**András BENEDEK**

# Welcome Note

This year again, the OPUS English issue will be as we hope, rich in interesting information. The main theme is digitalization and its impact on education and communication, including different stakeholders perspective. Thanks to András Szűcs, guest editor of this issue, member of the EU 2020 Digital Skills and Competencies Working Group, Secretary-General of the European Distance and E-learning Network (EDEN), coordinated the edition of this issue and contributed with a comprehensive paper as well.

In the **Papers/Reports** section, articles strive to systemize the new information highlighting the specific political and business dimensions of the digital transformation going on in higher education (*Éva Szalma*). In terms of the real and the virtual extension of the technological scope the re-interpretation of the theoretical and practical inter-connections of life-long learning is of outstanding importance. This is what the engaging paper of an international authors' triumvirate (*Maletic, Xhomaki, and Di Mitri*) tells us about the contemporary interpretation of policy questions in our digital era. Connecting to this theme, *Claudio Dondi* analyses the current debates of the international fora by surveying the experiences of the EDEN conference of 2018, presenting the thematic hubs that may indicate main directions of further development.

In the **Studies** section readers will find articles presenting innovative practice as well as the change of the environment. At macro level, the cooperation between generations and the impact exerted by the parents on their children's career and the development of their competences are of outstanding importance (*Salamon*).

The study by *János Horváth Cz.* analysing the relations of content in learning and teaching is somewhat a counter pole to the previous article. In the era of the spread of community based content development and bio-attitudes the innovative solutions have made the online-collaborative way of developing micro content and learning units at the user level possible. This topic connects to the creation of new communication methods and the recognition of their development features (*Zsuzsanna Horváth*) as well as to the conscious intertwining of language and the visual elements of culture which is the subject of the study by *Brian Noran* with reference to the Visual Learning Conference held in Budapest this year.

I hope this short resume gives an attractive introduction to the rich content of the English issue of Opus et Education published at the end of 2018. I wish our readers joyful reading, and coming to the end of the year, a Marry Christmas and a New Year rich in success.

Editor in chief of Opus et Educatio

**András SZŰCS**

# Digital Education:
# from hype and disappointment to change

*The EU2020 Digital Skills and Competences Working Group and the Digital Education, Learning, Teaching and Assessment (DELTA) Activities 2016-2020*

**Background and environment**

Powerful and sophisticated ICT is part of everyday life and the world of learning is not an exception. E-learning, open and distance education have been important fields of intellectual excitement and innovative development. The demand for people with new, enhanced skills is growing. Pressure is on all players of the online education community to keep up with new learning, and supply the skills demanded by growing economies.

The challenges posed by the new technologies are permanent whilst the role of human, socio-cultural-economic themes are more and more at the cutting edge. Technology is with us everywhere which validates the horizontal-holistic approach for imperative questions of the period. For the transforming education landscape, challenges come increasingly from the structural and policy fields. Social and economic tensions raise the issues of scalability and micro-credentialing. Practitioners are seeking right approaches to provide learning opportunities. Micro, meso and macro aspects open new lenses for considering the problems. Digital credentials and open badges are the new currencies, starting to transform business models in education.

The educational framing, from policy level down to the actual learning scenario, allows for various types and variations of of ICT enhanced, collaborative, open, distance education and e-learning. Finding and applying the right mix of information, knowledge and creativity is of primary importance for the educational experience, to bring together the strengths of the past with the challenges of the present and opportunities for the future.

The European Union initiatives emphasize solutions to emerging needs, seek to improve competitiveness and professional development; enhance cross-sectoral skills and fuel the engines of social innovation – creativity, entrepreneurship, critical thinking and problem solving.

Education has to be visionary to reach efficiency gains, new sources – and to offer sustainable services, reflecting the complexity of modern societies. New generation of learning technologies and networks are ubiquitous, embedded and mobile which reshape access to and delivery of learning. Market realities put similar pressures on the corporate and University worlds. Stakeholders suppose *academia* to respond to needs beyond teaching and research, better promote innovation and the knowledge economy, manage the new student populations. Universities are expected to detect and attract talents, be magnet of inputs from practitioners, resulting cooperative surplus.

**What did we learn ? How did we learn? – A critical perspective about change**

Decades after Internet and digital technologies penetration worldwide, we are still talking about their potential for education, but less about the impact. Literature on the role of technology in education is often about enthusiastic claims, with over-promises. A loop of new claims emerges

every time a new digital technology enters the market. The hype is substantiated by the fascination with technology but often also driven by commercial interests

The potential of digital technology linked to change creates thirst for change and disruption which sometimes leads to incoherent arguments on how to improve education.

Promises of digital technologies have been including: increase students' motivation; promote cognitive development, provide interactive resources and real-life experiences, enhance means of communication and collaboration, cater learning material and resources to the pace of each student, enable research through the availability of large data sets. (Ng, 2015).

Speeding up the educational process, allowing to learn faster has also been an expectation. However, technologies do not accelerate the act of learning which is based on a human rhythm. Technologies can ease the access to content, they can speed its consumption, but the act of learning cannot be faster than the time it takes each of us to learn.

Educators often take digital and media skills for granted and may overlook the diversity of learners' profiles and the educational settings. Teachers and learners have to deal with diversity in media and technology enhanced learning environments. In the changing media and technology landscapes, the behaviour, roles and demands of learners are also reconsidered. Matching students' attitudes, needs and the learning environment design is also conditioned by the educational systems.

Using technologies in education is fundamental to empower every citizen in their use of technology in everyday life. Innovation in the systems however are not necessarily mirrored in innovation at a more granular level, or at the level of the single organisation. In education, uptake of digital technologies is seldom innovative. Digital technology is often incorporated into existing teaching and learning practices rather than as a trigger to transform them (Karasavvidis & Kollias, 2017). Actually, digital technologies have rarely been designed to reproduce a lecturing model of instruction. Often, we are really just substituting one technology for another and not engaging in transformation. The use of digital technology in education, whatever high its presence has been in different forms at all levels, is often superficial and unreflective.

