Articles

Classroom as a playground

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Abstract

In the last sixty years the literacy environment based on alphabetic technology has almost completely transcended into the electronic environment based on digital technology. The traditional literacy-based classrooms and school libraries as centres of knowledge and education may have still retained their physical existence but have lost their foundation and purpose. The changes brought about by the digital environment have forced the traditional classroom and its literate environment emphasizing the importance of speaking, reading and writing to search for new meaning. While most educators are still clutching to the straw of the traditional literacy-based classroom by inventing more and more amusing presentations, the signs of traditional classroom's crisis are more and more visible. The physical classroom has competed and has lost to virtual reality which is instantaneous, transferable and imminently involving, the traditional school with textbooks seems to be a museum relic to contemporary "digital natives". The contemporary research among university students confirms the notion that modern curricula should offer a vision of a school which is not a centre of obsolete knowledge distribution but a playground where the students learn the rules of the games that will be played in the 21st century.

Key words: Literacy-based classroom, digital environment, tradition, transition, socialization.

Třída jako hřiště

Abstrakt

Za posledních šedesát roků se prostředí gramotnosti založené na technologii abecedy změnilo na prostředí založené na technologiích digitálních. Tradiční škola opírající se o literární gramotnost a užívající učebnici, která byla zdrojem vědomostí a vzdělávání, se možná ještě udržuje jako instituce, ale ztratila svou původní podstatu a účel. Změny vyvolané digitálním prostředím donutily tradiční výuku, která zdůrazňovala význam čtení a psaní, aby hledala svůj nový smysl. Zatímco se většina učitelů snaží zachovat tradiční pojetí výuky tím, že tvoří atraktivní prezentace, signály krize jsou stále zřetelnější. Je patrné, že škola prohrává boj s virtuální realitou, která je okamžitá, přenositelná a bezprostředně motivující. Tradiční škola s učebnicemi připadá dnešním žákům zcela přirozeně fungujícím v digitálním prostředí jako muzejní objekt. Současný výzkum mezi univerzitními studenty potvrzuje názor, že moderní studijní programy učitelství by měly nabízet vizi školy, která není centrem distribuce zastaralého pojetí gramotností, ale hřištěm, kde se žáci a studenti učí pravidla her, podle kterých se hraje ve 21. století.

Klíčová slova: literární gramotnost, škola, digitální prostředí, tradice, změna, socializace.

Transforming education

In the last sixty years the literacy environment based on alphabetic technology has almost completely transcended into the electronic environment based on digital technology. Traditional education based on printed linear text has been significantly affected by the change. The traditional literacy-based classrooms and school libraries as centres of knowledge and education may have still retained their physical existence but have lost their foundation, their purpose. The rapporteurs at the Global Education Industry Summit in Helsinki noted that "the range of knowledge and skills students need for a global, knowledge-based, innovation centred economy is greater than can be taught in even the best classrooms during the school day." (Notes from Rapporteurs, 2015, p. 3) The traditional school has become only one of numerous sets of environments providing learning. The electronic environment has changed the access to education and in near future "class rooms and schools may look very different from what we are used to seeing. Methods of teaching may seem strange compared to those of the past." (Notes, p. 8)

While the traditional classroom and school library are slowly vanishing, the importance and demand for education and the importance of teachers are growing. McLuhan

noted in Gutenberg Galaxy that "higher education which had been a privilege and a luxury has now become a necessity for production and survival in digital environment." (McLuhan, 1965, p. 105). Classrooms and libraries are changing from physical objects to virtual ones, but artificial intelligence will not be able to replace teachers. According to Kai-Fu Lee, teaching will be one of ten jobs that are safe in the future world. Lee´s pedagogical optimism views digital environment and artificial intelligence as a potential pedagogical tool that "will help educators figure out how to personalize curriculum based on each student's competence, progress, aptitude, and temperament" (Lee, 2018). In this respect, he is in agreement with the Global Education Industry Summit in Helsinki in 2015 confirming that we are entering an unprecedented era of learning. One thing is, however, likely to remain: learning takes place in a fruitful interaction between a teacher and a student in a structured environment (Notes, p. 8). Lee accents the irreplaceable role of the teacher who will be needed to help students figure out their interests, teach students to learn independently, and provide one-on-one mentorship. "These are tasks that can only be done by a human teacher. As such, there will still be a great need for human educators in the future" concludes Lee (2018).

