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MEDIA, TECHNOLOGY & LIFELONG LEARNING
www.seminar.net

ISSN: 1504-4831 Vol 21, No 1 (2025) https://doi.org/10.7577/seminar.6170

The Education-Industrial Complex Going Global

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Abstract

In 1994, I first wrote about an education-industrial complex that was emerging in the United States. The education-industrial complex was defined as networks of ideological, technophile and for-profit entities that sought to promote their beliefs, ideas, products and services in furtherance of their own goals and objectives. In the years since, the education-industrial complex has grown into a global phenomenon and has become a major force among powerful players (i.e., mega-corporations, international interest groups, and government officials) to influence education policy. This paper describes the present global education-industrial complex and concludes with a call to monitor and study its further evolution.

Keywords: Education-industrial complex, corporate influence, globalization, COVID, education technology

Introduction

In 1994, I wrote an article entitled, *Technology and the evolving education-industrial complex*. It referred to the networks and alliances that were forming to promote the use of technology and related services in American K-12 education (Picciano, 1994). I described an education-industrial complex in its infancy but contended that within the next ten or more years a major new thrust would occur causing it to become "very visible". The education-industrial complex was defined as networks of ideological, technophile and for-profit entities that seek to promote their beliefs, ideas, products and services in furtherance of their own goals and objectives. This complex was fueled by significant resources and advocacy provided by companies, foundations and the media that want to shape education policy to conform to their own ideals and that also stand to profit significantly from its development. Furthermore, the education-industrial complex is not simply a single entity conspiring to influence education policy. In fact, it is made up of multiple networks that sometimes share agendas but frequently operate independently and compete with one another for contracts and sales of goods and services. In the early 2000s, in the aftermath of federal legislation, specifically *No Child Left Behind* (2001), the American education-industrial complex was apparent and growing stronger as K-12 education moved to use education technology to comply with new government mandates for assessments, data-reporting, and curricular enhancements. Companies such as Microsoft, Apple and Google introduced products directed primarily at K-12 education. Commercial education software providers expanded. For example, in the late 1990s, Pearson Education, Inc., a London-based company with a small market in the United States, started acquiring American textbook publishers at a rapid clip and by the early 2000s, evolved into a major supplier of education software, curriculum, and testing materials for American K-12 schools. These commercial activities were further accelerated by the influences of these same corporations, special interest groups, and lobbyists on policy makers in federal and state education agencies.

In 2013, Joel Spring and I published a book that revisited the American education-industrial complex, which by then was a powerful force in shaping neoliberal policy in the United States (Picciano & Spring, 2013). Mega corporations through their venture philanthropies such as the Bill and Melinda Gates Foundation, The Eli and Edythe Broad Foundation, and the Walton Family Foundation were focused on moving education toward neoliberal goals of privatization, school choice/competition, fiscal accountability, standardization, and data-driven management systems. Technology was a major enabler for their neoliberal agenda (Harvey, 2005). Picciano & Spring (2013) documented how these corporations and philanthropies were able to see that former officers, employees and their representatives were appointed to key policy making positions in American governing agencies. At the same time, it also became obvious that companies such as Microsoft, Google, Apple, and Pearson Education, Inc. were players on the global stage, promoting technology-infused education throughout the world. American and non-American educational services providers were operating in Asia, Europe, Africa, and South America. Global for-profit higher education blossomed in the early 2000s in institutions such as the University of Phoenix, Capella University, and Kaplan, Inc.. American education technology enterprises were also joined by companies headquartered in other parts of the world such as Adtalem Global Education (Chiba, Japan), Grand Canyon Education (Essen, Germany) and New Oriental Education and Technology (Beijing, China).