OECD research finds in the meantime on long term signs of convincing impact of innovation and technologies in learning. According to them: *Compared to other sectors, knowledge and method innovation is above average in education; product and service innovation is below average, while technology innovation is at the average sectorial level (2014)*. - *Since the mid-20th century, education systems have expanded enormously and human populations have never been more highly educated than today (2016)*.

**Fostering digital education practices**

Digital learning providers are often followers of innovations that have been designed to answer to the needs of other sectors. Digital technologies are there to help solve problems. Instead, we propose reforms that promote the integration of digital technologies in education and in doing so we create problems. Teachers often do not perceive technology as a resource to help with learning, do not see technology as a solution rather, as an add-on that he will have to figure out how to integrate in his subject.

Literature on the use of digital technologies in education is rich in philosophical and visionary terms, but hardly delivers on pragmatic level. Regarding potential for innovation and impact of technology on knowledge creation, researchers are often fascinated by the complexity of the arguments. Yet, we

often find that the focus is on tasks, not on practices and we focus on substitution rather than transformation.

The need to prepare a workforce is one of the many aims of education. Often the problems technologies are designed to solve are not arising from education but from other disciplines or fields. The reasons of policies are meanwhile rather different from those of teachers. Reasons why teachers use technology include: external requests and expectations of others, increasing student attention, using the basic functions of technology, relieving physical fatigue, class preparation and management, and using enhanced technology functions.

The Digital Skills and Competences Working Group suggested to create a vision, from researchers to policy-makers to school leaders, that supports the innovation of practices and to develop shared beliefs about learning and the learning that the educational community values. The act of learning has not necessarily changed because of the introduction of digital technologies, but what has changed is the potential to design learning experiences and how learners engage with such learning experiences.

Assessment plays a central role here, informing each learners on how they are achieving their goals through different types of feedback. Digital assessment can help educators in identifying the need to support students and can facilitate system-level change.

Digital technologies allow to reimagine how to engage with learners. This inspires us to rethink the spaces in which learning takes place and the modes of learning we offer to learners.

Rethinking of experiences brings a need for critical reflection and pushes teachers to transforming how they engage with learners which requires professionals who are comfortable with working in complex situations, designers and implementers of deep learning experiences.

Another perspective to be taken into account is the role of learners and students. The majority of literature focuses on the resistance of teachers, but there are the students as stakeholders as well that can be reluctant to change. The student perspectives remain largely undocumented. They have expectations of a lesson and might be resilient to adapt to reforms in education. Karasavvidis & Kollias claim that until 2017 there was a clear lack of data and insights on how students experience and respond to digital transformation in education.

**European Education Thematic Policy – Framework, Aims and Activities**

The EU focuses its efforts in creating policy in different fields and on different topics, such as: Early childhood education, Schools, Vocational Education and Training, Adult education, Higher education, International cooperation and policy dialogue, Multilingualism and Education and migrants

The strategic **framework for European cooperation in education and training** (ET 2020) is a forum allowing Member States to exchange best practices and learn from each other by gathering and disseminating knowledge, provide and receive advice and guidance for policy reforms at national level. The framework is based on a lifelong learning approach covering learning in all contexts – formal, non-formal and informal – and at all above sectors.

***ET 2020 pursues the following common EU objectives:***

- make lifelong learning and mobility a reality;
- improve the quality and efficiency of education and training;
- promote equity, social cohesion, and active citizenship;

- enhance creativity and innovation, including entrepreneurship, at all levels of education and training.

The European Commission is also developing initiatives to help work towards a European Education Area. The goal is that, in Europe:

- spending **time abroad** to study and learn should be the standard;
- school and higher education **diplomas** should be recognised across the EU;
- knowing two **languages** in addition to one's mother tongue should become the norm;
- everyone should be able to access high quality education, irrespective of their socio-economic background; and
- people should have a strong sense of their **identity** as Europeans, of Europe's cultural heritage and its diversity.

In the December 2017 European Council Conclusions is described the vision of building a European Education Area on a combination of:

- strengthened Erasmus+ programme;
- an ambitious framework for European policy cooperation in education and training;
- support for Member State reforms through the European Semester; and
- better targeting of European funds.

In January 2018, the Commission presented a first package of measures, for the European Education Area, addressing:

- key competences for lifelong learning;
- digital skills; and
- common values and inclusive education.

In its Communication on Building a stronger Europe: the role of youth, education and culture policies, the Commission has brought forward a **second package of initiatives**. in which highlights the important role played by education in building the future of Europe.

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**Higher education policy**

Higher education institutions are crucial partners in delivering the European Union's strategy to drive forward and maintain sustainable growth. EU activities are designed to bring an additional international dimension to studying, teaching, researching or making policy in higher education.

In 2017, at the Gothenburg Social Summit, the European Commission laid out its vision for 2025 of a European Education Area in which the free movement of learners is guaranteed:

To take forward this work, the European Commission is currently working on three key priorities to boost mobility and student exchanges for all:

1. A Network of European Universities
2. The automatic mutual recognition of diplomas
3. A European Student Card

The European Commission works closely with policy-makers to support the development of higher education policies in EU countries in line with the Education and Training 2020 strategy. The renewed EU agenda for higher education, adopted by the Commission in May 2017, identifies four key goals for European cooperation in higher education:

- tackling future skills mismatches and promoting excellence in skills development
- building inclusive and connected higher education systems
- ensuring higher education institutions contribute to innovation
- supporting effective and efficient higher education systems.