1 Transition of the literacy to the digital environment

The changes brought about by the digital environment have forced the traditional classroom and its literate environment emphasizing the importance of speaking, reading and writing to search for new meaning. The transition to digital environment with the ensuing change of the perception adjusting to fragmented digital screens and virtual reality is not uncomplicated and educators are aware of it when noting that "It is an era of new opportunities but it is also an era of a great disruption (Notes, p. 8)". The evident negative effects of the transition on education are discussed below in the chapter on the relationship between Internet addiction and school. However, a larger issue has been noted by The Summit in Helsinki participants, stressing that "discussion on the digital revolution has tended to concentrate around presentation, rather than access to information" (Notes, p. 7). The recent pedagogies dependence on presentation is implicitly confirmed by the attempts to combine the literacy and digital environments by flipped, hybrid and blended learning models. Even the methods of feedback follow the trend of presentation by attempting to adapt themselves to the changing environment, reversing the traditional learning from students to the teacher, which is stretching a point. (Rodgers, 2006). Even though Rodgers moves from constructivist pedagogy to utilitarian pedagogy refusing an approach based on evaluation and testing, she is still concerned with presentation. But the rapporteurs at the Summit in Helsinki noted that "in the longer term, the revolution in access to information is likely to have a greater impact than the changes in the presentation" (Notes, p. 7).

To survive, the classroom has been searching for new identity. The recent technologically centrally-controlled classroom, in contrast to the traditional classroom centrally controlled by the teacher and textbooks, is defined by the number of screens, projectors, speakers and their mutual arrangement. Such a classroom has all the functions of a smartphone with a possible advantage that the classroom technologies can collect data about learning. However, when the students were asked to compare the merits of new technology-driven classrooms they did not comment on technology but mentioned "the amount of space around them, outlets, suitability of desks and seating" (Chappel, 2018).

The discussions above remain in the domain of presentation, while the important changes happen in the access to information. So far, the issues of the classroom have seemed to be less concerned with new technology than with the physical space allowing for social interaction, c.f. if learning is to be "active, participatory, experiential and cooperative (it) requires a flexible space… Student satisfaction with the room … was influenced by the room's ability to facilitate working with others" (Stern, 2008, p. 6). However, the argument that students do not any longer need the classroom and teacher to access information is of considerable importance and it is not going away.

The issue of the fact presentation against the access to information is complicated because it includes the problems of the selection of facts appropriate for teaching, facing at the same time the competition of mindless consumption of the information potentially provided by the Internet. The speakers at Helsinki Summit do not often strictly differentiate between the presentation and access and contradict each other when reverting back to presentation; "Digital technologies increase access to education and opportunities to learn, but technology is not a magic wand, we need to think about other factors including access to technology and connectivity; social attitudes to learning; legal issues associated with use; skills and competences of learners and teachers; business and financial models." (Notes, p. 5) In some instances, they have refused the priority of access stating that "Availability and access to content itself will not transform education, although it can be a foundation for a good education. We should transform ways in which educators and learners make use of content; where appropriate we should move static content and traditional resources like textbooks; and towards new, more engaging materials that encourage curiosity, exploration, engagement and learning" (Notes, p. 5). It would not be possible to disagree with these time-tested truths including the obsoleteness of the non-interactive textbooks and alphabetic technology of linear-printed texts but the rapporteurs are still trying to save the presentation-driven and literacy-based classroom which have suddenly become very small fish in the digital seas.

2 Internet addiction and school burnout

While most educators are still clutching to the straw of the traditional literacy-based classroom by inventing more and more amusing presentations and even, in obvious desperation, suggesting that "we can learn a lot from how students engage with new technologies and pedagogies. In the digital gaming industry, there is a philosophy of 'Player First', giving players an embedded role in product development – maybe a 'Student First' approach to developing pedagogies could also be adopted" (Notes, p. 8), the signs of traditional classroom's crisis are more and more visible.

As early as in 2007 a study aimed at exploring relationships among Internet addiction, smoking, and drinking in South Korea proved that one-fifth of the total participants were at the mild or moderate stage of Internet addiction. "Internet addiction positively correlated with depression, novelty seeking, harm avoidance and reward dependence, the Internet users however did not develop the skills of persistence, self-directness, or cooperativeness" (June, 2007).

Ten years later, in 2017, a Finnish analysis showed that in spite of the attempts to revive the literacy-based classroom the traditional school had developed serious problems like burnout and education-related cynicism in the environment of digital technology.

