Andragoška spoznanja/Studies in Adult Education and Learning, 2022, 28(1), 3-10
DOI: https://doi.org/10.4312/as/10791

UVODNIK

IZOBRAŽEVANJE IN DIGITALNA PREOBRAZBA: VLOGA IKT V IZOBRAŽEVANJU PRIHODNOSTI

Tokratna tematska številka Andragoških spoznanj se posveča digitalizaciji izobraževanja in vključevanju sodobnih tehnologij v procese učenja. To temo smo v reviji že večkrat obravnavali – z razlogom. Uvajanje IKT v izobraževalni proces je namreč področje in proces, ki se nenehno razvija – teoretsko, pa tudi v praksi –, spoznanja pa se hitreje kot v različne strategije vpeljujejo kar v samo prakso poučevanja. »Digitalna preobrazba« je pojem, s katerim se predvsem na politični, odločevalski ravni opisujejo različni procesi in priporočila vladam glede vključevanja tehnologije v šole. V zadnjem času te procese usmerja zlasti *Akcijski načrt za digitalno izobraževanje*, ki ga pripravlja Evropska komisija (2021). V tej in podobnih strategijah je treba ločevati med procesi »digitizacije« (angl. *digitisation*), digitalizacije in pa »digitalne preobrazbe« (Schmidt in Tang, 2020). O digitizaciji govorimo takrat, ko gre za proces preoblikovanja fizičnih vidikov izobraževanja v digitalne oblike (npr. izvedba delavnic v elektronski obliki, opremljenost razredov z IKT-opremo) – v našem okolju bi jo najlažje razumeli kot informatizacijo šolstva. Digitalizacijo avtorja opredeljujeta predvsem kot prehod na digitalne procese prenosa in obdelave podatkov, digitalna preobrazba pa ima globlji in trajni vpliv na družbene in poslovne procese ter v našem kontekstu pomeni preoblikovanje sedanjih procesov izobraževanja s pomočjo digitalnih tehnologij (Schmidt in Tang, 2020). Ključni namen digitalne preobrazbe v izobraževanju torej ni le »prehod na digitalno«, temveč vključuje tudi razmislek o tem, kako s pomočjo sodobnih tehnologij izboljšati (spreminjati) procese poučevanja in učenja, narediti izobraževanje bolj inkluzivno ipd. Lahko rečemo, da ima digitalna preobrazba dosti širše cilje od same informatizacije, s tem pa je za stroko na tem področju toliko bolj pomembna, saj spreminja makro, mezzo, pa tudi mikro raven izobraževanja.

Pandemija covida-19, ki se v teh mesecih (upajmo) izteka, bo pustila sledove na mnogih področjih, močno pa bo (je) zaznamovala tudi izobraževanje. Posledice (fizičnega) izostanka iz izobraževanja, hitrega prehoda na digitalno izobraževanje, ob tem pa digitalnega razhajanja ter pomanjkljivih IKT-spretnosti in didaktični znanj za organizacijo učenja in poučevanja na spletu bomo raziskovali še mnoga leta. Različna poročila sicer kažejo, da so se določeni kazalniki digitalnega razhajanja v zadnjih letih hitro zmanjšali, drugi pa se niso spreminjali v enakem tempu. To je tudi razlog, da se nekatere države, družbene skupine ali

posamezniki niso mogli tako hitro prilagoditi zahtevam digitalne preobrazbe, ki jo je povzročila pandemija covida-19. Zadnje evalvacije, ki so jih opravili na Andragoškem centru Slovenije, kažejo, da je pandemija covida-19 pomenila hud udarec ne samo v mladinskem izobraževanju, temveč tudi za določene skupine udeležencev izobraževalnih programov za odrasle in izobraževalce odraslih (Možina, 2021). Podatki kažejo, da je pandemija najbolj vplivala na zmanjšano udeležbo, zlasti med populacijami, ki že veljajo za ranljive in se težje vključujejo v izobraževanje. Te skupine so starejši, priseljenci, brezposelni, Romi, odrasli z nižjo stopnjo izobrazbe, mlajši odrasli in tisti, ki nimajo dostopa do računalniške opreme ali pa jim primanjkuje digitalnih spretnosti (Možina, 2021). Na podobne težave, ki bodo spremljale digitalno preobrazbo, kaže tudi študija, ki so jo leta 2021 opravili na Eurostatu in ki ugotavlja, da je dostopnost interneta in računalnikov v EU sicer zelo visoka (v povprečju med 80 in 90 odstotki), vendar pa številna gospodinjstva z nizkimi dohodki nimajo dostopa do računalnikov in interneta. Analize, ki jih opravlja Eurostat, kažejo tudi na problematiko digitalnih spretnosti, ki jo bo morala vsaka reforma šolstva najprej reševati. Rezultati namreč kažejo, da ima v EU več kot petina mladih težave z osnovnimi digitalnim spretnostmi, še večji pa je ta delež v populaciji starejših (Eurostat, 2021).