In particular, the European Commission supports:

- the exchange of good policy practices between different countries through the ET2020 higher education working group;
- the Bologna Process, designed to promote the internationalisation of higher education in Europe.
- the development and use of mobility and recognition tools, such as the ECTS system and the Diploma Supplement, to increase transparency and facility exchanges in Europe.

In the context of the European Education Area, the European Commission has taken a number of further initiatives:

- the concept of Networks of European Universities brings a major change to higher education practices, through integrated curricula and mobility, thus fostering quality, excellence and innovation;
- the proposed Council recommendation on automatic mutual recognition of higher education and school-leaving diplomas helps to remove barriers to student mobility within Europe;
- the future European Student Card will facilitate the secure exchange of student information and reduce administrative burden for higher education institutions, serving as a concrete example of the emerging European Education Area.

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**The ET 2020 Working Groups**

Working Groups are designed to help Member States address the key challenges of their education and training systems, as well as common priorities agreed at European level. As part of the Open Method of Coordination in Education and Training (the ET 2020 cooperation framework), the Commission and Member States cooperate in Working Groups.

The focus of the Working Groups is to help the Member States in furthering policy development through mutual learning and the identification of good practices in education and training.

Following their mandates, Working Groups must deliver outputs linked to the objectives of the European Policy Cooperation (ET2020). It helps them to gather and disseminate knowledge, as well as provide and receive advice and guidance for policy reforms at national level.

The framework is based on a lifelong learning approach and designed to cover learning in all contexts – formal, non-formal and informal – and at all levels: from early childhood education and care and school education, through to higher education, vocational education and training and adult learning.

The Education and Training Monitor annually monitors Member States' progress towards the ET 2020 objectives and benchmarks. This analysis feeds into the evaluation of broader socio-economic progress by Member States within the European Semester. Consultation and cooperation activities are taking place, with stakeholders, including civil society as well as business and social partner organisations, such as the European Education Summit and the Education, Training and Youth Forum. Funding is available for policy support activities and innovative projects through the Erasmus+ programme.

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**Teaching, learning and digital change - Key messages from the Working Group on Digital Skills and Competences 2016-2018**

The Working Group on Digital Skills and Competences, ran between February 2016 and July 2018, looked at how education systems and learning is impacted by the digital transformation of the economy and society. The mandate of the group, centred on the following questions:

- how can education systems support the development of digital skills and competences to prepare learners of all ages for the labour market and for participation in society?
- how is digital transformation changing learning and teaching and how can technology best support innovative, active and learner-centred pedagogies?

The group published key policy messages and worked on a number of research outputs, tools and frameworks on digital education, notably: the new SELFIE tool for schools (the self-reflection tool for digitally capable schools), the Digital Competence Framework for Educators (DigCompEdu) with the mix of skills needed by educators in using technologies, the Digital Competence Framework for Citizens, and the revision of the definition of digital competences in the EU framework on key competences

The group's Peer learning activities (PLAs) covered topics like: Bring Your Own Device Policies (Hamburg), Coding and Computational thinking (Helsinki), Learning Analytics (Brussels), Higher education in the Digital Age (Malta), Working in partnership to tackle the digital skills gap (Belfast), Education 4.0 - Mobile Learning (Vienna), Digital assessment (Tallinn), Innovative, open and digital higher education (Zagreb), Digital resources (Paris).

**Summary of the core themes in the WG**

***Technology supporting pedagogies***

- Encourage and support digital pedagogies, rather than the mere use of tools and technologies. Pedagogical goals and priorities should be a leading factor.
- Supporting the active participation of students through personalised, collaborative and project-based learning.
- Monitoring the impact of digitalisation on student experience and learning outcomes.
- E-textbooks providing interactive and personalised learning, allowing individualisation and differentiation of teaching.
- Assessment: transitioning from knowledge-focused to competence-focused learning. Digital assessment as opportunity for personalisation and flexibility.
- Potential of Learning analytics for improving the quality of teaching and learning, with attention to privacy and ethical questions.

***Organisation-wide approach towards digital change in education***

- Holistic, organisational approach to digital change as key driver for digital education.
- Planning for innovation and change in terms of pedagogies, infrastructure and institutional strategy.
- Combination of top-down and bottom up approaches in integrating digital devices in education.
- The SELFIE tool, developed by the Commission can help schools to further embed technology for teaching and learning by reflecting on their digital policies and practices and developing organisation-wide strategies.

***Effective partnership and cooperation***

- Ecosystem of partnerships between formal and non-formal education, governments, industry, civil society, cooperation between policy-makers, local and regional authorities, private sector, non-formal education and NGOs, collaboration between educators and industry to tackle the digital skills gap in the labour market.
- Recognition and validation of open online learning to enhance the learners' experience, to encourage new learning opportunities.
- Working with research and evidence-based policy making. to bring together worlds of educational research on digital education and policy making.

***Teacher education and capacity building***

- Teacher competence and confidence in using digital technologies in a pedagogically meaningful way. Teachers need support and training on the opportunities and challenges for meaningful and critical integration of digital technologies including practical examples of technology-enhanced teaching.
- Teacher training on technology use from a pedagogical viewpoint and on specific digital competences, with priority to flexible approaches for teacher training, overcoming concerns regarding technology use.
- Dedicated programmes needed to scale and support innovative teaching practice within higher education institutions.

***Digital resources, equity and inclusion***

- To ensure that digital transformation in education benefitted all students equally and did not become a factor of exclusion and marginalisation.
- Female students engaged in ICT studies and careers need for mentoring, female role models and dedicated activities.
- Equity in accessing devices, digital resources and high speed internet connection is also vital. Major differences in access can be found between and within European countries.
- Paper and digital tools can be used to mutually reinforce teaching and learning practices. Educators need guidance and opportunities to find and acquire relevant learning materials and tools in terms of language, age group and subject needs. The landscape of educational publishing is changing with publishers moving towards more innovative, developing new business models.