As we move forward, the evolution of the education-industrial complex has been accelerated by the COVID-19 pandemic that started in 2019. A 652-page UNESCO Report entitled, *An ed-tech tragedy? Educational technologies and school closures in the time of COVID-19*, provides extensive details of the deleterious effects of the pandemic on education (UNESCO, 2023). Schools and colleges were forced to develop quickly online learning applications in order to maintain services and survive the ravages of the disease. School administrators, teachers, counselors, and auxiliary staff became dependent upon technology in order to conduct all aspects of their operations. As far back as 1812, Georg Friedrich Hegel in his book, *Science of Logic*, remarked that quantitative changes can lead to qualitative changes when the accumulation of these changes reaches a critical point that triggers a fundamental transformation or transition. This transformation takes the form of a new quality that emerges from the accumulation of these changes. As applied to social systems, this transition can mean a cultural shift. As applied to the discussion here, education especially our secondary and postsecondary institutions gradually had been making greater use of online technology for instruction, advisement and administrative services. The COVID pandemic pushed these institutions to expand the use of technology to the point wherein a cultural shift or a 'new normal' occurred making them and their students totally accepting and dependent upon online technology for most of their basic services and operation. In this paper, a critical examination is undertaken to show how this shift has promoted the influence of the education-industrial complex.

The Global Stage

On the global stage, the major actors include international technology companies, education software, testing and curriculum providers, and corporate associations and philanthropies. Promoting the need for society, including schools and colleges, to adopt technology is no longer the focus, since the global society has reached the point where technology is an absolute functional necessity. People throughout the world have embraced technology, especially via mobile devices, as a fundamental aspect of their daily lives. The global education-industrial complex has moved into a competition among major players to influence the nature and extent of the technologies being used to solidify market share and expand their profitability.

Several major technology companies individually are each generating revenues in excess of US$2 trillion per year which is more than the vast majority of national economies. Google (parent company Alphabet), Apple, and Microsoft have resources comparable to most countries. Only the United States, China, Japan, and Germany have substantially more resources. Big tech companies now have offices and operations throughout the world and work assiduously to have their products known and acquired. They use their influence as needed to ensure success and profitability. This includes heavy promotion of education technology as countries continue to invest significant resources in their schools, colleges, and universities. Since its creation, Apple has been a major provider of education products (MacIntosh computers, iPads, iPhones and associated software). Google products, including Chromebooks and the Google Classroom, have gained a significant share of the education market. Microsoft continues to dominate large segments of the education market by virtue of its Windows operating system, Outlook, Edge, and its Teams for Classrooms software. As we moved into the 2020s, other technology-based companies including Amazon (Web Services (AWS) for Education,). Oracle (Database Management), and Blackboard (Course Management Software) are vying to attract the education

sector and pressing schools and colleges to move to cloud-based computing for all their technological needs.

Companies which develop specific education services such as online courses, curriculum material, and tutoring have also grown considerably in the past several decades. Figure 1 is a listing of some major education-specific technology providers. Many of these companies have seen their profits mushroom in the past ten years and especially since the COVID pandemic.

As stated earlier, technology is one major enabler of the broad neoliberal goals of privatization, competition, common standards, fiscal accountability, testing and assessment. Technology companies promote their products for profitability as well as for the goals specified above. In the following section, examples are provided to demonstrate the reach of the education-industrial complex in this regard.

Figure 1.

Major Education Technology Providers (Source: Kolmar (2023))

1. **Pearson plc**

   Headquarters: London, United Kingdom

   Revenue: US$6.5 billion

   Pearson provides education software, assessments, textbook publishing and a variety of other education services. It operates in 70 countries.

2. **TAL Education**

   Headquarters: Beijing, China
   Revenue: US$4.5 billion

   TAL Education provides after-school education to students in primary and secondary school.

3. **New Oriental Education and Technology**

   Headquarters: Beijing, China
   Revenue: US$3.11 billion

   New Oriental Education and Technology, often called New Oriental, is the largest provider of private educational services in China in terms of student enrollment, geographic presence, and the variety of programs offered. They also operate North America and United Kingdom departments focusing mainly on college exams, such as the SAT, ACT, and TOEFL.

4. **Bright Horizons**

   Headquarters: Cincinnati, Ohio, USA
   Revenue: US$2.0 billion

   Bright Horizons Family Solutions is the largest provider of employer-sponsored childcarein the United States. Their other primary educational products include education advising and

back-up childcare. They also operate in Canada, the United Kingdom, the Netherlands, and India.

5. **Adtalem Global Education**

   Headquarters: Chiba, Japan

   Revenue: US$1.5 billion

   Adtalem Global Education, formerly known as DeVry Education Group, is an educational services conglomerate that owns and manages post-secondary education institutions. They operate in a number of countries including Japan, the United States, Singapore and the Netherlands.

