Liberating Education: What From, What For?

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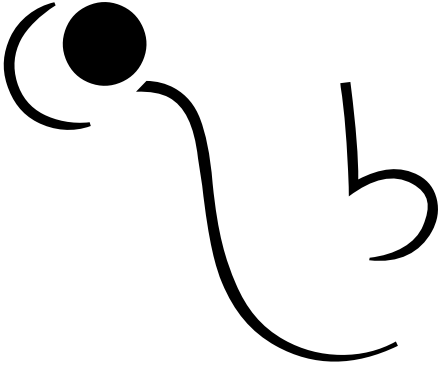

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Границы ключ переломлен пополам...
The key to the border is broken in half...
Yegor Letov, 1988
(Soviet / Russian punk rock poet)

Introduction

Educational Technology, EdTech, is a rapidly growing field that integrates theoretical and applied aspects of techno-social approach to education. In the recent decade, it has become one of the major trends of the world education market, educational culture and

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politics, the response to the digital revolution and societal change. The development of EdTech has accelerated even more as a result of face-to-face instruction limitations caused by the COVID-19 pandemics.

As educational technology is advancing and extending throughout various contexts of human learning, there is a growing demand for conceptualization and critical analysis of EdTech through the lens of philosophy, and especially political philosophy, educational philosophy, as well as ethics.

Employing technology for education is not a new phenomenon but its comprehension has been evolving for the previous half a century. In 1977 the Association for Educational Communications and Technology defined EdTech as "a complex, integrated process involving people, procedures, ideas, devices and organization for analysing problems and devising, implementing, evaluating and managing solutions to those problems involved in all aspects of human learning" (Association for Educational Communications and Technology 1977). Thirty years later their definition became even broader and currently states that:

> Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources. (Association for Educational Communications and Technology 2008).

Apparently, one of the major changes in the definition is the emphasis on *ethical* implementation of processes and resources that requires evaluation of their *improving* potential. This evolution of the concept reflects the growing recognition of the intrinsic ideologies that "are mobilized to shape ethics and justify internal policies and interactions" (Haase 2017: 630) within educational context.

Ideology that is generally perceived as a "framework of ideas which a community uses to define values and to make them explicit" (Lorge 1982: 86) has its particular meaning within the EdTech domain. It of-

ten assumes "inclusive ideologies embedded in the design, development and use of technology" (Amory 2007: 657). The intrinsically ideological nature of EdTech is reflected in specific features that are often defined by the architecture and design of the instructional tools or by the information ecosystem. In many cases EdTech establishes rules that can have higher impact than the interests or choices of the learning communities or individual learners, teachers and other consumers or *users* of the technology.

The concept of EdTech now engages multiple disciplines such as psychology, neuroscience, pedagogy, social science, computer science, cybernetics, legal studies, management, and others that are shaping "an inherently interdisciplinary enterprise" (Spector 2015: 11). Educational technology practices involve various interested parties that influence the ways EdTech is developed, implemented, and becomes obsolete. However, the critical analysis of the socio-political role of particular educational technologies is not common.

Educational Institutions, Technology and Data

One of the hidden but most significant aspects of EdTech is the major change it brings to the traditional roles of stakeholders in education because of "the underlying challenges and issues faced by the different user groups involved in the technology implementation processes" (Chew 2018: 176). EdTech also introduces new types of stakeholders, previously unrelated to education, such as IT services, digital content providers, software companies, hardware manufacturers and vendors, governmental policy regulators, information security agencies, and other entities influencing digital ecosystems in terms of both infrastructure maintenance and process management. Corporate education and human resource management also become equipped with technology and actively develop new forms of training and assessment for the employees.