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**Mandate Of The DELTA Working Group 2018-2020**
**Digital Education, Learning, Teaching and Assessment**

The Commission's Digital Education Action Plan (January 2018) highlights the urgent need for education and training systems to address the digital skills gap and ensure that all citizens benefit from the opportunities of digital transformation.

The DELTA group, as successor of the Digital Skills and Competences Working Group, group will continue to have a cross-sectoral and life-long learning approach to digital education.

- Help to enrich the learning experience.
- Help students to learn how to use technology in creative, collaborative and proactive ways.
- Help educators, to support their teaching practice by technologies by new ways to collaborate.
- Help educational institutions and the system level, to improve internal processes, collaboration and communication by technologies including parents.

***Main concrete issues to be addressed:***

- Addressing the development of digital competences at all levels of learning, including non-formal and informal, in response to the digital revolution.
- Fostering transparency, quality assurance, validation and by recognition of skills and qualifications, including those acquired through digital, online and open learning resources, as well as non-formal and informal learning.
- Promoting the use of ICT with a view to increasing the quality and relevance of education at all levels, the availability and quality of open and digital educational resources and pedagogies, in cooperation with European open source communities.

***Expected Outputs:***

- supporting the implementation of the Digital Education Action Plan with regular discussions and progress reports on the 11 initiatives at working group meetings;
- supporting the scaling up of the SELFIE self-assessment tool as foreseen in the Digital Education Action Plan;
- compendium of innovative practice and policies in digital education (case studies, examples from all phases of education);
- guiding and giving input on European Commission research and frameworks on digital education and digital competences;
- key messages for policy makers following peer learning activities.

**Priority themes recommended for discussion within the group:**

**Making better use of digital technology for teaching, learning and assessment**

- Change management in educational institutions and support for educational leadership; success criteria and influencing factors.
- Digital teaching tools and resources: Open Educational Resources and Free and Open Source Software; concerns around interoperability and lock-in.
- Recognition of prior learning, validation, credentialing and digital badges: bridging learners' educational paths.

***Developing relevant digital competences and skills for the digital transformation***

- Supporting teachers' pedagogical digital competence and confidence in using technology to improve teaching and learning; technology supporting communication, collaboration and exchange in the organisation, including virtual exchange of educators.
- Improving computational thinking (including teacher training and assessment) and digital competence, and the links between digital and entrepreneurial competences.
- Good practice and innovation in digital well-being, cyber-security education and digital citizenship.
- Assessing the impact of digital education strategies at national and regional level

***Trends and foresight:***

- evaluation of digital technology use in education - cost-benefit analysis.
- exploring trends and emerging themes: eg big data, robotics, Artificial Intelligence, Augmented Reality and Virtual Reality, and gaming, the role of Makerspaces in educational practice and systems, innovation in digital assessment.
- using data to improve teaching and learning; personalised learning; learning analytics; data protection and privacy issues in education.
- changing learning spaces for innovative and digital educational approaches, co-creation, collaboration and learner-centric teaching and learning.
- STEM and VET 4.0; education and training in informatics.

**RESOURCES**


- Aagaard, J. (2015). Drawn to distraction: A qualitative study of off-task use of educational technology. Computers & Education, 87, 90-97.
- Baek, Y., Jung, J., & Kim, B. (2008). What makes teachers use technology in the classroom? Exploring the factors affecting facilitation of technology with a Korean sample. Computers & Education, 50(1), 224–234.
- Cuban, L. (1986). Teachers and machines: The classroom use of technology since 1920. Teachers College Press.
- Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies, https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digital-education-policies-europe-and-beyond-key-design-principles-more-effective-policies
- Djumalieva, J., & Sleeman, C. (2018). Which digital skills do you really need? Nesta. https://media.nesta.org.uk/documents/Which_digital_skills_do_you_really_need.pdf
- EDEN Oslo, Genova, Jönköping, Bruges Proceedings
- European Commission. (2018). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Digital Education Action Plan, COM/2018/022 final.
- European Framework for Digitally Competent Organisations. https://ec.europa.eu/jrc/en/digcomporg
- European Framework for the Digital Competence of Educators. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/european-framework-digital-competence-educators-digcompedu
- Fraillon, J., Ainley, J., Schulz, W., Friedman, T., & Gebhardt, E. (2014). Teaching with and about information and communication technologies. In: Fraillon, J., Ainley, J., Schulz, W., Friedman, T., & Gebhardt, E. (Eds.), Preparing for life in a digital age (pp. 195–228). Springer.

