Alen MALETIC – Brikena XHOMAKI – Andras SZUCS – Daniel DI MITRI

Reimagining education for the digital age

Position Paper of the Lifelong Learning

Introduction

The Lifelong Learning Platform (LLLP) is a European umbrella organisation with special status, gathering 40 associations with European outreach and membership, active in the field of education, training and youth. LLLP is covering all sectors of formal, non-formal and informal learning. The Platform aims to voice citizen's concerns about lifelong learning, promoting its holistic vision "from cradle to grave" and helping people in their life transitions.

This vision is meant to ensure equity and social cohesion as well as active citizenship,advocating that education and training should be described beyond terms of employability and economic growth also as a framework for personal development and proposing solutions to make lifelong learning a reality for all.

The Platform promotes a dialogue between civil society organisations and public authorities in order to modernise our educational systems and to support public sector innovation.

The LLLP Manifesto – Building the Future of Learning in Europe (2015)

In their position papers, the LLLP represents a humanistic and holistic approach of learning,
The Manifesto on Lifelong Learning issued in 2015, proposes the following main areas of reforms:

- building inclusive and democratic educational systems;
- widening access to quality education for all citizens;
- increasing the relevance of education to modern societies.

In the LLLP Manifesto, the Platform advocates for greater flexibility in learning (by using among others distance learning, digital technologies, blended learning and work-based learning) to meet the needs of a diverse range of learners, to widen opportunities for participation especially for socio-economically vulnerable people, but also fostering validation and recognition mechanisms for non-formal and informal learning and adapted assessment methods. Shift to creative solutions is also proposed such as experiential learning, learning by doing and better take into account students' diversity in order to raise engagement levels and improve educational achievement.

In the policy of the educational civil organizations, on macro-level more efficient coordination of social, employment and educational policies is stressed. Every European citizen should have access to digital technologies and learn basic digital and media competences by mainstreaming them in formal education and to ensure that their interactions with new technologies are positive and enriching and a pedagogy that enhances well-being in a learner-centred approach is used.

This approach is pronouncing straightforward the need for secured and sustainable funding of education, highlighting the decreasing national budgets in the field since 2011 – whereas policy rhetoric says that investing in people is a way out of the crisis and a long-term investment for the future of Europe.

Sustained efforts to Implement such strategies requires a strong political will to coordinate political instruments as well as working in partnership between educational, social and employment sectors and between policy-makers and civil society organizations.

LLLP believes that genuine change and innovation in education can only happen at the meso-level (school and community level). Fast-track changes in education are needed, often pushed by labour market demands. The necessary changes, the paradigm shift are easiest to realize if community cooperation focuses on collaboration between learning providers. Methodology shift may happen easier if formal education settings incorporate the experience of non-formal and informal settings.

***Digital developments have the potential to either facilitate or hinder this process*.**

The so-called digital revolution has penetrated many aspects of society and economy and profoundly transformed our lives. Even though there is a slow increase in the use of digital technologies and related methodologies and the ways they are applied in education as well, the impact of digitalisation is yet to have a truly transformational effect on education

The advocates for the use of technology in education emphasise its potential to enhance one's life chances, contribute to mobility, an increased social capital, shape citizens better informed of current events and political choices and civic engagement, as well as increased labour market integration and income effects. Learning with digital technologies enhances possibilities of democratising knowledge and access to it. Digital technology can, from another perspective, enhance the digital divide and existing inequalities as well.

The impact of digitalisation lies in the potential of **accessible, social and personalised technologies** that can bring about more inclusive learning paths and a learning continuum between formal, non-formal and informal learning. Learning is becoming increasingly ubiquitous in time and place, and the lines between traditionally divided tools are blurred. Digital solutions can feed into lifelong learning strategies and can be a powerful tool for **narrowing the achievement and opportunity gaps**. Llifelong learning holds the key to a successful societal response to the likely disruption caused by digitization in the workplace and in society. This depends on how digital technology is introduced and used in learning environments.

Learners do not end up as passive technology consumers but active, digital citizens, able to capitalise on their experiences, through constructing and reconstructing the nature, place, pace and timing of the learning event.