The Finnish research suggests that the most critical stage for the detected school burnout is age 13–15 implying a relationship between the burnout and digital addiction. The researchers suggested that the most effective way of supporting adolescents' mental health and preventing excessive Internet use and school burnout was to promote school engagement and build up students' motivation to learn. While boys were found to be more dependent on the Internet, depressive symptoms and school burnout in late adolescence were more common among girls. More than 3,000 Helsinki adolescents from 33 lower schools and 18 upper secondary schools took part in the research. (Salmela-Aro, K., Upadyaya, K., Hakkarainen, K. et al., 2017)

The study quotes an earlier research documenting that the internet provides important and pleasurable social experiences that are useful in later studies and eventually in the workplace, this initial digital optimism has been proved wrong since. The researchers hope that "pedagogical use of digital technology can also engage and inspire young people to take an interest in science and technology" however adding that "on the other hand, digital addiction can also cause burnout in adolescents and even lead to depression" (Salmela-Aro, 2017). Today's young people are described in the research as digital natives, as the first generation who have grown up with mobile devices and social media.

In this description lies the crust of the problem, the solutions by Salmela-Aro and others (Salmela-Aro, 2017) regarding the "pedagogical use of digital technology" would have been relevant in the previous literacy environment relying on attractive

and well thought out presentation of the content, and with no competition from the instantaneously accessed and highly involving "education" provided by social media in the digital environment. The young people involved in the research are native in this environment and unaware of the previous one. Suggesting that the teacher should make now pedagogical use of digital technology, presumably for presentations, is like ignoring the power and efficiency of a dragnet and insisting on fishing with the newest sophisticated model of a fishing rod. And expecting the same results, instead of refusal and frustration.

A similar topic has been recently discussed by Milková and Ambrožová (2018) in the study on Internet use and abuse dealing with "issues of selected types of Internet risk behaviour in the context of using the Internet as an educational aid" among secondary school students. According to the study, the behaviour of Czech students is not different from other users of digital media which has been confirmed by both the Korean study from 2007 (June) and the results of Global Education Industry Summit in Helsinki, Finland in 2015 (Notes). The Czech study echoes the results stressing the differences between male and female students. Czech male students have both "the higher addiction to the Internet and the higher tendency to the Internet abuse". There is an inverse proportion between the school evaluation and the Internet abuse. The worse is the evaluation the higher is the Internet abuse. Milková and Ambrožová note that the Internet helps male students overcome the pitfalls of face-to-face interaction with female students, saying that "the Internet in communication (with all its features – such as anonymity) effectively reduces young men's anxieties." It would be worth investigating the opinion of adolescent females in this respect. They note that the easy access to digital information leads, according to the study, to a significantly higher tendency to cheating and plagiarism, mainly among male students.

This Czech study from 2018 suggests that "it is high time to focus on effective prevention of the above-described types of risk behaviours on the Internet that adolescents encounter in the educational process. Primary prevention should be addressed to both parents of adolescents as well as schools and school facilities". Similarly, the older Korean analysis from 2007 stressed the necessity of developing and implementing effective intervention programs in order to prevent adolescents from experiencing Internet addiction and health risk behaviours. The problem is that both studies perceive the Internet and social media as extrinsic phenomena, an influence from outside world, but as it is accented above, "today's young people are described in the research as the first generation who have grown up with mobile devices and social media". How can prevention and intervention against the Internet be effective when the only environment today's young people know is the digital environment? As we suggested before "new media synonymous were changing the perception of young students from visual to auditory impacting their cognitive abilities and consequently, the ways they learn". (Práger & Řeřicha, 2018, p. 127)

The studies above have been dealing with the effects of the Internet on adolescents' behaviour and their school evaluation. The cognitive changes resulting from the shift of perception from linear printed text to the interactive screens, from alphabetical to digital technologies, obviously impact the way how "digital natives" learn, i.e. receive information. A change in the reception of information changes the whole culture. The digital environment has created the today's culture, and, with few exceptions, the fact has been ignored, or insufficiently recognized, by the studies above. They view the present-day digital environment from the viewpoint of the previous literacy environment and their proposals ignore the reality.

The traditional school providing education has become a part of the digital environment which does not differentiate between information, education and, possibly, entertainment. The physical classroom has competed and has lost to virtual reality which is instantaneous, transferable and imminently involving. The traditional school with textbooks must seem to digital natives to be a museum relic. The digital technology, brought to the classroom as a bribe to the students or a concession to the digital environment, cannot compete with their readily available smartphones. Attempts to create a limited digital technology in the classroom surrounded by the unlimited digital world is absurd anyway.