6. **Strategic Education**

   Headquarters: Herndon, Virginia, USA
   Revenue: US$1.07 billion

   Strategic Education is a holding company that owns several notable educational services businesses including Capella University and Strayer University, which together enroll 100,000 students worldwide.

UNESCO Report

UNESCO conducts a bi-annual *Global Education Monitoring Report* which reviews the state of K-20 education around the world (UNESCO, 2021; UNESCO, 2023b). It provides a comprehensive examination of current issues pertinent to education. Its report entitled *Non-state actors in education: Who chooses? Who loses?* published in 2021-22 (574 pages), looks at the role that non-state actors have in schooling at various education levels and influence spheres. Chapter Five, entitled *Influence*, examines competing networks in business, international organizations and philanthropies that compete and promote the interests of non-state or private actors. For anyone interested in the reach of the global education-industrial complex, this report is a good starting point.

The Report's Chapter Five includes a number of 'Key Passages' to illustrate the influences of private entities on education. Here is a sample.

1. A network led by the International Finance Corporation framed its approach on public–private relationships in education by stating that education was a consumer good.
2. The World Bank uses loan conditions, technical assistance, research studies and events to strengthen its position as a knowledge broker. Analysis of its recommendations in 10 countries showed it promoted more private provision in 9 and less regulation in 6.
3. Ark, a manager of 39 schools in England (United Kingdom), has an international arm that advises governments how to outsource management of public schools, for instance in Liberia and South Africa.
4. Business organizations often express support for school choice, competition and for-profit education, standardized assessment and publication of results, as in Japan.

5. In the United States, the Bill and Melinda Gates Foundation backed the charter school movement. Brazil's Lemann Foundation mobilized broad consultation in pursuit of the goal of national core curricular standards.
6. Corporate investment in education has been increasing. Venture capital investment grew from US$2 billion in 2014 to US$4 billion in 2018, concentrated in China (50%), the United States (20%), India (10%) and Europe (8%).
7. Education technology firms are frequently presented as enablers and disruptors. But their claims on products can be misleading. Just 2% of 10,600-plus products reviewed in a US government clearinghouse were classified as strongly or moderately effective. (UNESCO, 2021, p. 117)

While all of these "key passages" relate to the topic of the education-industrial complex, item No. 7 might be of particular interest. The clearinghouse being referred to is the United States Department of Education Institute of Education Sciences (IES) *What Works Clearinghouse Project (WWC)*. IES is a premier source for research, evaluation and statistics that can help educators, policymakers and stakeholders to improve education. I have had the pleasure of being a consultant for IES and can vouch for the thoroughness, objectivity, and quality of its work (see Dabbagh et al., 2019). The IES develops practice guides in conjunction with an expert panel, combining the panel's expertise with the findings of existing rigorous research to produce specific recommendations for addressing these challenges. 'Rigorous' is defined as random sample, pre-posttest experimental research. Generally, the approach is to conduct a meta-analysis on the focus of the research. The UNESCO reference in item No. 7 refers to a review conducted in 2020 for The Hechinger Report which is a highly respected organization without political leanings. In this report, the authors quoted Kathryn Stack, who spent 27 years at the White House Office of Management and Budget and helped design grant programs that award funding based on evidence of effectiveness.

> "We're spending a ton of money…There is a private-sector motive to market and falsely advertise benefits of technology, and it's really critical that we have better information to make decisions on what our technology investments are." (García Mathewson & Butrymowicz 2020)

In another passage, the authors cite a specific example as follows:

> "The What Works Clearinghouse assesses the quality of research about education products and programs. It first did a review of Pearson's SuccessMaker Reading in 2009 and updated it in 2015, ultimately concluding that the only Pearson study of the program that met the What Works' threshold for research design showed that the program has "no discernible effects" on fifth and seventh graders' reading comprehension or fluency." (ibid.)

The report concludes that education technology vendors should be held to high standards of truthfulness in the claims they make about their products. In too many cases, they rush their products to market without doing proper evaluations that require a good deal of time, effort, and expertise. As an example of the above, Strauss (2016) in an article for The Washington Post, listed more than 50 instances of errors, problems or questionable practices with Pearson Education

including the fact that New York State sued and won a US$7 million court case for inappropriate foundation-related activities.