- Free Digital Learning Opportunities for Migrants and Refugees. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/free-digital-learning-opportunities-migrants-and-refugees-analysis-current-initiatives-and
- Going Open: Policy Recommendations on Open Education in Europe brings policy recommendations at regional, national and EU levels to foster open education in all education sectors.. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/going-open-policy-recommendations-open-education-europe-openedu-policies
- Hallissy, M., Butler, D., Hurley, J., & Marshall, K. (2013). Redesigning education: Meeting the challenges of the 21st century. http://download.microsoft.com/download/7/b/e/7bed9f61-335e-48d5-81e7-0d00f146c1df/ms-learning-paper-book.pdf
- Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, caution, and change. Journal of Curriculum Studies, 37(2), 155–192.
- http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3092&Lang=EN
- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52013DC0654
- https://ec.europa.eu/education/sites/education/files/digital-education-action-plan.pdf
- https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digcomp-20-digital-competence-framework-citizens-update-phase-1-conceptual-reference-model.
- https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/digital-technologies-and-learning-outcomes-students-low-socio-economic-background-analysis
- ICILS: Main findings and implications for education policies in Europe – http://ec.europa.eu/education/library/study/2014/ec-icils_en.pdf
- Karasavvidis, I., & Kollias, V. (2017). Understanding Technology Integration Failures in Education: The Need for Zero-Order Barriers. In Reforms and Innovation in Education. (pp. 99-126). Springer.
- Knox, J. (2016). Posthumanism and the MOOC: Opening the subject of digital education. Studies in Philosophy and Education, 35(3), 305-320.
- Levy, F., and R. Murnane. (2013). Dancing with robots: Human skills for computerized work. NEXT Report. http://www.thirdway.org/publications/714
- Loveless, A. M. (2008). Creative learning and new technology? A provocation paper. In J. Sefton-Green (Ed.), Creative Learning (pp. 61-72). London: Creative Partnerships.
- Mąkosa, P. (2013). Advantages and disadvantages of digital education. Biuletyn Edukacji Medialnej, (2), 21-31.
- Ng, W. (2015). New Digital Technology in Education: Conceptualizing Professional Learning for Educators. Springer.
- OECD (2016). Innovating Education and Educating for Innovation. Paris: OECD Publishing.
- OECD. (2014). Measuring innovation in education. Paris: OECD Publishing.
- Outputs and key messages of the Working Group Digital Skills and Competences (2016-2018) https://ec.europa.eu/education/policy/strategic-framework/expert-groups/digital-skills-competences_en
- Policy Approaches to Open Education – Case Studies from 28 EU Member States provides an analysis of current policies on open education across Europe. https://ec.europa.eu/jrc/en/publication/policy-approaches-open-education-case-studies-28-eu-member-states-openedu-policies
- Proposal for a Council Recommendation on Key Competences for Lifelong Learning. https://ec.europa.eu/education/sites/education/files/recommendation-key-competences-lifelong-learning.pdf

- Rodrigues, S. (2006). Pedagogic practice integrating primary science and elearning: The need for relevance, recognition, resource, reflection, readiness and risk. Technology, Pedagogy and Education, 15(2), 175-189.
- Selwyn, N. (2012). Education in a digital world: Global perspectives on technology and education. Routledge.
- Sharples, M. (2016). Digital education: Pedagogy online. Nature, 540(7633), 340-340.
- Silverstone, Roger, Hirsch, Eric (Eds.) (1992). Consuming Technologies: Media and information in domestic spaces. London/New York: Routledge.
- Windschilt, M., & Sahl, K. (2002). Tracing teachers' use of technology in a laptop computer school: The interplay of teacher beliefs, social dynamics, and institutional culture. American Educational Research Journal, 39(1), 165–205.
- World Economic Forum. (2016). The future of jobs: Employment, skills and workforce strategy for the fourth industrial revolution.

**Eva SZALMA**

# Transforming Universities for the Digital Age

*Policies – Business Models – Resources*

*« There remains a culture of conservatism within European HE which needs to change. This demands strong leadership and vision from both public authorities and institutional leaders.»*

*(Vassiliou 2014)*

Higher education systems in the European Union are operating in an increasingly fast-changing and competitive environment. They have to tackle key issues dealing with massification, career guidance, cost-efficiency, international attractiveness, student mobility. At a more operational level, digital practices and technologies support the change of several aspects of higher education institutions and new players providing expertise and methodologies undermine the classical model of university as a leading knowledge producer and disseminator.

Such major transformations require modern governance arrangements and dynamic leadership. As outlined in the EU Modernization Agenda of Higher Education (2011), the major bottleneck found is the staff competence and preparedness, more specifically at the institutional leadership and executive management level.

The interest for e-learning is not new but contrary to the obvious interest for equipment or management, this has not been enough for e-learning to impose itself. As stated by Paul Bacsich (2011) the presence of ICT in universities is a reality but the education transformation has not yet taken place. So far, initiatives are generally focused on operational (managerial) aspects. The D-TRANSFORM project starting in 2014 and ending in 20171 was the first European-funded project focusing on the fundamental strategic aspects of digital innovation of Higher Education. Through leadership schools, MOOCs, guidelines and stat-of-the-art reports it helped university governing bodies to define their own digital strategies and coordinate them with public policies defined at the European/national level and to be able to plan e-education according to the university needs and profile.

**Public Digital Policies in Higher Education**

The experts delegated by the Fondation Maison Des Sciences De L'Homme and Université de Lorraine (France), Sero Consulting Ltd (UK), the Fundacio per a la Universitat Oberta de Catalunya (Spain), Politecnico di Milano – METID (Italy), the Budapest University of Technology and Economics (Hungary) and the European Distance and E-Learning Network – EDEN, being the most comprehensive network of educational professionals in Europe, set out to publish a series of surveys about digital transformation of higher education in Europe providing:

- the state-of the art on national policies,
- the analysis of business models, and
- the implementation of Open Educational resources.

[1] DigiTal Resources As a New Strategic FactOr for a Renovation and Modernization in HE,
Type: Initiative supported by the ERASMUS+(2014- 2017) Budget: 1 M$

The 1st survey focusing on a comparative analysis between Spain, France, Italy and the United Kingdom of national policies for university digital transformation, implemented since the beginning of the 21st century was published in January 2016.

The foundation of the report is an overview of the evolution of the European university policies, than it exposes the broad lines of policies of the above mentioned countries along the lines of equipment, computerisation of university management, digital learning (resources and devices) and digital training (methodology). Finally it investigates to see if a common core exists within the various university systems which would allow for the implementation of a common strategy for e-education or whether it is more relevant to consider "specific strategic advice" for each country.

***EU policies are relatively unsuccessful in bringing about change***

The report considered three major initiatives to understand the European evolution:

- e-learning in 2001
- e-learning renewal in 2005
- opening up education in 2013

The following table points out these schemes main objectives comparing them with the European strategy launched in 2000, also known as the "Lisbon Strategy".