3 Escaping the traditional classroom

The highly worrying issue are the consequences of the perception of the diminishing role of the school by adolescent students. Práger and Řeřicha (2018) analysed an interactive survey produced by France Télévision (Generation What, 2017). This independent survey with over thirty six thousand respondents between 15 and 34 years of age from the Czech Republic describe the consequences of the recent baffled behaviour of the Czech educational system; according to this survey, "more than fifty per cent of young Czechs belonging to the generation of Millennials distrust Czech schools, while more than seventy per cent of them do not agree that these schools prepare them adequately for the job market and seventy-five per cent of them do not agree that the Czech educational system rewards merit" (Práger & Řeřicha, p. 129)

When we take the "Generation What?" survey results even further and compare the Czech respondents with young participants from other European Union countries (Table 1), the figures will show, with a few exceptions, similar situation in other educational systems.

Chart 1
The number of respondents to the "Generation What?" survey

Austria	Belgium	Czech Rep.	France	Germany	Ireland	Italy
> 59 000	> 40 000	> 36 000	> 209 000	> 101 000	> 21 000	> 68 000

The following Chart 3 outlines responses of young people aged 16 to 34 to questions concerning educational systems in their own countries. They were asked to respond to the questions below with options "I totally agree / I agree up to a point / I don't agree / I totally disagree. The presented charts sum up (in percentage) the negative answers, i.e. "I don't agree" and "I totally disagree", with a final question about trust in school with options Not at all/ Rather not / Rather yes / Yes, totally.

The graphical representation of the survey responses shows that in many EU countries the negative attitude to various aspects of educational systems striving to adjust, rather unsuccessfully, to the widening generation and technological gap between teachers and students, reaches dramatic levels.

Chart 2
How much do you agree with the following statements?
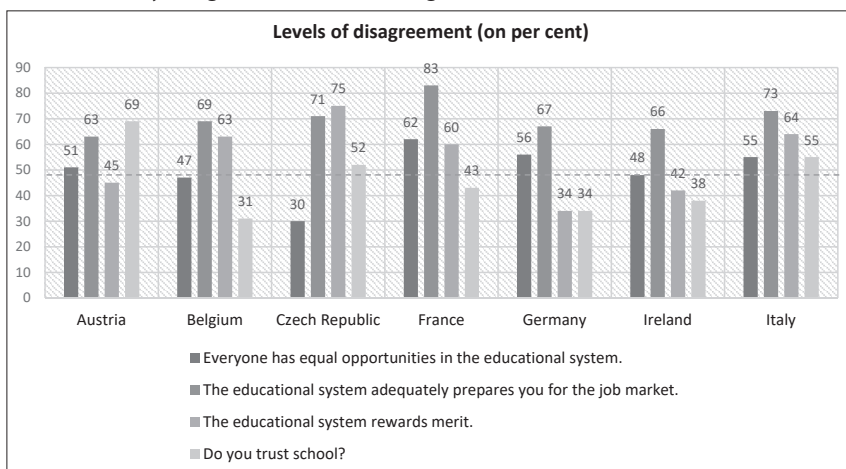
These results also seem to eerily correspond with distrust to and irrelevancy of the school that has been described by Mind the Gap, a longitudinal research project funded by the Academy of Finland (2016). Its findings show that "exposure to digital addiction is most likely to happen if the adolescent loses interest in school and feels cynicism towards school". If there is a strong evidence of students developing bias against the

traditional classroom, the attempts to modernize it are not only counterproductive, but manifestly destructive.

The distrust of traditional education has been also confirmed by a research carried out among secondary school graduates / university freshmen with regard to their experience with learning English in and out of a school classroom. The Chart no. 3 shows the lack of interest of contemporary students to participate in the traditional modes of "knowledge delivery" and presents further evidence for the need to radically change the obsolete strategies of skills and knowledge distribution.

Chart 3
Which of the following activities have contributed the most to improving your English?