The Organization for Economic Cooperation and Development, PISA, and Pearson

The Organization for Economic Cooperation and Development (OECD) is an organization that is "owned", governed, and financed by the highly industrialized countries of the world. The prime mandate of the OECD is to promote economic growth and development in a global free market economy. Over the last several decades, education has become an important concern for OECD's activities, and PISA has become the key project in this context. The Program for International Student Assessment (PISA) was initiated by the OECD in 2000 and has since then dramatically changed educational debates and policies worldwide. The PISA framework for testing is best understood in the wider social, political and ideological context. PISA is a well-funded instrument of power that has steadily increased its influence on the educational discourse and policies in its 70 participating countries. It has spurred global educational debates into a race to improve PISA-rankings in many countries. (Sjøberg, 2017)

The PISA test is anonymous, and no results are reported back to the students, their teachers or even their schools. Results are only reported at the system and national levels. When results are released every third year, overwhelming attention is given to the ranking of countries as given by the mean scores. PISA results are headline news all over the globe. While the OECD does not have formal political power, it exerts influence through its reports, policy papers and expert advice, known as "soft power", "governance by numbers" and "governance by comparison" (Meyer, 2013). There is an abundance of literature providing details of how OECD exerts this power globally to define reality and exert its influence (ibid.). In many countries new curricula caused by "PISA-shocks", have been introduced, (e.g., Norway, Denmark, Sweden, Germany and Japan). And, in many countries new national standards as well as new systems of obligatory national testing have been introduced. Some of these are directly influenced by PISA documents, as proudly noted in a comprehensive report by the OECD itself (Breakspear 2012).

OECD has had a close relationship and subcontracts for much of PISA with Pearson Education, Inc. the world's largest commercial educational company. Pearson is responsible for developing the frameworks for the PISA assessment. The frameworks define what will be measured on PISA, how results will be reported, and which approach will be chosen for the development of tests and questionnaires. The partnership with PISA/OECD is an important strategic move for Pearson, which has offices in more than 70 countries making it readily available to promote PISA, to analyse results, and to assist countries wishing to improve their scores. Pearson also produces "The Learning Curve", a ranking of nations according to a set of test-based indicators (Lindgard, 2015). Andreas Schleicher, Director for Education and Skills, and a special adviser on education policy to the secretary-general, at the Organization for Economic Co-operation and Development, also sits on the Advisory Panel of The Learning Curve. The Learning Curve utilizes data from programs that have been paid for out of nations' public purses including, for example, for participation in the OECD's PISA as well as the International Association for the Evaluation of Educational Achievement (IEA)TIMSS (Trends in International Mathematics and Science Study) and PIRLS (Progress in

International Reading Literacy Study). Pearson also has a relationship with IEA in designing and evaluating its assessments.

Possible problems loom with this substantial involvement of one private company in the development of public education policy:

> "We see a potential democratic deficit, as Pearson's bottom-line is profit and they have no political constituency. To some extent, this state of affairs has been enabled by the restructured state that has outsourced many of its policy-related functions. We should be concerned about the ways that Pearson is seeking to build a global education policy consensus efficacious to their business interests." (Lindgard, 2015)

Put simply, Pearson, with its association with OECD has positioned itself to influence the design, production, and assessment of PISA while also advising on curriculum approaches including education technology software to address perceived deficits.

Billionaire Philanthropy

Any discussion of the global education-industrial complex would not be complete without mentioning the philanthropy of the world's billionaires. Currently there are more than 3,000 billionaires, many of whom contribute to social, humane, environmental and health care causes. Education in particular is a popular focus of giving. For instance, The Giving Pledge, a campaign founded by Bill Gates and Warren Buffett, encourages wealthy people to contribute a majority of their wealth to philanthropic causes. As of June 2022, the pledge had 236 signatories from 28 countries. The scope of The Giving Pledge is global and involves projects in countries all over the world. When individuals join The Giving Pledge, they include a letter indicating their specific philanthropic interests. By far, education is the most frequently cited interest, outpacing the 2nd most (health) 90 to 64 (Schmitz & McCollim, 2021). The work of many of the billionaires around the world such as Mackenzie Scott (USA), Azim Premji (India), Carlos Slim (Mexico), Christopher Hohn (United Kingdom), and Li Ka-shing (Hong Kong) is admirable and should be commended. However, some billionaires have used their positions and foundations not simply for charitable purposes but to influence policy (Srinivasan & Bloom (2021).