The role of educational institutions is undergoing deep transfor-

mation because of the various forms of distance learning and blended instruction throughout the curricula. Their core process is becoming sociotechnical and dependent on particular IT solutions. In addition to establishing and supporting the traditional *brick-and-mortar* instructional environment, designing, implementing, and administering the curricula, the majority of educational institutions are now responsible for the digital infrastructure with growing amounts of educational data and personal data which fall under strict regulations. Schools, universities, and other educational institutions are supposed to "prepare, license, and provide professional support for teachers, tutors, coaches, and mentors who were trained to orchestrate their coordinated activities through the use of a sophisticated technology infrastructure" (Dede 2011: 4). Educators and educational administrators become users who have access to various levels and functions of a technical system, and it transforms the roles they play in the organization.

The majority of users of an EdTech system are learners who constantly generate data. Educational data collection and analysis or *learning analytics* (LA) engage processing "data about learner and teacher activities, identifying patterns of behaviour and providing actionable information to improve learning and learning-related activities" (Maseleno et al. 2018: 1124). Therefore, anonymized services or services that do not track user activities are extremely rare in the EdTech domain where monitoring a personalized learning path is an important factor for the efficiency of educational process.

For example, *learning management systems* (LMSs) or platforms, a widespread class of EdTech entities, are based on the hierarchy of access to different parts and functions of the system (courses, content, administrative tools), and to the data generated by users. LMS platforms allow users with higher administrative rights to transform excessive data from the LMS log "into educationally relevant information" (Whitmer, Fernandes & Allen 2012). The processed data are employed by technicians, managers, and increasingly artificial intelligence for mak-

ing informed decisions at both individual and organizational levels.

The issue is that the learner is usually placed at the lowest level in the hierarchy of access to data and metadata within this environment. Digital learner's degree of freedom is determined by the designer of the platform and the permissions granted by the upper levels of the users with more privileges (course instructors, content designers, technical administrators). Moreover, the architecture and design of the vast majority of EdTech systems often intend to limit the learner's choices in order to lead him/her alongside a particular path with a number of possible variations based on the previous results. This approach is reflected in the design of contemporary EdTech systems and, as we argue, in the intrinsic ideology of the entire digital learning ecosystem.

Contemporary solutions in educational technology "involve evaluating students' likely learning profiles on applications that use big data to categorize individual learning styles and then direct appropriate learning activities to those students" (Regan 2019: 168). Continuous data collection and analysis serve as a mechanism for providing interactive and adaptive content, as well as for further development of the system itself. The more data collected from an individual learner, the better individualization can be achieved. Even the data generated from non-learning activities and non-educational data (biometric, social, psychological) can be utilized. But that raises "a range of ethical questions such as levels of visibility, aggregation, and surveillance" (Slade 2013: 1514). The data and metadata collected during the educational process become the basis for data-driven management in organizations or even on a larger scale when it comes to the regional or national systems of education.

EdTech implementation brings a new perspective on another type of stakeholder, making members of households partially responsible for the technical infrastructure of education. Technology-supported learning and teaching occur beyond the classroom regardless of their

time and place. The data collected via the educational software or services (IPs, technical characteristics of devices and software, file metadata, etc.) can become an additional source of security issues or raise ethical concerns.

Educators traditionally have a wider range of choices for decision-making than learners do. Within EdTech systems they are granted a higher level of access and administrative rights accordingly. Technology-mediated teacher-learner interaction varies from direct classroom-like experiences through web conferencing or webinars to automated 'teacherless learning' such as intelligent tutoring systems (ITSs) guiding "learners through each step of a problem solution by creating hints and feedback" (Kulik 2016: 43). In either case, educators shape the learning experience by providing the context and the content, but they are limited in their choices by the existing EdTech tools.

Administrators of educational institutions have the highest level of access to the data and the largest number of options for decision-making. But with the introduction of EdTech, their decisions are increasingly restricted by the intrinsic policies of the platforms and applications inherent in them by design. So, the administrators are obligated to balance between the internal institutional regulations and external EdTech protocols. Their decision-making becomes even more challenging when there is a contradiction between them. For example, many EdTech services may originate from educational and regulatory environments different from the institutional policies the administrators are required to comply with. This becomes especially critical for learning analytics data administration.