Proces digitalne preobrazbe se je v času pandemije začel oz. pospešil in brez večjega tveganja lahko trdimo, da se trend v izobraževanju ne bo več obrnil nazaj ali upočasnil. Na to opozarja tudi poročilo OECD (2020) *Digital Economy Outlook 2020*, v katerem avtorji poudarjajo naraščajoč pomen digitalnih tehnologij in komunikacijskih infrastruktur ter ugotavljajo, da vlade digitalne strategije vse bolj postavljajo v središče svojih političnih agend. Kot je bilo omenjeno uvodoma, je Evropska komisija na področju digitalizacije šolstva zelo aktivna. Septembra 2020 je po javnem posvetovanju dopolnila svoj akcijski načrt za digitalno izobraževanje z namenom, da bi spodbudila proces razvoja izobraževanja in usposabljanja v digitalni dobi ter pripomogla k okrevanju izobraževanja v obdobju po pandemiji. Novi akcijski načrt Evropske komisije (2021) ima dva glavna strateška cilja: (1) spodbujanje razvoja visoko zmogljivega digitalnega izobraževalnega ekosistema – torej informatizacijo ter (2) krepitev digitalnih spretnosti in kompetenc za digitalno preobrazbo. Za izobraževalce je pomemben predvsem ta cilj, saj zadeva razvoj digitalnih spretnosti od zgodnjega otroštva naprej, digitalno opismenjevanje, razvoj medijske pismenosti ter razvoj digitalnih spretnosti učiteljev.

Ob tem je seveda treba biti pozoren na vplive, ki jih ima uvajanje tehnologije v izobraževanje. Rezultati raziskav so različni. Že leta 1986 je Larry Cuban, profesor na Univerzi Stanford, pregledal zgodovino vključevanja novih tehnologij v šolski prostor (radia, filma ter televizije) in ugotavljal, zakaj te tehnologije niso v samem temelju spremenile izobraževanja, tako kot je bilo predvideno. Cuban (1986) je ugotovil, da so, prvič, zagovorniki uvajanja novih tehnologij trdili, da je mogoče vsako tehnologijo uporabiti za učinkovitejše in uspešnejše poučevanje; drugič, te trditve so bile podprte z dvomljivimi raziskavami (ki so jih pogosto finančno podprli ravno proizvajalci tehnologij) in, tretjič, kupljena IKT- oprema se je zaradi majhnega ali celo negativnega učinka kmalu prenehala uporabljati. Kot sklene Cuban (1986), je to cikel, ki se v izobraževanju ponovi z vsako novo tehnologijo,

ki se uveljavi v družbi – začetnemu navdušenju nad nekim novim tehnološkim orodjem sledi streznitev in/ali razočaranje. Nekoliko svetlejšo prihodnost uporabi tehnologije v izobraževanju so nedavno napovedali Tamim idr. (2011). V svoji obsežni metaanalizi, ki je zaobjela raziskave zadnjih 40 let, so ugotovili, da ima uporaba računalniške tehnologije v razredu prednosti v primerjavi s poučevanjem v živo, brez tehnologije. Rezultati, ki temeljijo na vzorcu 109.700 udeležencev (iz 1.055 študij), kažejo na pozitivne učinke uporabe tehnologije, vendar s pridržkom: tehnologija ima pozitivne učinke predvsem takrat, ko se uporablja kot podpora pouku, ne pa takrat, ko je edino sredstvo učenja. To pomeni, da je uporaba tehnologije najprimernejša kot učiteljev didaktični ali učni pripomoček, ne pa kot orodje, ki bi lahko nadomestilo učitelja. Pomembno sporočilo in opozorilo v času, ko veliko strokovnjakov (predvsem s področja računalništva) stavi na moč umetne inteligence, strojnega učenja, avtomatizacije ter (strojne) individualizacije učenja.