In our book on the American-education-industrial complex, we devoted a chapter on foundations that use their resources to influence policy. We specifically focused on "venture philanthropies" and we raised the following question:

> "When venture philanthropies get involved with publicly funded education, to whom are these foundations accountable especially if a program does not work or in fact does more harm than good?" (Picciano & Spring, 2013, p. 121)

The answer is that they are accountable to no one and have in fact infringed on the powers and privileges of democratically elected or appointed policy boards. It is not my purpose here to review this issue since I have already written about it (ibid.). I would recommend *Private virtues, public vices: Philanthropy and democratic equality* by Emma Saunders-Hasting, E. (2022). Before concluding this section, let us examine the perspective of Bill and Melinda Gates whose foundation has donated billions of dollars to education.

The Bill and Melinda Gates Foundation has been generous in donating billions of dollars over the years since its founding in 2000. Its world health initiatives have generally been well-received. With regard to education, most of its initiatives have been in the United States although it has also donated to global education. For example, in 2018, it launched a new US$68 million global education initiative with the World Bank directed primarily at children in low-income countries. In the United States, the Foundation has had major initiatives in education directed at small schools, a Common Core Curriculum, assessments, and partnerships with Pearson. These initiatives for the most part have been failures. A 500-page Rand Corporation Report on a US$575 million Gates-funded teacher evaluation program in several large school districts and charter school networks found scant evidence that the program accomplished what it was meant to do: improve teacher quality or boost student learning (Stecher et al, 2018). The Report details the political and technical challenges of putting complex new systems in place and served as validation to the foundation's critics, who have long complained about Gates' heavy influence on education policy and what they call its top-down approach (Barnum, 2018). In their Annual Foundation Letter (Gates, 2020), Bill and Melinda Gates admitted that school reform is harder than they thought and that none of their efforts have worked as they had hoped. Critics go further, charging that some of their projects have harmed public schools because they were unworkable from the start and consumed resources that could have been better spent (Strauss, 2020). It is not clear that the foundation has any real understanding of educational issues. For example:

> "We (Gates) certainly understand why many people are skeptical about the idea of billionaire philanthropists designing classroom innovations or setting education policy. Frankly, we are, too. Bill and I (Melinda) have always been clear that our role isn't to generate ideas ourselves; it's to support innovation driven by people who have spent their careers working in education: teachers, administrators, researchers, and community leaders. But one thing that makes improving education tricky is that even among people who work on the issue, there isn't much agreement on what works and what doesn't. […] Are charter schools good or bad? Should the school day be shorter or longer? Is this lesson plan for fractions better than that one? Educators haven't been able to answer those questions with enough certainty to establish clear best practices." (Gates, 2020)

Instructional practice is not the same as giving a child a measles vaccine. And yet there is no agreement on any single instructional approach. Education is an intensely complex social activity that changes from class to class, from school to school, and from community to community. What works in one place will not necessarily work someplace else. Later on in the letter, they state:

> "But if there's one lesson we've learned about education after 20 years, it's that scaling solutions is difficult. Much of our early work in education seemed to hit a ceiling. Once projects expanded to reach hundreds of thousands of students, we stopped seeing the results we hoped for. It became clear to us that scaling in education doesn't mean getting the same solution out to everyone. Our work needed to be tailored to the specific needs of teachers and students in the places we were trying to reach." (ibid.)

Had they listened to educators twenty-three years ago, they may have avoided some serious mistakes and not have been the source of disruption in so many schools.

Looking to the Future

As we look to the future, education technology will proliferate and expand as a vehicle for promoting neoliberal policies in all areas of education. Privatization, competition, common standards, fiscal accountability, testing and assessment will be the major goals. Newer technologies related to data analytics, artificial intelligence infused adaptive learning and massive cloud computing will be focal points of the global education industrial complex. While there will be well-meaning attempts to regulate these technologies, it will be difficult to do so. Global technology companies have a certain amount of independence by virtue of their operations in many countries. There is also a reluctance on the part of many capitalistic countries to overly regulate private enterprise. As a result, any attempt by one country or even a group of countries such as the European Union will be limited in how much can be accomplished. For example, China is one of the major players in developing advanced technologies. Its leadership has shown little interest in regulation.