*

The LLLP Position Paper: Reimagining education for the digital age (2017)

Policy messages and recommendations

It's not digital technology that creates social change, people do! - It's not technology that creates changes in education, methodology shift does

Investment in people and widening access to lifelong learning opportunities is as important as investment in technology. Digital technology can support and enhance people's learning, meanwhile opportunities for learning throughout life empower people in using digital technology effectively and in a responsible manner, capitalising on their "digital experience".

The success of non-formal and informal education providers, as well as the growing pressure on formal education to change by the setting up of alternative schools and the spreading of home-schooling/unschooling movements show that different education sectors should work together, to find the role of successful alternative providers in supporting the necessary change in formal education that will remain a basic service for the whole of society.

Educational institutions and local communities need to work in partnership, together with a variety of different actors and partners, to address the need for **convergence, synergies and a cross-**

disciplinary expertise. The efficient use of technology in schools relies on strategic planning and school culture, empowering, participatory teaching and learning methods, flexible curricula, dedicated leadership/management. **Inclusive and reflective digital innovation is needed on the organisational level.** School policies, structural changes in curricula and assessment and teaching practices require increase in the competences of school leaders regarding data driven decision-making, participatory action research and strategic planning.

Mutually reinforcing effects of pedagogical and technological innovation

The so-called digital revolution is increasingly questioning the traditional educational concepts. Learners need to be guided towards innovative practices of knowledge creation, which includes better links between formal, non-formal and informal learning at the meso-level. Promoting innovative learning ecosystems is a powerful way to support tackling various complex issues linked to building more sustainable societies and economies.

Traditional education concepts based on the knowledge acquisition and the reproduction model "where there is one classroom, one teacher, one class, and one subject at a time", are being increasingly questioned. Technology, which allows us to expand our biological memory and develop new learning practices and makes learning more and more **blended or hybrid**.

Inquiry-, game- and project-based learning, phenomenon-based learning, collaborative learning and flipped classroom learning, all lead to more **reflective and participatory learning processes**. Augmented reality, virtual reality and gamification, associated with other communication technologies (quizzes, podcasts, apps and videos) can present adaptive and personalised learning strategies and contribute to the **creation of innovative learning ecosystems**.

Digital technology is carefully integrated, and not "dumped" onto learners

To effectively integrate digital technology into education systems, better and stronger cooperation of stakeholders is a prerequisite, ensuring convergence, synergies and a cross-disciplinary expertise. Collaborative and shared leadership reflecting learners' needs and transforming school culture is needed, in partnership with local communities.

Turning words into action - investing in teachers as transformers and awakeners

The role of teachers and educators has evolved and will continue evolving in the digital age. While we acknowledge the opportunities brought about by digital technology in supporting the crucial work done by teachers and educators, we call on decision-makers for improved support to them in the implementation of digital technology, by investing in their initial and continuous professional development.

A firm majority of **teachers believe that pupils are more motivated when computers and the Internet** are used in classes. It is essential to use a behavioural model and training models in this area.

There is however a **lack of support** and preparation that teachers and educators receive on the efficient use of technology, coupled with an increasing administrative workload. **A multi-modal, multi-layered, initial and continuous professional development of teachers** is an imperative to support substantial innovation in education.

Launching assessment methods into the transformative whirlwind

There is a clear need to reassess assessment methods in the digital environments. The LLLP strongly encourages shifting the balance towards assessment methods allowing increasing flexibility, creativity and innovation. A variety of different assessment methods, and in particular formative assessment, should be further explored and combined with other digital methods.

Apart from the potential to improve teaching and learning processes, digital technologies can also support new assessment methods, including self-assessment, making assessment an integral part of learning through artificial intelligence, machine intelligence, learning analytics. Several technologies are being developed to **exploit the rapid feedback loops made possible by computers** to support real-time, formative assessment, thus contributing to a more personalised learning process. New methods may be **combined with other electronic assessment methods** (e.g. e-portfolios, role-plays and scenarios, interactive activities, virtual or remote laboratories) and with more traditional assessment methods.

Technology as empowerment tool for the already empowered?

Mainstreaming digital access in education does not necessarily imply equal access to learning opportunities. Although technologies are becoming increasingly affordable, the acquisition of basic digital skills remains a barrier and the digital divide persists. Only a comprehensive approach shall reduce inequalities, which involves firstly tackling barriers, and secondly, enabling opportunities. The LLLP calls for an equal investment in digital competence, motivation and attitude acquisition, as key enablers to translating the world of information into the world of knowledge.