Considering that EdTech is the industry producing "commercially available digital technologies used by teachers and learners" (Mirrlees 2019: 2), educational technology developers and service providers represent a new type of stakeholders involved in the learning process. This group of stakeholders has significant control over the

design and functioning of the EdTech systems. In most cases, they also have access to the user data or metadata collection and analysis. When educational institutions rely on cloud solutions (SaaS, PaaS technologies) they become a part of larger network infrastructure of commercial or governmental companies and sources of the data. There is an ongoing public discussion on the issue that "promising cost savings and productivity efficiency, EdTech companies offer educators big data analysis by collecting and providing access to student information" (Rhoades 2020: 446) without proper ethical constraints.

EdTech developers often announce a particular *educational philosophy or learning theory* (e.g. behaviourist, cognitivist, constructivist) behind their product, especially when it comes to positioning on the educational market. They can utilize popular concepts in order to construct a desirable image for the target audience and tie the technology to social values. For instance, open-source software and openly licensed resources are often described as bringing *freedom* and *equal access* to their users, and thus *democratizing education*. Companies that develop and distribute tools for corporate training and assessment often emphasize the ideas of *control*, *tracking*, *efficiency* (including *cost efficiency* and *speed*), and *security*. Large-scale governmental projects can be promoted with the concepts of *unification*, *standardization*, and *quality assurance*, as well as *innovation*, *development*. International initiatives come with the ideas of *collaboration* and *connectedness* (Horvath et al. 2015).

Hence, we argue that the EdTech systems and solutions can be considered and classified according to the ideology they bring to the learning process.

Educational Ideologies and Technology

Ideologies have been studied from various perspectives for more than two hundred years. Though there are numerous definitions of this term, *ideology* generally represents "a set of beliefs which (i) per-

tains to abstract features of social life and (ii) is used for explaining and justifying means and ends of the collective action by (iii) some group of people" (Konarzewski 1998: 260).

Educational ideology can be broadly seen as "a set of assumptions regarding education" (Fiala 2007: 19). More specifically Le Van Canh defines *educational ideology* as a "shared body of principles and beliefs concerning the nature of knowledge, the nature of teaching and learning — including cultural assumptions about the roles of teachers and learners — and the purpose of education" (Van Canh 2004). He also stresses that the means and models of teaching rely on the ways these ideologies are implemented in a particular educational setting.

Lisa Murphy, Emmanuel Mufi and Derek Kassem define *educational ideology* as "a broad set of beliefs and opinions about the purpose and function of education and its formal arrangements, and/or about how they ought to be, held by the individual and by groups of individuals" (Murphy, Mufti & Kassem 2009: 28). They claim that educational ideologies can often be contradictory and complicated to categorize (Murphy, Mufti & Kassem 2009: 26).

All these definitions include collective *assumptions, beliefs*, and imply a shared view on how learning and teaching occur. We define *educational ideology* as a complex conceptual system that regulates epistemic, ethical, and political aspects of education through conventional social practices.

Educational ideology can be considered from both theoretical and applied perspectives. As a theoretical concept, it is "classified according to philosophical criteria" (Konarzewski 1998: 261) corresponding to particular intellectual tradition. The applied approach implies "acceptance of the structural solution" reflected in the "adjustment between education and economy" (Heintz 1965: 26). We presume that educational ideology is the basis for the ethical framework justifying choices

for policy-making in the educational context.

One of the most well-grounded taxonomies of educational ideologies was introduced by William F. O'Neil (O'Neil 1981), who divided them into conservative (fundamentalism, intellectualism, conservatism) and liberal (liberalism, libertarianism, anarchism). Though O'Neill did not attribute particular forms of instruction to the ideologies and even warned against such classification (O'Neil 1981: XVII), we can find alternatives to this approach. Ziv Lamm writes in 1986: "On the pedagogical level, decisions about the methods of educational activity (such as authoritarianism versus permissiveness, separate versus co-education of the sexes, etc.) are all ideological - dependent" (Lamm 1986).