In September 2019, I published an article in the *Online Learning Journal* entitled "Artificial intelligence and the academy's loss of purpose!" (Picciano, 2019). I proposed a model in which advanced nanotechnology and quantum computing would usher in new developments in man-machine interfacing. I further speculated that these developments depended upon artificial intelligence software, super cloud computing, robotics and bio-sensing technology, all of which held possibilities for radically altering the way most organizations including schools, colleges and universities functioned. In 2019, it was my estimate that most of this development was at least a decade or more away. I was wrong, not about the nature of these developments but when they would occur. In fact, we are seeing many of these developments now and they are accelerating as a result of a broader acceptance of technology in our global society and because of the coronavirus pandemic that forced all enterprises, including education, to intensify efforts to utilize technology. We are seeing artificial intelligence and cloud computing with all their contingent facilities and issues increasingly being integrated into our daily lives. They are changing the traditional roles in our schools, colleges and universities to the point that many educators will reconsider their functions and purposes as teachers, advisers, researchers and administrators.

In a message to the World Economic Forum in 2015, Drew Faust, the former president of Harvard University, described three major forces that would shape the future of education:

1. the influence of technology
2. the changing shape of knowledge
3. the attempt to define the value of education (Faust, 2015)

She went on to extol the facilities that digital technology and communications would provide for teaching, learning, and research. She foresaw great benefits in technology's ability to reach masses of students around the globe and to interrogate easily large databases for scaling up and assessment purposes. On the other hand, she stressed the importance of physical interaction and shared experiences (ibid.).

In sum, the global education-industrial complex will focus on the digital and it will be left to the educators to consider the human experience. The issue of technology and its expanded integration in our societies will grow considerably in the years ahead as new digital hardware and software are developed. In 2023, we saw the emergence of generative artificial intelligence in the form of

products such as OpenAI's ChatGPT. AI technology has the potential to radically change our human experiences. It needs to be monitored and studied carefully as it evolves.

References

Barnum, M. (2018). *The Gates Foundation bet big on teacher evaluation. The report it commissioned explains how those efforts fell short*. Chalkbeat, May 21, 2018. https://www.chalkbeat.org/2018/6/21/21105193/the-gates-foundation-bet-big-on-teacher-evaluation-the-report-it-commissioned-explains-how-those-eff [Accessed: 15.07.2023].

Breakspear, S. (2012). *The Policy Impact of PISA: An Exploration of the Normative Effects of International Benchmarking in School System Performance*. OECD Education Working Papers (71), OECD Publishing. https://www.oecd-ilibrary.org/education/the-policy-impact-of-pisa_5k9fdfqffr28-en [Accessed: 29.07.2023].

Dabbagh, N.,Bass, R., Bishop, M.J., Costelloe, S., Cummings, K., Freeman, B., Frye, M. Picciano, A.G., Porowski, A., Sparrow, J., & Wilson, S. J. (2019). *Using technology to support postsecondary student learning: A practice guide for college and university administrators, advisors, and faculty*. Washington, DC: Institute of Education Sciences, What Works Clearinghouse. https://whatworks.ed.gov [Accessed: 20.07.2023].

Faust, D. G. (2015). *Three forces shaping the university of the future*. World Economic Forum. https://agenda.weforum.org/2015/01/three-forces-shaping-the-university-of-the-future/ [Accessed: 01.08.2023].

García Mathewson, T., & Butrymowicz, S. (2020). *Ed tech companies promise results, but their claims are often based on shoddy research*. The Hechinger Report. https://hechingerreport.org/ed-tech-companies-promise-results-but-their-claims-are-often-based-on-shoddy-research/ [Accessed: 20.07.2023].

Gates, B. (2020). *Annual Letter*. Gates Notes - Blog of Bill Gates. https://www.gatesnotes.com/2020-Annual-Letter?WT.mc_id=20200129100000_AL2020_GFG-ORG_&WT.tsrc=GFGORG [Accessed: 15.07.2023].

Harvey, D. (2005). *A brief history of neoliberalism*. New York: Oxford University Press.

Hegel, G. F. (2015). *The science of logic*. Cambridge, UK: Cambridge University Press. (First publication 1812).