There is a need for investment in infrastructure and up-to-date digital devices and educational software. Mainstreaming digital access in education is not sufficient, because **equal access to technology does not automatically imply equal learning opportunities.**

The learners who are the most in need of support are also those who **are least likely to benefit from the digital era**. Technology also at best only amplifies the pedagogical capacity of educational systems; it can make good schools better, but it makes bad schools worse. Technology thus can become an **empowerment tool for the privileged**, instead of an opportunity for everyone.

People with **higher levels of education use the Internet more for personal development**, whereas the less educated seem to be more aware of only the entertainment aspects of the Internet. More privileged individuals have more access to the "enabling conditions" **– competences, attitudes and motivation**, which are prerequisites for meaningful digital participation.

It is crucial to change institutional practices of schools, but also other learning environments such as libraries and cultural centres, to make them equitable by offering substantially varied and deeper support structures to all learners (children, students, teachers, young people, adults, the elderly) with lower socio-economic status.

Digital divide gap …as long as there is the basic skills gap!

More complex, higher-order competences necessary for the efficient use of digital technology are rooted themselves in basic skills. Learners will never be on an equal footing to acquire digital skills as long as there are such large gaps in basic skills levels, particularly affecting disadvantaged groups and a high number of adults. The LLLP calls for a holistic approach to digital strategies serving the development of basic skills as a cornerstone for social cohesion.

Since digital machines and robots can perform work previously done by humans, there is a **growing need for skills and competences** that can complement technologies. These competences are based on higher order thinking and problem-solving capacities, proficiency in formal and symbolic language, rooted in mathematics and literacy. The digital divide will persist even if all Internet services were available free of charge unless low achievement in basic skills across Europe is tackled first.

In the last decades the development of life skills seemed to more easily take place in informal and non-formal learning settings. Therefore, investing in the capacity of **non-formal education providers provides a substantial added value**. They are the ones who can better reach out to low-skilled

adults, school drop-outs, senior people, the socio-economically disadvantaged groups, to ensure provisions for people's right to learning opportunities throughout life and active ageing.

Neutralising digital space and commercialisation of education

The commercialisation of education is becoming a reality. In this context, the LLLP calls for ensuring the pedagogical freedom of teachers and educators, as well as careful consideration of data security and privacy concerns. Ways to balance out the digital space and ensure fair outcomes for all would be to incentivise free digital resources and the interoperability of hardware and software.

The massive introduction of algorithms associated with artificial intelligence is a potentially underestimated threat, in terms of **the risk it poses to the pedagogical freedom of teachers and educators**, as well as data security and privacy concerns. An algorithm can be presented as the solution to the personalisation of learning, not only by offering teachers and educators the opportunity to build their classes and courses, but also by proposing technological improvements linked to needs and business profit and not to the benefits of society and the public good.

In order to effectively prevent potential threats of the digital commercialisation of education, the following rules could be introduced: **interoperability of hardware and software, systematic use of free software** solutions, **matching the needs for security, providing access to the source code of algorithm solutions** and (financially) **incentivising the production of free digital resources**, responding to the needs of the grassroots level, and emancipatory pedagogies instead of the often short-term expectations and cravings of the market.

Digital technology for whom? - Holistic and humanistic vision of education, Needs and concerns of people first

Digital technologies are used more and more to bring education provision closer to the needs of the economy. This trend we observe at all levels: technology serving the economisation of costs, turning learners into consumers, thus learning and skills development hardly address genuine learner needs. The LLLP recalls that a learner-centred approach is a prerequisite of the empowering approach to learning processes.

According to the 2016 Bratislava Declaration, **the European Commission also suggests reforms based on employer interventions in the curricula** which should now include more technological and business skills. The economy's needs are however only a part of what society needs.

Reflecting broader socio-economic inequalities and rising income inequality, the gap is also widening between the need for lower-skilled as well as high-skilled workers, and medium-skilled workers. Medium-skilled jobs are in decline, whereas there is a rise in the demand for lower-skilled workers and physical jobs and high-skilled ones. Digital technologies are today progressively used across different sectors and they can revitalise those sectors where new jobs are expected to be created in the coming years. There is a variety of career advancement tracks, like learning at the workplace and mentoring, community based courses, in an enhanced **cooperation** between educational institutions, civil society, broader communities and employers.