The borderlines between *ideological* and *non-ideological* are often hard to draw because educational practices are difficult to separate from other social practices implying formal and non-formal learning. Similarly, it may be unclear when political ideology becomes educational ideology and vice versa. Education has significant potential for disseminating ideological values and political practices in the classroom and beyond, even when it claims to be apolitical. Therefore, it is often recognized as a high priority of national, regional, and local regulations. However, some instructional practices may intrinsically bear educational philosophies and ethics that are opposite to the officially declared principles.

When it comes to educational technology, its relation to the ideology can be recognized as inherent. As George Siemens, one of the founders of the connectivist learning theory said in 2016 when EdTech was already a major trend: "Our technology is our ideology" (McNeal 2016). On a very broad scale, educational technologies can become incarnated as ideological tools continuously shaping learning, teaching and management of the educational process within an organization (e.g. school, university), industry (corporate training and professional certification) or the educational system of a region, country, or even internationally.

In 2006 Kiraz and Ozdemir conducted research based on O'Neil's taxonomy to figure out the degree of acceptance of technology in education in relation to the educational ideology. The proposed classification ranges from the least accepting among those who fall into the category of educational fundamentalism, liberalism, and educational anarchism to the most accepting among those of intellectualism, conservatism, and libertarianism (Kiraz & Ozdemir 2006: 154). This drives us to the dichotomy: technopositivist educational ideologies versus technoscepticism (Njenga 2010) as an important ground for the classification of educational ideologies.

Therefore, the development of technically empowered educational practices raises the issue of educational ideology to a new level. When we are moving towards the *learning society* by employing the internationally recognized paradigm of *lifelong learning* (Edwards 1997: 183-185) the voice of educational ideologies introduced and disseminated through EdTech becomes ubiquitous, influencing other aspects of life. That is why presumably it is necessary to define which technical solutions tend to represent particular educational ideologies.

Our hypothesis states that while an educational technology can appear, be developed and promoted inside the liberal part of the spectrum of educational ideologies, serving their needs both on conceptual and on applied levels, the same technology has a very strong tendency to move towards a less liberal ideology when implemented throughout the educational system. In order to analyse educational technologies in terms of their relations to educational ideologies, we intend to employ a dichotomy of the extremes from educational anarchism to educational totalitarianism.

EdTech and Educational Anarchism

The philosophical literature on educational anarchism is quite rich: from Leo Tolstoy's *liberal education* (Tolstoy 1989) and Ivan Illich's

Deschooling Society with his claim that "we must disestablish school" (Illich 1971: 1) to contemporary educational blogs and channels celebrating the diversity of learning theories, educational practices, and technologies. It was not our goal to provide an extensive literature review on the topic, but even a brief plunge into the texts representing the phenomenon gives the impression of a highly fragmented anarchist theoretical agenda as well as countless cases that range from deinstitutionalization of learning to designing and creating *open* and *free* instructional practices, individualized curricula and instructional methods inside the existing traditional and hierarchical educational settings.

The meaning of educational anarchism can be very broad, such as "a 'just do it' approach to education" (Beaulier 2010: 29). However, it can also be shaped conceptually with clear and narrow characteristics. According to Eugene Matusov, contemporary educational anarchism is based on several overriding principles such as dialogue, self-organization, students' right to control their learning, critical approach to ideas (including education), respect for non-cooperation and student agency (Matusov 2015).

With regard to EdTech, the anarchist educational ideology is closely related to the concepts of *edupunk* (Miller 2018: 4) and *connectivist learning* (Connectivism pedagogy 2017) and rooted in epistemological anarchism. Formal education rarely relies on these concepts at the institutional level and in policy-making. However, educators who design and test frontier practices, conduct experiments, implement elements of this ideology often without getting into deep philosophical analysis and conceptual evaluation. EdTech start-ups producing learner-centred technologies, the range of informal and non-formal educational initiatives and communities, and the growing domain of *edutainment* content rely on this approach, for example, some EdTech start-ups aimed at peer learning.