Kolmar, C. (2023). *The 10 Largest For-Profit Education Companies in the World*. Zippia Career Experts. https://www.zippia.com/advice/largest-for-profit-education-companies/ [Accessed: 11.07.2023].

Lingard, B. (2015). *The Learning Curve of Pearson*. Education International. https://www.ei-ie.org/en/item/21319:the-learning-curve-of-pearson [Accessed: 19.07.2023].

Meyer, H.-D. (2013). *OECD's PISA: a Tale of Flaws and Hubris*. Teachers College Record. www.tcrecord.org/content.asp?contentid=17371 [Accessed: 19.07.2023].

Picciano, A. G. (1994). Technology and the evolving education-industrial complex. *Computers in the Schools*, 11(2), 85-101.

Picciano, A. G. (2019). Artificial intelligence and the academy's loss of purpose! *Online Learning*, 23(3). https://olj.onlinelearningconsortium.org/index.php/olj/article/view/2023 [Accessed: 01.08.2023].

Picciano, A.. G., & Spring, J. (2013). *The great American education-industrial complex: History, technology and profit*. New York: Routledge/Taylor & Francis.

Saunders-Hasting, E. (2022). *Private virtues, public vices: Philanthropy and democratic equality*. Chicago: University of Chicago Press. https://doi.org/10.1017/s0034670523000578

Schmitz, H. P., & McCollim, E. M. (2021). Billionaires in global philanthropy: a decade of the Giving Pledge. *Sociology*, 58. https://doi.org/10.1007/s12115-021-00580-0 [Accessed: 27.07.2023].

Sjøberg, S. (2017). *PISA Testing: A global education race?*. Europhysics News. https://www.europhysicsnews.org/articles/epn/pdf/2017/04/epn2017484p17.pdf [Accessed: 16.07.2023].

Srinivasan, R., & Bloom, P. (2021). Tech Barons Dream of a Better World – Without the Rest of Us. In B. Herlo, D. Irrgang, G. Joost, & A. Unteidig (Eds.) *Practicing Sovereignty (pp. 23–46)*. transcript Verlag. https://doi.org/10.1515/9783839457603-002 [Accessed: 24.11.2023].

Stecher, B. M., Holtzman, D. J., Garet, M. S., Hamilton, L. S., Engberg, J., Steiner, E. D., Robyn, A., Baird, M. D., Gutierrez, I. A., Peet, E. D., Brodziak de los Reyes, I., Fronberg, K., Weinberger, G., Hunter, G. P., & Chambers, J. (2018). *Improving teaching effectiveness: Final report: The intensive partnerships for effective teaching through 2015–2016*. Santa Monica, CA: RAND Corporation. https://www.rand.org/pubs/research_reports/RR2242.html [Accessed: 15.07.2023].

Strauss, V. (2020). *Bill and Melinda Gates have spent billions to shape education policy. Now, they say, they're 'skeptical' of 'billionaires' trying to do just that*. The Washington Post. https://www.washingtonpost.com/education/2020/02/10/bill-melinda-gates-have-spent-billions-dollars-shape-education-policy-now-they-say-theyre-skeptical-billionaires-trying-do-just-that/ [Accessed: 15.07.2023].

Strauss, V. (2016). *Pearson's history of testing problems — a list*. The Washington Post. https://www.washingtonpost.com/news/answer-sheet/wp/2016/04/21/pearsons-history-of-testing-problems-a-list/ [Accessed: 14.07.2023].

Todorov, G. (2023). *General Google Classroom stats and facts 2023*. Thrive myway. https://thrivemyway.com/google-classroom-stats/ [Accessed: 10.07.2023].

UNESCO (2021). *Global Education Monitoring Report 2021/2: Non-state actors in education: Who chooses? Who loses?*. Paris, UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000379875 [Accessed: 15.07.2023].

UNESCO (2023a). *An ed-tech tragedy? Educational technologies and school closures in the time of COVID-19.* UNESCO. https://www.unesdoc.unesco.org/ark:/48223/pf0000386701 [Accessed: 24.11.2023].

UNESCO (2023b). Global Education Monitoring Report 2023/4. Global education monitoring report, 2023: technology in education: a tool on whose terms? UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000385723 [Accessed: 24.11.2023].