An increasing pressure on universities has been to remain competitive resulted, among other things, in the creation of MOOCs, which often serve for the **transfer of knowledge instead of the creation of knowledge**. The use of the Internet in schools is also more often associated with **serving the institutions themselves** – supporting administrative, bureaucratic needs and pupil information systems – rather than learning and skills development.

Safe navigation through digital waters

The importance of safety standards and accompanying measures for the groups most prone to risks and side effects associated with digital technologies is emphasized. Partnerships between parents, guardians, teachers, health professionals and educators are crucial in this regard at all levels.

As part of learning with digital technologies, people need to learn about online risks and ways of prevention, including emphasis on **media literacy and critical thinking**. In partnership with parents, health professionals and non-formal education providers, educational institutions need to participate in developing an age-appropriate curriculum, to train people to be critical users of electronic media, to be able to make relevant and informed choices and avoid harmful behaviour. Schools need to be precise in their description of online teaching materials and their suitability.

Cross-disciplinary research and the unknown

The LLLP calls for investment in unbiased, cross-disciplinary longitudinal research *on different aspects of digital technologies in education, interlinking educational sciences, pedagogy, psychology, sociology, neuroscience, engineering and computer sciences* to maximise benefits of the use of digital technology in education and minimise its risks.

Contributors:

- Panagiotis C. Anastasopoulos - Pi Consulting
- Dr Prof Paula Bleckmann - Alanus Hochschule
- Célio Gonçalo Cardoso Marques - Instituto Politécnico de Tomar
- Dr José António Ferreira Porfírio - Universidade Aberta
- Pascal Gascoin - International Federation of Ceméa
- Dr Éva Gyarmathy - Hungarian Academy of Sciences
- Dr Gábor Kismihók - University of Amsterdam
- Dr Mart Laanpere - Tallinn University
- Dr Ilse Mariën - Vrije Universiteit Brusse

Resources

- Ala-Mutka, Punie and Redecker (2008) Digital Competence for Lifelong Learning. JRC Policy brief.
- Alter, A. (2017). Irresistible. The rise of addictive technology and the business of keeping us hooked. New York: Penguin Press.
- Arbeit, DGB-Index Gute Arbeit (2016). Arbeiten ohne Ende-Wie verbreitet sind überlange Arbeitszeiten. Kompakt Ausgabe 1
- Autor, D. (2010) The Polarization of Job Opportunities in the U.S. Labor Market. Implications for Employment and Earnings. MIT Department of Economics and National Bureau of Economic Research
- Best, S. J., & Krueger, B. S. (2006). Online interactions and social capital: Distinguishing between new and existing ties. Social Science Computer Review, 24(4)
- Bitzer, E. M.; Bleckmann, P.; Mößle, T. (2014). Prävention problematischer und suchtartiger Bildschirmmediennutzung Eine deutschlandweite Befragung von Praxiseinrichtungen und Experten. KFN-Forschungsbericht 125. Niedersachsen, Kriminologisches Forschungsinstitut.
- Bonk, C. J., & Graham, C. R. (Eds.). (2006). Handbook of blended learning: Global perspectives, local designs. San Francisco, CA: Pfeiffer Publishing.
- Cain and Gradisar (2010). Electronic media use and sleep in school-aged children and adolescents: A review. Flinders University, Adelaide.