Mogoče lahko delno rešitev oz. odgovor na te dileme ponudi poročilo Svetovne banke, v katerem so analizirali negativne in pozitivne izkušnje iz časa pandemije ter šolanja na daljavo v 17 državah (Munoz-Najar idr., 2021). V tem poročilu avtorji predlagajo konceptualni okvir, po katerem mora izobraževanja na daljavo nujno vključevati tri komplementarne elemente, da bi bilo uspešno: usposobljene učitelje, ustrezno tehnologijo in angažirane (motivirane) udeležence izobraževanja (Munoz-Najar idr., 2021). Če torej želimo, da bo izobraževanje na daljavo uspešno in sprejeto, moramo upoštevati vse tri elemente in jih skladno razvijati. To ugotovitev lahko posplošimo tudi na področje digitalne preobrazbe izobraževanja nasploh. Digitalizacija torej ne sme biti razumljena kot opremljanje izobraževalnih institucij z izobraževalno tehnologijo, temveč je to šele prvi korak, ki ga morata spremljati razvijanje ustreznih pedagoških in IKT-kompetenc učiteljev in učencev (vseh starosti) ter ustrezna uporaba te tehnologije med izobraževanjem.

V številki, ki jo berete, objavljamo pet tematskih prispevkov, v katerih avtorice in avtorji predstavljajo nekatere izzive ali novosti v tovrstnem izobraževanju. Bernhardt Schmidt-Hertha in Marius Bernhardt v svojem članku preučujeta odnos med izobraževalcem in udeležencem ter njegov vpliv na uspešno poučevanje in učenje – tako v analognih kot v digitalnih okoliščinah oz. izobraževanju na daljavo. Anetta Basca-Bán raziskuje izkušnje madžarske visokošolske skupnosti v času pandemije covida-19. V svoji analizi preučuje nekatere vidike učenja na daljavo med pandemijo ter težave in ovire, s katerimi so se učitelji in študenti soočali med izobraževanjem na daljavo. Sabina Ličen, Igor Karnjuš in Mirko Prosen predstavljajo rezultate raziskave, v kateri so evalvirali izkušnje visokošolskih učiteljev zdravstvene nege v Sloveniji, pridobljene na podlagi devettedenskega modularnega spletnega tečaja o oblikovanju, izvajanju in vrednotenju spletnih učnih enot, ki je bil pripravljen na podlagi standarda kakovosti za digitalno izobraževanje. Tudi naslednji prispevek prihaja s področja zdravstva. Metka Skubic in Tita Stanek Zidarič v njem predstavljata izvedbo pilotnega projekta s področja babištva na temo virtualne priprave na porod in starševstvo. Velik poudarek je bil namenjen evalvaciji projekta in izvedbi nastopa na način kvalitativnega raziskovanja z uporabo fokusnih skupin. Zadnji tematski članek sta prispevali Lea Bregar in Jasna Dominko Baloh. Avtorici predstavljata možnosti uporabe mikroučenja v visokošolskem izobraževanju. Prispevek v ospredje

postavlja dva vidika uporabnosti mikroučenja za visokošolsko izobraževanje, in sicer za omogočanje avtentične učne izkušnje ter za pridobivanje kompleksnejših znanj in spretnosti.

V reviji objavljamo tudi nekaj netematskih prispevkov. Corinne Brion piše o vplivu kulture na prenos učenja v Burkini Faso in Gani, Sabina Ograjšek s sodelavci pa o pomenu učiteljevega učenja v kontekstu poučevanja nadarjenih učencev.