Signs of educational anarchism in EdTech can be traced in the

practices and tools which empower the learner and protect the learner's control over the content and learning activities, as well as over the definition of one's educational goals. It maximizes the learner's agency. The technology serves merely as a means that facilitates implementing the learner's free will.

What EdTech solutions move learning toward the educational anarchist ideological domain? Building personal learning networks, participating in self-organized cross-platform communities of learners and teachers, involvement in the practices of creating and utilization of open knowledge bases and other crowdsourced educational resources, wiki-based and torrent-based content sharing, DIY approach, open and free (non-proprietary) solutions, peer assessment and self-assessment, flexibility or lack of standardization represent the 'anarchist' domain of EdTech.

The ability to freely and openly access educational resources, including the content, the individuals and groups, technologies, and acquire knowledge and skills via a variety of practices, and having control over one's own individual learning path justifies this type of learning. But this significant individual agency comes with the limitations of the anarchist ideology. Modern EdTech is influenced by the trend of marketization and the demand for organizational functions of educational technologies. Anarchist educational ideology is hardly acceptable for complex hierarchical structures such as national educational systems or large corporate bodies.

The biggest obstacles to anarchist learning are the decline of network neutrality, segmentation of the internet, lack of platform independence, and domination of server-centric architecture of EdTech solutions. This causes the learner to lose control over personal data and limits the ability of non-participation and anonymity. The trends in EdTech starting with the second decade of the 21st century are leading the technology away from educational anarchism.

EdTech and Educational Totalitarianism

Educational totalitarianism is supposed to be an extreme opposition to educational anarchism. Although O'Neill does not use the term *educational totalitarianism* to distinguish a separate educational ideology in his taxonomy, he mentions *totalitarianism* as the form of "absolute state control over virtually all significant forms of individual behavior" (O'Neill 1981: 131). We suggest adding the concept of educational totalitarianism to the classification regarding the types of educational technology used as the means of such control. The reason for the addition of such an extreme form of educational ideology to the existing classification is the growing power and dominance of technology that has the potential to transform educational institutions on the *conservative* side of the ideological spectrum into the dystopian techno-social systems of behaviour modification and control.

O'Neill uses the term *fundamentalism* to characterize the opposition to educational anarchism (O'Neill 1981). However, any other ideology can be viewed as anti-anarchist to a certain extent because all of them project the interests of stakeholders with their political powers and support limitations of learner's choices. That is why we argue that there is a need for introducing *educational totalitarianism* that would be the extreme point of the ideological spectrum opposite to educational anarchism. This concept emphasizes the highest level of power to limit learner's agency, monitor and influence the educational path and control multiple aspects of learning behaviour and communication throughout the educational process and beyond.

To our knowledge, there is no commonly shared definition of *educational totalitarianism* in the research literature. But there is a concept of *totalitarian education* introduced by Thomas Woody in 1940. He specifies common principles for the totalitarian education including aristocracy, or timocracy (vs "natural right"); anti-pluralism; anti-rationalism; collectivism; activism (Woody 1940: 44-50). We consider

these principles applicable to the ideology of *educational totalitarianism.*

There is a strong opinion in the philosophical literature that the concept of totalitarianism is closely related to technology. For instance, Herbert Marcuse states that "technology serves to institute new, more effective, and more pleasant forms of social control and social cohesion" to the point where there is no more neutrality of technology and a "society is a system of domination which operates already in the concept and construction of techniques" (Marcuse 2013).

The critical approach has already indicated the tendency of technology to dominate the reproduction of social relations, with education being the most ubiquitous and systemic institutionalized form. James M. Van Der Laan wrote in "Education, Technology and Totalitarianism" that "technology has always equated with the exercise of power, specifically power over the natural world as well as power over human beings" (Van Der Laan 1997: 237).