*Main European directives for the digital transformation in higher education*

| Year | Programme | Objective |
|---|---|---|
| 2000 | ***Lisbon Strategy*** (2000-2010) : → **Apprendre en ligne** (2001-2006) | Promote the use of ICT in higher education to improve quality, access and collaboration. |
| 2005 | Mid term evaluation of the Lisbon Strategy: → **Education througout life** (2007-2013) | Improve the integration and the development of ICT through a general policy (including sector programmes such as Socrates, Da Vinci, et Apprendre en ligne). |
| 2010 | ***Europe 2020*** → **Opening up education** (2013) | Encourage the Open Education Resources (OER) and more specifically MOOC, to meet with :<br>- Students demands of flexible and tailor made education<br>- Companies demands for less time and space constraints for professional training. |

Defined in 2000 for the period running from 2000 to 2010 the Lisbon Strategy tries to turn Europe into "the world's most competitive and dynamic knowledge economy" through six actions including education. Its ambitions are materialized in the e-learning program defining e-education as the education of the future. The midterm review of the strategy in 2005 found that this form of financing the digital infrastructure, digital literacy (ECDL), digital learning competences was a failure. Hence the creation a specific program dedicated to higher education with the aim to increase the network connections (broadband internet), the development of the holistic approach of education and training through life program and the incentive of open access. This revision strategy was also deemed a failure as it was too ambitious and budgets were not sufficiently specified. Higher education fell behind once again.

The “Europe 2020” strategy launched in 2014 fights the crisis with freedom as the alternative.

It does not does not bring substantial modifications to digital technology in the European economic and social transformation. However the objective for each sector is redefined to encourage a “smart, sustainable and inclusive growth” (Europe 2020) thus higher education is the object of a specific strategy and is present in four of the seven pillars of the overall strategy, namely in the One union for innovation (HE and research), in Youth in action (mobility and integration), in Digital strategy for Europe (digital culture) and in Strategy for new competences and jobs.

“Opening Up education” the main program of the strategy specifically devoted to higher education puts the use of ICT at the center of the evolution of university education and bases its actions on incentives to use and develop ICT; actions have evolved, it is no longer about distance or mixed education but about open educational resources (OER) and MOOC. Thus, the program offers the provision of digital competences to all actors of the educational system and supports the development and the use of OER.

Although it answers students’ expectations through individualization of education and an attempt for flexibility, the deficiencies of the program are manifold:

- weak adequation between the education offer and the demand for professional competences coming from the economy;
- still limited access to university education;
- high dropout rate;
- difficulty to find a funding able to fulfill universities’ needs.

Europe has always maintained a leading role in activating member states’ political agenda in favour of ICT inclusion in higher education. Forms have varied and if the illusion of an Eldorado of a new education market has vanished, to be replaced by the “free” world, the new orientation in favour of digital education is none the less a challenge since the development of digital pedagogy is at the heart of the institution. Is this really possible? Are certain university ecosystems more apt to operate this change than others? Which evolutions can one observe?

***Four countries – four paths in digital policies***

The report offers detailed analyses of the four partner countries, citing policies, state and otherwise funded programs and their successes and/or failures. The main outcome of the survey is that no generalization is possible. While all policies can be categorized within the general trends of the digital transformation, the dynamic of each higher education system puts different actors at the centre, according to the general logics of the systems. The survey revealed that an action touching the very heart of the system (teaching in universities) cannot be translated in the same way in countries where university systems remain very different. Many policies have been implemented since the development referential in favour of the “information society” was adopted, but their objectives, means and agendas, often being very dissimilar have been delayed.

One can observe a few constants: whilst investment in equipment and the digitalisation of university management are abundant, policies tackling the digital culture and introducing digital technologies in the teaching process are much rarer and more unstable. While computers and the internet are omnipresent in the universities, it would seem that the idea of students as “digital natives” having no need to receive an education in this new media and the ever ICT reluctant teachers (with the exception of a few pioneers). They are made guilty of not producing the educational digital resources in large numbers and not designing enough educational devices based on ICT. The priority sectors are different as are the strategies of institutional transformation.

The configuration of the different actors also differs from one state to the other (the place of the local or regional actors, intervention of the actors or private capital, the use or not of specialised institutions in the teaching professions at distance or EICT…).

For France, as the State is the omnipresent actor, and funding is dependent on government directives, the D-TRANSFORM identified as its main partners for its leadership school program the Minister in charge of Higher Education and Research, the Conference of University Presidents, head of TICE at each university and the persons identified by the COMUE.

Regarding Italy, where Universities enjoy relative autonomy the CRUI should meet with a number of "leading universities", medium sized universities interested in the subject and a few distance universities. It also appears to be necessary to encourage public/private partnerships.

For Spain, where there are non-state trio of main actors (Catalonia, Telefónica, Santander), it is indispensable to join together these actors from the private sector (in the form of non profit foundations), a few key institutions (like the UNED and the OUC) and the presidents conference.

For the United Kingdom, it would be suitable to benefit from the expertise of specialised universities such as the Open University, the JISC and the HEA. It is indispensable to have representatives of the ministerial bodies in charge of universities from England, Scotland and Wales to be able to affect any change.

These conclusions support the idea that, despite a certain level of "Europeanisation" of the university systems, the higher education is partially closed to the logic of convergence (Radaelli 2004). Thus whilst on a general political level, the referential of the importance of transforming university teaching with ICT is well shared, the observation of the policies bear witness to clear differences. Applied to teaching resources, there is not a good or a bad model of production and usage, valid for all European universities, but rather the necessity for each country to form a long term economic institutional model liable to raise the most broad based support. The questions surrounding the economic model and the new forms of digital teaching (OER and MOOC) allow us to identify, country by country, the form of economic model and the major lines of this digital teaching.