Številko zaključujeta dve recenziji nedavno objavljenih znanstvenih monografij. Barbara Samaluk piše o monografiji, posvečeni pokojni dr. Sabini Jelenc Krašovec, ki so jo uredili Borut Mikulec, Sonja Kump in Tadej Košmerl (*Premisleki o izobraževanju in učenju odraslih: Andragoška dediščina Sabine Jelenc Krašovec*, Znanstvena založba Filozofske fakultete Univerze v Ljubljani), Sanja Zgonec pa o knjigi, ki jo je leta 2020 uredila Eeva K. Kallio in v kateri so objavljeni multidisciplinarni prispevki na temo kognitivnega razvoja v odraslosti (*Development of Adult Thinking: Interdisciplinary Perspectives on Cognitive Development and Adult Thinking/Razvoj mišljenja odraslih: Interdisciplinarni pogledi na kognitivni razvoj in mišljenje odraslih*, Routledge).

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Andragoška spoznanja/Studies in Adult Education and Learning, 2022, 28(1), 3-10
DOI: https://doi.org/10.4312/as/10791

EDITORIAL

EDUCATION IN THE DIGITAL TRANSFORMATION: REFLECTIONS ON THE ROLE OF ICT IN FUTURE EDUCATION

This issue focuses on the digitalisation of education and on utilising technology in teaching and learning. This is not a new topic for the magazine – and with good reason. Both in theory and practice, incorporating ICT into education is a constantly developing field and process; new knowledge and developments are introduced into the practice of teaching more quickly than they are into various official strategies. "Digital transformation" is a term used in politics and at the decision-making level to describe the various processes and recommendations to governments about incorporating technology use in schools. Recently, these processes have been guided by the European Commission's (2021) *Digital Education Action Plan*. In this and similar strategies, it is important to distinguish between the processes of "digitisation", "digitalisation" and "digital transformation" (Schmidt & Tang, 2020). Digitisation refers to the process of transforming the physical aspects of education into digital forms (e.g., delivering a workshop in electronic form, supplying classrooms with ICT equipment, etc.) – in our environment, it is easiest to see it as the computerisation of education. Schmidt & Tang (2020) define digitalisation as the transition to digital transferring and processing of data, while digital transformation has a deeper and more lasting impact on social and business processes and in our context signifies the transformation of our current education processes with the help of digital technology (Schmidt & Tang, 2020). The main goal of digital transformation in education is therefore not only "going digital", it also means thinking about how modern technology can help us improve (change) the processes of teaching and learning, make education more inclusive, etc. We might say that digital transformation has much broader goals in mind than mere computerisation and is more important for the educational profession as it affects the macro, mezzo and micro levels of education.

The Covid-19 pandemic, now hopefully coming to an end, will leave obvious traces in many fields, and has and will continue to have a strong impact on education. The consequences of school closures, the rapid transition to digital education, combined with the digital divide and underdeveloped ICT competences and didactic skills to organise teaching and learning online will be studied for years to come. Reports suggest that certain indicators of the digital divide have rapidly decreased in the last few years, while others

have not been changing at the same pace. This is also why some countries, communities or individuals were unable to adjust to the demands of the digital transformation triggered by the Covid-19 pandemic as quickly as others. The latest evaluation reports by the Slovenian Institute for Adult Education indicate that the pandemic dealt a severe blow not only to youth education but to participants in adult education and adult educators as well (Možina, 2021). The data indicates that the pandemic impacted participation rates the most, particularly among vulnerable populations that find it more difficult to take part in education. These groups include older people, immigrants, the unemployed, the Roma population, adults with a lower level of education, younger adults and those that do not have access to a computer or lack the necessary digital skills (Možina, 2021). A 2021 Eurostat study found that while access to the Internet and to computers is very high in the EU (between 80 and 90% on average), many low-income households do not have access to either. Eurostat's analyses also point to the issue of digital competences and these will have to be a priority for education reform. The results show that more than a fifth of young people and an even higher proportion of older people struggle with basic digital competences (Eurostat, 2021).

The process of digital transformation began or accelerated during the pandemic. It is safe to say that in education, there is no turning back or even slowing down. The *Digital Economy Outlook 2020* report by the OECD (2020) highlights the increased importance of digital technology and communication infrastructure; it also points out that governments are increasingly placing digital strategies at the centre of their political agendas. As previously mentioned, the European Commission has been very active when it comes to the digitalisation of education. In September 2020, after public consultation, it supplemented its action plan for digital education with the view of encouraging the further development of education and training for the digital age and contributing to the recovery of education after the pandemic. The new action plan of the European Commission (2021) has two main strategic goals: (1) fostering the development of a high-performing digital education ecosystem – in other words, computerisation, and (2) enhancing digital skills and competences for the digital transformation. The latter is particularly important for educators as it affects the development of digital competences from early childhood onwards, digital and media literacy, and digital competences education for teachers.