We argue that the major factor that characterizes educational totalitarianism is the amount of control over learners and subsequently over other types of stakeholders leading to the limitation of their choices and resulting in extreme forms of objectivation. The more choices and behaviours are defined by the architecture of the systems, the closer this practice is to educational totalitarianism.

Signs of educational totalitarianism in EdTech are becoming visible when teacher's functions are shifted to the authoritative classroom management model and reinforced with the help of classroom management software or even hardware for proctoring. Such technologies can automate control of environments and groups of learners, provide the tools for reinforcement and punishment, and turn the classroom and other educational settings into an educational version of Jeremy Bentham's panopticon. With distance and blended educational solutions, the visibility of the authoritarian model can be less obvious, but

in the long run, they provide an even more advanced behaviour modification expanding the controlled learning environment.

More advanced and systemic forms of educational totalitarianism evolve on the level of organizational and state EdTech solutions when technology leaves the purely educational domain and becomes the means of administrative control. Such technology grants specific privileges to those who are not directly involved in learning and teaching, giving them the advantage of silent and anonymous (from the lower levels in the hierarchy point of view) monitoring and decision making.

Some elements of control that have the potential to become excessive can be found in state or corporate educational and EdTech standards, as well as in state or corporate educational institutions which transform their routines so that they meet the holistic vision of the digital environment: platform-based and platform-dependent content, proprietary software, hardware and protocols, strict security policies, tracking user activities, and hierarchical access to educational and personal data.

One more sign is either tracking or limitation of informal communications and uncontrolled social interactions in the educational environment.

The most extreme forms evolve with the utilization of imposed technologies. They are characterized by depriving the learners of control over their own data and assigning the learners a low position in the hierarchy of the EdTech system, while granting access to other more privileged groups of users, most of whom are not directly involved in educational interaction and communication. Such technologies as user tracking and excessive data collection (especially over prolonged time periods and involving biometric data), user behaviour analysis and prediction, user retention, various forms of proctoring, can be easily utilized for the purpose of social ranking within an organization,

community, or state.

This risk is increasing with the introduction of lifelong learning based on assessment systems. Gerhart Fisher argues that "lifelong learning is more than adult education and/or training — it is a mindset and a habit for people to acquire" (Fisher 2000: 3). This specific mindset may be quite open to EdTech's presence throughout one's lifetime. If the involvement in EdTech practices starts at an early age, it promotes the learner's tolerance to continuous personal data collection and processing as a regular part of life.

Although lifelong learning can be applied within any educational ideology it may tend to favour continuous monitoring, insistent content suggestions and learner's choice limitations based on previous data analysis. To become an effective tool for human resource management, lifelong learning relies on the thorough tracking of the learner's path throughout the years. We argue that these features may reinforce the trend of educational totalitarianism.

The presence of these elements does not necessarily make education totalitarian, but they may increase the chances of moving in the direction of educational totalitarianism with every new iteration of the system. When combined they can create a dystopian picture of inhumane training by means of the machine, where learners are exploited and controlled for the good of the sociotechnical system.

In our opinion, the major factors defining whether a technology shifts from a more liberal to a more oppressive one is its mandatory use, the control over the collected data and metadata by the more powerful stakeholders, as well as the policies and technical capabilities of the data lifecycle. These factors become crucial when applied to large audiences and become a long-term systemic process. The most extreme danger of totalitarization derives from the combination of mandatory lifelong learning and a forced, uncontested technopositivist approach.

Conclusion

Educational technology of the 2020s reflects the continuum of educational ideologies ranging from educational anarchism to the most extreme educational totalitarianism. EdTech is bringing new mechanisms of learners' involvement and control. Educational ideologies behind the architecture of EdTech applications, services, and platforms, as well as the corresponding policies, need to be continuously questioned. All types of stakeholders related to EdTech should be aware of the necessity of keeping the balance of benefits and risks, and especially of the ultimate risk of transformation into the totalitarian system where individuals are divided into categories on the ground of evaluation of their previous learning experiences with less room for unrecorded trial and error.

