse partnerships. Firms seek to connect with an ever-expanding set of policy actors. For example, Owl is included in a major public-private partnership Edtech funding initiative organised by Swiss-based philanthropic Jacobs Foundation that launched in 2021 (As of December 6, 2022, Jacobs Foundation listed on its webpage https://jacobsfoundation.org/jacobs-foundation-commits-chf-40-million-to-global-edtech-research-and-investment/). The initiative aims to build relations between the Edtech industry and learning science research; the scheme involves direct investment in Edtech VC firms, and

the introduction of evidence and evaluation tools to VC funds and portfolio companies. It is intended to inform philanthropic and public policy decisions on Edtech. These kinds of activities, together with VC firms' active engagement in discourses around SDGs (discussed above) and the ways they leverage national Education policies in their communications (As of December 6, Owl listed on its webpage https://owlvc.com/insights-indias-future-as-an-edtech-epicenter.php) broaden their policy networks. As such, Edtech investors move in networks that criss-cross the public and private sectors and traverse research, industry, finance, and philanthropy.

Futuring activities

Investors also perform 'futuring' work to convince various publics that their future narrative is plausible so that it becomes a collective imagination of the future and understanding of authority and power (Oomen, Hoffman, and Hajer 2021). For this to happen, Edtech investors must make their stories and expectations legible to various audiences, such as policy professionals and journalists. Therefore, they stage multisector encounters where visions of the Edtech future are presented and acted on, as part of their attempts to secure authority in the 'politics of expectation' (Beckert 2016). For example, the annual 'summit' organised by GSV Ventures acts as a major stage for presenting future expectations and producing conviction in other audiences, which is 'now known in the industry as the place where deals get done' (As of April 26, 2021, Wan listed on their website https://medium.com/gsv-ventures/changing-the-world-for-good-in-india-lead-school-b0e6c76e3e1b). According to GSV, the summit engages multisector stakeholders across finance, Edtech industry, policy, media and communications, from 100 + countries around the world for 'the most impactful convening of leaders in education and talent tech', which brings together 'global panels and thought leadership' as a 'community that is changing the world for good' (As of December 6, 2022, GSV listed on its website https://www.asugsvsummit.com/why-attend).

Edtech investors also run webinars, workshops, and other events, and write blog posts or comment articles as ways to reach audiences. For example, both Owl and GSV publish 'Insights' articles by their in-house team members or portfolio companies. Externally, they engage extensively with education journalists and are widely quoted and credited for their insights into current Edtech market trends and expected trajectories in the future, especially in the light of economic fluctuations such as the Edtech market boom of 2020–21 and the ensuing downturn of 2022 (Mascarenhas 2021; 2022).

By building networks and performing futuring activities, VC investors prove to be active political actors in the education sector. Rallying various actors, such as policymakers, practitioners, education leaders, and notable individuals, such as previous presidents of countries or showbusiness figures, draws attention and normalises investors as expert, moral, and central figures in education. It enables cross-network and sector movement of ideas and people, and enmeshes the public and private sectors of research, industry, finance, and philanthropy, who coalesce around particular visions and activities that favour VC agendas. These activities act as a kind of connective glue that binds finance, industry and policy actors together, and aligns them towards consensual expectations and aims for the future of education.

Conclusion

In this article, we have argued that Edtech-specific VC investors are becoming political as well as economic actors in the education sector. They imagine particular futures of education, and seek to materialise them through investment in selected startup companies and products. Edtech investors function through three key processes. First, they structure the Edtech industry not only by providing capital but also by constructing narratives of the future and scale. Second, they position themselves as expert and moral actors through narratives of social good and associated evaluative tools. Finally, they engage in the political work of constructing network relations to produce broader consensus and conviction in their visions of the future of education.

The imaginative and investment practices of Edtech VC by no means determine educational futures. Their claims on the future 'do not live or die by specifically prophesized outcomes; rather, they involve a rotating array of promissory themes that create space for optimism and investment', and offer 'a *selected* future as a constantly available reference point for speculation' (Hong 2022, 8, original italics). Nonetheless, we see the imagined futures of investors as performative, in the sense of catalysing action in the present towards the realisation of a selected future that appears to offer the best prospects for long-term cash flows. The imagining of educational futures in terms of scalable platforms that can solve major educational problems and achieve social impact internationally, and through repeated rounds of investment achieve 'unicorn' status on the way to an 'exit', is an imaginative act intended to generate 'disproportionate' gains for companies and their investors as much as it is intended to disrupt or transform education.

There are several educational implications of VC investors becoming economic and political actors in the sector. They include restructuring and expanding education markets, most notably by growing the Edtech industry, which allows for further privatisation, commodification, and assetisation of the education sector. Moreover, they can impact educational practices by supporting particular digital products via investment and narrative and network labour. For example, they fund AI products and promote their use, connect investees with users, and so on that have implications for learning and teaching within and outside the classroom (Eynon 2022; Jarke and Macgilchrist 2021). They may, in some cases, expand learning opportunities, claiming a moral position as facilitators of the UN SDGs, but in a form aligned with their imaginaries and market expectations. Therefore, VC investors' actions are highly consequential for the sector and its practices and deserve further scholarly attention.

There is a significant need for more research to attend to these increasingly powerful actors in education. Using a variety of methodological approaches, including ethnography and forms of social network analysis, such work could, for example, focus on the inner workings of these organisations with a focus on particular individuals such as the managing partners, provide a longitudinal analysis of the Edtech investment landscape, continue the exploration into how these actors are increasingly aligning with philanthropic and governmental organisations, and / or examine how questions of evidence and knowledge are mobilised. We hope this paper is the start of more research that attends to the economic and political work of these actors, who have been largely invisible in many debates about the future of Edtech and Education.

Notes

1. These numbers can be only indicative. First, not all investment deals announce the amount of investment. Hence, the figures exclude those investments that did not publicly reveal the sums. Second, data entry into Crunchbase data can lag in time; and perhaps not all deals are included for most recent years (Dalle, Besten, and Menon 2017).
2. These numbers have to be taken with caution and be treated with caution due to classification of industries in Crunchbase.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Economic and Social Research Council, UK under Grant [ES/T016299/1]. The contribution of Ben Williamson was supported by the Economic and Social Research Council, UK, under Grant [ES/W002639/1].

Data availability statement

We cited publicly available data sources that we used in this article. Due to commercial restrictions, data extracted from Crunchbase and Pitchbook databases cannot be made openly available.

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