All of this also requires that we are mindful of the effect introducing technology into education has had or might have. Research results vary. In 1986, Larry Cuban, professor at Stanford University, researched the history of bringing new technology (radio, film, television) into the classroom and found that they did not – as had been predicted – impact the very essence of education. Cuban (1986) discovered, first, that the defenders of new technologies claimed that any form of technology could be used to make teaching more effective and successful; second, that these claims were backed by questionable research (often financially endorsed by companies producing the technology), and third, that because it had little effect or even a negative one, the acquired ICT equipment soon went out of use. Cuban (1986) came to the conclusion that this is a cycle that repeats

itself whenever a new form of technology becomes available: initial enthusiasm for a new gadget is followed by realism and/or disappointment. More recently, Tamim et al. (2011) predicted a brighter future for technology in education. In their meta-analysis, which encompassed research from the past forty years, they discovered that using computer technology in the classroom had more advantages than teaching without using technology. The results, based on a sample of 109,700 participants (in 1,055 studies) show the positive effects of using technology, however, with the stipulation that technology has a positive effect when it is used to support a lesson and not when it is the only means of learning. In other words, technology is best used as a didactic supplement or teaching accessory, not as a tool that could replace the teacher. It is a relevant message and warning at a time when many experts (particularly in computer technology) are betting on artificial intelligence, machine learning, automatization and the (machine) individualisation of learning.

A partial solution to this dilemma might be found in the World Bank report on the positive and negative experiences of distance learning in 17 countries (Munoz-Najar et al., 2021). The authors recommend a conceptual framework, where distance learning needs to include three complementary elements in order to be successful: trained teachers, the necessary technology and engaged (motivated) learners (Munoz-Najar et al., 2021). If we want distance learning to work, all three elements must be working together and we must develop all three. This finding can be applied to the digital transformation of education in general. Digitalisation must not merely mean equipping educational institutions with technology. It must be seen as the first step only, one that also requires the development of pedagogical and ICT competences of the teachers and learners (of all ages), as well as the proper use of technology during the education process.

The current issue includes five thematic contributions that deal with the specific challenges or new developments when it comes to using ICT in education. Bernhardt Schmidt-Hertha and Marius Bernhardt look at the relationship between the educator and the learner and how it affects successful teaching and learning both in an analogue and digital environment, i.e., distance learning. Anetta Basca-Bán focuses on how the higher education community in Hungary was affected by the Covid-19 pandemic. Her analysis centres on certain aspects of distance learning during the pandemic, the difficulties and obstacles distance learning posed to both teachers and students. Sabina Ličen, Igor Karnjuš and Mirko Prosen present the research results of a study on the experiences of higher education healthcare teachers in Slovenia taking part in a nine-week modular online course on designing, implementing and evaluating online learning units, based on the quality standards required in digital education. The next contribution also concerns healthcare education. Metka Skubic and Tita Stanek Zidarič present a pilot project from the field of midwifery education, a virtual course on childbirth and parenting. Their main focus is the evaluation of the project's execution using a qualitative research approach (focus groups). The final thematic article comes from Lea Bregar and Jasna Dominko Baloh and concerns the possibility of using microlearning in higher education. It particularly

focuses on two aspects: the authentic learning experience and acquiring more complex skills and knowledge.

The issue includes two non-thematic contributions. Corinne Brion writes about how culture affects learning transfer in Burkina Faso and Ghana. Sabina Ograjšek and colleagues examine the importance of teachers as learners when it comes to teaching talented students.

Finally, we have two reviews of recently published works. Barbara Samaluk reviews *Reflections on Adult Education and Learning: The Adult Education Legacy of Sabina Jelenc Krašovec* (Ljubljana University Press, Faculty of Arts), edited by Borut Mikulec, Sonja Kump and Tadej Košmerl. Sanja Zgonec brings this issue to a close with her review of *Development of Adult Thinking: Interdisciplinary Perspectives on Cognitive Development and Adult Thinking* (Routledge), edited by Eeva K. Kallio

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