Access to the educational data can be justified by the benefits for learning experience and in many cases it is essential for the efficient functioning and development of EdTech. However, when technology is becoming increasingly advanced and ubiquitous, comprising unconventional aspects, EdTech leaves the purely educational domain and becomes a universal yet ambivalent social and political instrument.

Educational ideologies can be applied as a framework for evaluation of EdTech tools and systems in order to explore and prevent unethical practices. We suggest that EdTech should be continuously assessed and reviewed with respect to its benefits and risks for different types of stakeholders. We also argue that it is necessary to broaden the public discussion and critical analysis of educational technologies in relation to their scale and potential for socio-political influence.

... и все идет по плану.
... and everything is going according to the plan.
Yegor Letov, 1988
(Soviet / Russian punk rock poet)

References:

Amory, Alan (2007), "It's Not About the Tool, It's About the Ideology". *South African Journal of Higher Education* 21 (1): 655-671.

Association for Educational Communications and Technology (1977), *The Definition of Educational Technology*. Washington, D.C.: Association for Educational Communications and Technology.

Association for Educational Communications and Technology (2008), *The Definition of Educational Technology*. Washington, D.C.: Association for Educational Communications and Technology.

Beaulier, Scott A. (2010), "Assume Anarchy: The Educational Philosophy of Peter Boettke". *Journal of Private Enterprise* 26 (1): 27.

Chew, Sie Wai, I-Ling Cheng, Kinshuk & Nian-Shing Chen (2018), "Exploring Challenges Faced by Different Stakeholders While Implementing Educational Technology in Classrooms Through Expert Interviews". *Journal of Computers in Education* 5 (2): 175-197.

"Connectivism Pedagogy" (2017), *Digital Learning and Teaching*. Available at: https://community.dur.ac.uk/lt.team/?portfolio=connectivism (accessed 12. 11. 2020).

Edwards, Richard (1997), *Changing Places?: Flexibility, Lifelong Learning, and a Learning Society*. London: Routledge.

Dede, Chris (2011), "Emerging Technologies, Ubiquitous Learning, and Educational Transformation, in: *European Conference on Technology Enhanced Learning*. Berlin, Heidelberg: Springer, pp. 1-8.

Fiala, Robert (2007), "Educational Ideology and the School Curriculum", in: *School Knowledge in Comparative and Historical Perspective*. Dordrecht: Springer, pp. 15-34.

Fischer, Gerhard (2000), "Lifelong Learning – More than Training". *Journal of Interactive Learning Research* 11 (3): 265-294.

Haase, Michaela & Emmanuel Raufflet (2017), "Ideologies in Markets, Organizations, and Business Ethics: Drafting a Map". Introduction to the Special Issue of *Journal of Business Ethics* 142 (4): 629-639.

Heintz, Peter (1965), "A Study on Educational Ideology". *Social and Economic Studies* 14 (1): 21-34.

Illich, Ivan (1971), *Deschooling society*.

Available at: https://globalintelhub.com/wp-content/uploads/2013/07/DeschoolingSociety.pdf (accessed 10.12.2014.).

Kiraz, Ercan & Devrim Ozdemir (2006), "The Relationship Between Educational Ideologies and Technology Acceptance in Pre-Service Teachers". *Journal of Educational Technology & Society* 9 (2): 152-165.

Konarzewski, Krzysztof (1998), "Educational Ideologies of Polish Teachers"., *Teachers and teaching* 4 (2): 259-271.

Kulik, James A. & J. D. Fletcher (2016), "Effectiveness of Intelligent Tutoring Systems: A Meta-analytic Review". *Review of Educational Research* 86 (1): 42-78.