Sources for improving English (in per cent)
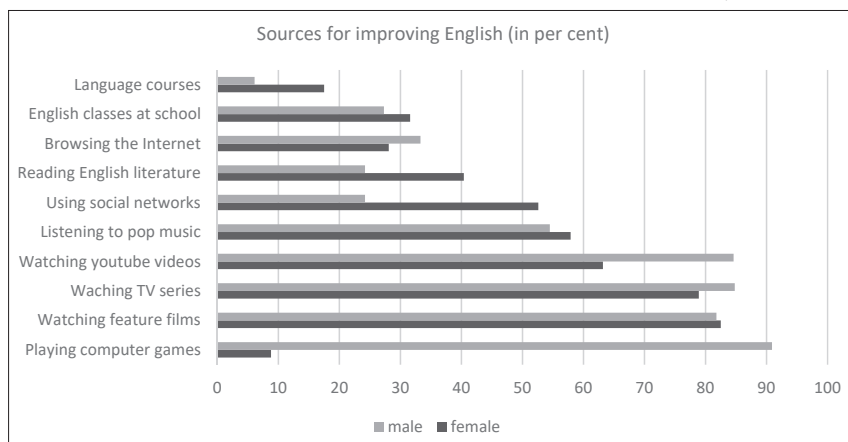
4 Changing role of the classroom – socialization and personalization

One of the conclusions of the Helsinki Summit that "simply providing technology or making people aware of an innovative practice is unlikely to change anything" (Notes, p. 1) supports our observations regarding the digital technology in the classroom. The Summit discussed the role of technology in length. It has been pointed out that "computers have fundamentally changed the nature of maths, and yet we still teach maths as if nothing has changed. How can we get education to start moving at the speed of the world beyond?" (Notes, p. 3) With mathematics being just one the examples "the fundamental question for education systems is now how to remain relevant in a world of educational alternatives" (Notes, p. 7).

There seems to be an agreement on the benefits of personalized learning. It is, obviously, implicit acknowledgement of the irrelevancy of the traditional school and a quiet return to one-room schools. The transport technology had replaced one-room schools by multiple classroom schools with classes for specific subjects and different grade levels. Now, the wearable digital technology with its instantaneously available information impacts the schools again making the multiple classroom school irrelevant and at the same time stressing the importance of these teachers who know how to transform information into education. The Helsinki Summit perceives personalized learning as a "key opportunity for technology's use in support of learning. Software can track and indicate learners' progress in relation to learning objectives, reflect their state of knowledge granular levels, and use gathered evidence to suggest an appropri-ate next step for each student." (Notes, p. 6) Similarly, Lee (2018) suggest that digital technology "will help educators figure out how to personalize curriculum based on each student's competence, progress, aptitude, and temperament."

It has been described above how the one-room schools had been abandoned be-cause transport technology made centrally-located multiple classroom schools with different grades and subjects easily accessible and how the digital technology with the possibilities of personalized learning "threatens" the existence of these centrally-located schools. After all, the traditional schools have been principally a transport issue. It is acknowledged by the rapporteurs at Helsinki Summit that a new education vision is needed: We need a vision supported by the courage to change – for example, in fun-damental areas such as how we teach subjects (Notes, p. 7).

As a short example and conclusion, we describe below how the impact of digital environment is dealt with by the Ministry of Education in Ontario, specifically in their curricula documents for lower elementary school (Ontario Ministry of Education, 2019). The curricula stress at the first place the importance of arts, not because dance, drama, music and visual arts would be the most important subjects, but as an approach to the development of necessary cognitive skills: "Since arts (dance, drama, music, visual arts) experiences offer other modes and ways of experiencing and learning, children will have opportunities to think and feel as they explore, problem solve, express, interpret, and evaluate the process and the results. To watch a child completely engaged in an arts experience is to recognize that the brain is on, driven by the aesthetic and emotional imperative to make meaning, to say something, to represent what matters" (Ontario, 2019). It may be incidental but in arts are highly involving and there is significantly less reliance on digital technology.

The subjects blend to educate a complex human being, not a worker or professional with specific skills who may be shortly replace by an artificial intelligence programme. In science and technology, the Ontario curriculum specifies that "scientifically and technologically literate person is one who can read and understand common media reports about science and technology, critically evaluate the information presented, and

confidently engage in discussions and decision-making activities that involve science and technology." The Ontario curricula offer a vision of a school where students may learn facts and memory-based skills based but the primary task is to educate critically thoughtful and informed citizens who value an inclusive society, students will have the skills they need to solve problems and communicate ideas and decisions about significant developments, events, and issues.

The classroom must be a playground where the students learn the rules of the games that will be played in the 21st century.

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