**Business models for opening up education**

Subtitled as Sustainability of MOOCs, OER and related online education approaches in higher education in Europe, this report written by Paul Bacsich, published in April 2016 is designed to provide guidance for senior managers in higher education institutions, mainly in four Member States of the EU – France, Italy, Spain and UK – when they come to consider whether to deploy MOOCs and related approaches, and how to justify such decisions in terms of business models and strategic relevance.

There is a focus on public sector institutions, but the full range of university provision is considered, including the open universities and innovative private providers of higher education. In order to give the work the widest possible relevance to Europe, three other European countries are looked at (Hungary, Ireland and and Belgium Francophone Community) and guidelines given so that readers can research information for their own countries in order to create relevant business models.

The report looks in detail at business models for US-based MOOC aggregators such as Udacity and Coursera, but with the focus on lessons that can be adapted for the European scene. This differs in several ways from the US, including on accreditation issues. It also draws insights from the range of OER, MOOC and online learning developments across Europe.

***Massive Open Online Course (MOOC)***

Many Member States still have very little activity in MOOCs, but some do have substantial activity, including UK, France and Spain. Apart from France and currently Netherlands, few other Member States have policies and funding to foster MOOCs. Yet MOOC activity is often at a much higher level than can be justified by the university mission and the viability of MOOC business models.

At European level, it is hard to discern the priority that MOOCs have in specific policy terms. There is some EU funding for MOOC implementation, but less than 10 well-known projects and the total number of learning hours delivered by MOOCs in a country is a tiny fraction of overall study hours and usually a small fraction of the study hours delivered by Distance Online Learning (DOL).

The two main MOOC business models are freemium, where everything that really makes the course valuable to learners is paid for by them; and loss-leader, where the institution recovers its costs through increased income on other activities fostered by the MOOCs. Over the years since MOOCs started, the freemium model has been under great pressure. The loss-leader model is most fully developed within the UK.

There is a third business model – civic role – of interest to these institutions expected to have a social mission to the community or the world, and well-funded. A fourth model – hovering – suggests focus on MOOCs while awaiting the return of better market conditions or increased government support of DOL. MOOC aggregators have an additional model, third party – selling student data.

The business models for MOOCs become considerably more feasible if institutions extend "HE" to include elements of vocational and professional training and also if a provider offers a certificate which has an ECTS transfer value but which is not itself for an accredited institution/course.

***Distance Online Learning (DOL)***

Only a minority of Member States have substantial broadly-based activity in DOL – these include UK, France, Spain and Sweden. A few others have an effective open university or other specialised DOL provider or small group of DOL-active campus HEIs. Apart from France, no Member State has a clear policy to foster DOL. Indeed in some Member States, HE policy is a clear inhibitor to DOL (UK, Ireland, NL).

At European level, there have been several reports on open, distance and lifelong learning but little sign of the reports influencing Member State or institutional behaviours. Even in countries where DOL is active the total number of learning hours delivered by DOL in a country is a small fraction of that from face-to-face.

In a few Member States (neoliberal and speaking a global language), there is a viable business model for DOL. When fees can be close to the economic level and there are no restrictions on student numbers, then each new student is worth having. The model can be made to work even better when the state allows students to draw down a loan for study (UK/England; US – and also for approved private providers). Despite appearances, venture capitalists are most interested in this model, either setting up new private providers, or partnering with existing public providers. This does not mean that it is easy to make money from such arrangements, especially in Europe – though a few providers such as Laureate or RDI (part of Capella) have done useful amounts of business in Europe.

Interestingly, unlike for MOOCs, there are very few developments to flex the business model, beyond various monthly payment schemes.

If there are restrictions on student numbers in theory, it may turn out in practice that due to local factors an HEI may be under its quota (perhaps because it was set in more prosperous times); or that the HEI can lobby its government to have its quota increased; or that in reality there is no quota for part-time or DOL students because the government wants (discreetly) to encourage them.

In a number of countries where higher education is free (for full-time students) it is possible to charge fees to part-time distance learning students (Ireland, France etc). However the fees are not usually high enough to provide a viable business model – unless drastic simplifications are made in the mode of provision – leading down the road of using MOOCs.

***Open Educational Resource (OER)***

In Europe, there is as yet no viable business model for OER in HE. The North American Open Textbook model, which has begun to work in the US and Canada, has not got started in EU. Reducing the "course" focus typical of MOOCs to a "resource" focus typical of OER makes the business case harder, not easier. Some large institutions claim that the loss leader approach works but evidence is scanty.

Most Member States have some activity in OER in HE, though in some countries activity levels have declined since the period of active state funding (e.g. in UK and Netherlands). In the time of the publishing of the report - with the notable exception of France - few Member States have an ongoing policy to foster and fund OER in HE.

At European level, OER seems to be getting less attention than Open Access and MOOCs. OER material directly specified/developed/curated by the institution forms on the whole a very small fraction of the amount of content a typical student is required to consume – even in open universities.

**Open Educational Resource, a lever for digital transition of higher education?**

Easy access to educational content for the largest number is deeply rooted in our European history. The question of freely available digital open educational resources (OER) has nonetheless been a particular point of focus in the last ten years for various countries and also for international institutions, particularly in Europe. The production and diffusion of these resources have taken different aspects. They have either taken the form of "reservoirs" of educational resources whose location and access need to be facilitated, or the form of structured and rhythmic training modules comprised of classes, exercises, discussion forums, and evaluations, as is the case with on line education programs and Mooc. Whatever the form, two principles underlie this process: education for all as it is defended by UNESCO and "free", "open", "collaborative", "coproduction" practices etc. carried by the web world for the sake of greater agility and global efficiency.

The media have reflected some great successes, even presenting MOOC as "the" lever for a radical transformation of educational patterns and for a better universal access to knowledge. Firm recommendations have been edicted at national and international level, efforts to mutualise actions have been launched, OER are now included in the field of digital public policies (see our Public Digital Policies in Higher Education – A comparative survey between Spain, France, Italy and the United Kingdom).