Lamm, Zvi (1986), "Ideologies and Educational Thought". *Psychology and Counselling in Education*: 1-39. Available at: http://zvilamm-archive.org/articles/ideologies_educational_thought.pdf (accessed 11.12.2017.)

Le Van Canh, M.A. (2004), "From Ideology to Inquiry: Mediating Asian and Western Values in ELT Practice". *The Journal of AsiaTEFL* 1 (1): 167-183.

Marcuse, Herbert (2013), *One-dimensional Man: Studies in the Ideology of Advanced Industrial Society*. New York: Routledge.

Maseleno, Andino, Noraisikin Sabani, Miftachul Huda, Roslee Ahmad, Kamarul Asmi Jasmi & Bushrah Basiron (2018), "Demystifying Learning Analytics in Personalised Learning". *International Journal of Engineering & Technology* 7 (3): 1124-1129.

Matusov, Eugene (2015), "Legitimacy of Non-negotiable Imposition in Diverse Approaches to Education". *Dialogic Pedagogy: An International Online Journal* 3: v3 pA174-A211

McNeal, Marguerite (2016), "'Our Technology Is Our Ideology': George Siemens on the Future of Digital Learning", *EdSurge*. Available at: https://www.edsurge.com/news/2016-08-11-our-technology-is-our-ideology-george-siemens-on-the-future-of-digital-learning (accessed 14.10.2017.).

Miller, Jamison (2018), "From EDUPUNK to Open Policy: Critical Technology Praxis within Higher Education", *The Professional Geographer* 70 (1): 165-173.

Mirrlees, Tanner & Alvi, Shahid (2019), *EdTech Inc.: Selling, Automating and Globalizing Higher Education in the Digital Age*, New York: Routledge.

Murphy, Lisa, Emmanuel Mufti & Derek Kassem (2009), *Education Studies: An Introduction: An Introduction.* Maidenhead, England – New York: Open University Press.

O'Neill, William F. (1981), *Educational Ideologies: Contemporary Expressions of Educational Philosophy.* Santa Monica, CA: Goodyear.

Njenga, James Kariuki & Louis Cyril Henry Fourie (2010), "The Myths about E-learning in Higher Education". *British Journal of Educational Technology* 41 (2): 199-212.

Regan, Priscilla M. & Jolene Jesse (2019), "Ethical Challenges of EdTech, Big Data and Personalized Learning: Twenty-first Century Student Sorting and Tracking". *Ethics and Information Technology* 21 (3): 167-179.

Rhoades, Amy (2020), "Big Tech Makes Big Data out of Your Child: The FERPA Loophole EdTech Exploits to Monetize Student Data". *American University Business Law Review* 9: 445-474.

Slade, Sharon & Paul Prinsloo (2013), "Learning Analytics: Ethical Issues and Dilemmas". *American Behavioral Scientist* 57 (10): 1510-1529.

Spector, J. Michael (2015), *Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives.* New York: Routledge.

Tolstoy Leo (1989), *Works on Pedagogy: Collection of Scholarly Works.* Moscow: Pedagogika. / Толстой, Лев Николаевич (1989), Педагогические сочинения, Москва: Педагогика.

Whitmer, John, Kathy Fernandes & William Allen (2012), "Analytics in Progress: Technology Use, Student Characteristics, and Student Achievement", *EDUCAUSE Review Online* 7. Available at: https://er.educause.edu/articles/2012/8/analytics-in-progress-technology-use-student-characteristics-and-student-achievement (accessed 26.11.2019.)

Woody, Thomas (1940), "Principles of Totalitarian Education". *Proceedings of the American Philosophical Society* 82 (1): 39-55. Available at: https://www.jstor.org/stable/984903 (accessed 31.10.2017.)

Van Der Laan, James M. (1997), "Education, Technology and Totalitarianism". *Bulletin of Science, Technology & Society* 17 (5-6): 236-248.