- Center for Implementing Technology in Education (2016). Lessons Learned for Effective Technology Implementation
- Commission Staff Working Document (2008). The use of ICT to support innovation and lifelong learning for all - A report on progress.
- Costa, E., & Holden, R. (2017). Lifelong Learning: an European answer to digitization. EAPM Newsletter, pp. 17-18.
- DiMaggio B., Bonikowski B. (2008) Make Money Surfing the Web? The Impact of Internet Use on the Earnings of U.S. Workers, American Sociological Review, Vol. 73 (April:227–250)
- European Commission (2008) Commission Staff Working Document. The use of ICT to support innovation and lifelong learning for all
- European Commission (2016). European Digital Progress Report
- Green, S., Pearson, E., & Stockton, C. (2006). Personal Learning Environments: Accessibility and Adaptability in the Design of an Inclusive Learning Management System, AACE World Conference on Educational Multimedia (EDMEDIA).
- Harvard Business Review (2015) "Who's Benefiting from MOOCs, and Why"
- https://www.scientificamerican.com/article/the-internet-has-become-the-external-hard-drive-for-our-memories/
- Hysing et al., (2015) Sleep and use of electronic devices in adolescence: results from a large population-based study. BMJ Open 2015
- ILO (2015). World Employment and Social Outlook: Trends 2015
- Internet Use on the Earnings of U.S. Workers. *American Sociological Review, 73*, 227–250.
- Johnson, L. et al (2014). NMC Horizon Report Europe - 2014 Schools Edition
- Katz, J. E., & Rice, R. E. (2002). Social consequences of Internet use: Access, involvement and interaction. Cambridge, MA: MIT Press.
- Kumpulainen K., Mikkola A. & Jaatinen A. (2013). The chronotopes of technology-mediated creative learning practices in an elementary school community. University of Helsinki, Finland.
- Livingstone, S., Haddon, L., Görzig, A., and Ólafsson (2011). EU Kids Online Final Report.
- Llamas-Nistal, M., Fernández-Iglesias, M. J., González-Tato, J., & Mikic- Fonte, F. A. (2013). Blended e-assessment: Migrating classical exams to the digital world. Computers & Education, 62.
- LLP Platform (2015). *The LLLP Manifesto – Building the Future of Learning in Europe*.
- LLP Platform (2017). Reimagining Education in the Age of Digital Technology. Policy Paper
- Lonka, K. (2012). Engaging Learning Environments for the Future. The 2012 Elizabeth W. Stone Lecture. In R.
- Marr, Mirko. 2005. Internetzugang und politische Informiertheit. Zur digitalen Spaltung der Gesellschaft. Konstanz.
- Melkevik et al., (2010) Is spending time in screen-based sedentary behaviors associated with less physical activity: a cross national investigation. International Journal of Behavioral Nutrition and Physical Activity
- Mossberger K., Tolbert, C.J. and McNeal R.S. (2007). Digital Citizenship: The Internet, Society and Participation. MIT Press eBooks.
- Niemi H. et al (2013). Towards ICT in everyday life in Finnish schools: seeking conditions for good practices
- Nunes M. (2006). Cyberspaces of Everyday Life. How network technologies produce social space.
- Nunez-Smith, M. et al. (2008): Media and child and adolescent health. A systematic review. Washington, DC: Common Sense Media.
- OECD (2015). OECD Digital Economy Outlook 2015, OECD Publishing, Paris.
- Pagani et al. (2010) Prospective associations between early childhood television exposure and academic, psychosocial, and physical well-being by middle childhood.

- Pashler et al. (2008) Learning Styles: Concepts and Evidence. A Journal of the Association for Psychological Science. Volume 9, Number 3.
- Petry et al. (2014). An international consensus for assessing internet gaming disorder using the new DSM-5 approach. Addiction, 109(9), 1399- 1406.
- Rainio, A.P. (2010). Lionhearts of the playword: An ethnographic case study of the development of agency in play pedagogy. University of Helsinki, Finland.
- Richards et al. (2010) Adolescent Screen Time and Attachment to Parents and Peers. American Medical Association.
- Santos, I., & Carvalho, A. A. (2017). Training and Monitoring: a two-stage training model in teacher professional development. Educação & Realidade, 42(1),
- *Society and Participation*. MIT Press eBooks. ISBN: 9780262252959.
- Tewksbury D., Weaver A. J., Maddex B. D. (2001). Accidentally informed: Incidental news exposure on the World Wide Web. Journalism & Mass Communication Quarterly
- Thomas (1995). Access and inequality. Information technology and society. Heap N. et al (Eds) Sage publications.
- Uhls et al. (2014) Five days at outdoor education camp without screens improves preteen skills with nonverbal emotion cues. Computers in Human Behavior, Volume 39
- van Deursen A., van Dijk J. (2014). The digital divide shifts to differences in usage. University of Twente, Netherlands.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. MIS Quarterly, 27 (3).
- Vernadakis et al. (2011) The effect of information literacy on physical education students' perception of a course management system. Media, learning and technology.
- Wellman, B., Quan y Haase, A., Witte, J., & Hampton, K. (2001). Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. American Behavioral Scientist, 45 (3).