Has this mobilization around OER borne fruit in terms of a wider access to knowledge for all? Facing a dual trend of commoditization and opening up of education at world level, are OER an instrument of domination or a tool of equal opportunities and diversity? Is the trend towards sharing maximum resources or rather towards a contextualized and private usage?

Furthermore, will the development of OER lead to an innovation and a transformation of our educational systems linked with the digital evolution of our economy, our society and our culture? What place should it consequently be given to mobilize and educate "leaders" of our systems and institutions?

In the third report published in April 2016 the D-TRANSFORM experts set out to answer these questions, by a qualitative survey of 14 higher education institutions in France, the United Kingdom, Italy and Spain, comparing the results with the field's literature.

The main outcomes from our survey show that despite many reminders from UNESCO or OECD, the establishments did not massively opt for OER. OER production remains essentially linked to public funding, European or international projects. According to the D-TRANSFORM survey, the improvement (in notoriety or cost rationalization for instance) arising from OER production outside such projects does not seem to be fully perceived, as the opening of educational resources remains little rewarded within establishments. Moreover copyright policies are diverse and little known (apart from Creative Commons licenses) and end up in most cases with teachers keeping their ownership.

Various elements collected both theoretically and empirically, confirm that although OER have not yet succeeded in playing the role of a tool for digital transformation in higher educational establishments, it has helped to raise awareness of the potential benefits of distance education. For the moment these developments do not necessarily stem from the establishments' internal strategy but rather from a concern not to "miss out" on something.

The survey found that the nomination of vice-presidents or vice-rectors in charge of digital affairs is an essential element in the recognition of the importance of the digital field in the transformation of higher education. However the depth of future changes implies that the whole governance is aware of the actions needed and feels committed, each in their own field of competence.

The challenge of open on line resources for education is the overall increase of competences in society, a faster transfer of innovation and research, a strengthening of the equality of opportunities whatever the social or geographic background. More than a simple digital transformation in universities, this is a transition, because the university model must change from an "elitist" to an "education for all" system enabling a lifelong education of the widest number of individuals. Digital technologies and openness are reshaping universities; the main issue is that it is not known how and at what speed. Without even realizing it completely, universities are currently being surrounded, penetrated and reshaped by MOOC and more precisely by open as well as by the competition from other national and international universities. The universities adapt to this new situation without questioning the future, essentially because in a world with multiple uncertainties that is constantly redefining itself, it is difficult to make forecasts. Combining short term considerations (rapidly changing matters such as technology and the evolution of professional knowledge requirements for which universities must prepare…) and long term considerations (the time required to implement training, create buildings and achieve cultural appropriation by teachers...), to adapt to the emerging social practices and to the "*uberisation"* of our society makes an agile governance indispensable. In this ever changing environment, universities must both preserve their underlying essential values and remain up to date with an ever-evolving society. Therefore agile governance and to a certain extent *user centric design* are key factors of the digital transition.

For OER to really find their place, a stronger collaboration is necessary between users (establishments, staff, learners) and partners (economic and social ecosystem…). The time has come for better integration of training transformation and digital transition in the overall strategies of establishments. It is in this context that the commitment of establishments' governance becomes crucial and especially the commitment of the rectors, directors and presidents of the institutions. OER and MOOC are steps in the digital transition process within our society and our establishments. The field is open, it is essential that digital transition takes place. The world of education is becoming competitive and it is not only a matter of attracting students but also keeping students who could be

tempted to study elsewhere. Emerging countries are producing OER and on line training and are actors in this newly redesigned landscape in which our universities need to be both universal and specific.

Beyond the obvious contextual differences, it is important to combine our efforts at a European level to create value, reference and initiatives. Digital transition will undoubtedly be at the heart of the new Bologna process.

**Conclusions and resources**

The presence of Open University in three out of four partner countries as well as the diversity of university models (public/private, free/ high tuition fees, MOOC national platform or not, etc.) gives a context to our relationship with digital education and with the open and cannot be ignored. However there are certain common factors such as the necessity for agile governance and its undivided commitment to digital transition, in collaboration with the actors and the education ecosystem whilst keeping in mind the construction of the European space for education and research.

It has already been indicated on more than one occasion, that the digital culture of governing bodies is essential for a successful digital transition in education, because these governing bodies will define and drive the transformation strategies of their establishments. In particular, information about digital trends, gathering the most promising experimentations, knowledge of future users and their typical practices, in-depth awareness of the new demands of the professional world – these are all key factors for defining a strategic vision and developing an action plan to implement that vision.

The D-TRANSFORM project adapted its two leadership schools organized in November 2016 in Barcelona, Spain and in May 2017 in Nancy, France to the realities observed in the various university environments. Both visionary and pragmatic, “leadership schools” brought enlightened support to governance, able to anticipate whilst remaining anchored in reality, helping to shape tomorrow’s university without renouncing its fundamental values.

The ***Guidelines for governance of HE institutions*** (published November 2016), as well as the previous reports, reveals the themes that are crucial, enabling enlightened governance that is suited to today’s challenges.

The ***D-TRANSFORM MOOC on Digital resources as catalyst for change in university*** launched in May 2017 (and freely available until 2020, hosted by the Politecnico di Milano – METID) also aimed at raising awareness of digital resources, and especially OER and MOOCs, as a strategic factor for university transformation, with a special focus on teaching and learning processes. In addition to that, the course promotes executive reflection on hands-on challenges and offers networking opportunities in a non-formal context, targeting university rectors, vice-rectors, rector’s delegates for e-learning, rector’s delegates for university third mission, deans of faculties, directors of operational units in higher education institutions and anybody interested in the digital strategy of universities.

All above reports are available to download in English and in French on the D-TRANSFORM website, where you can access the MOOC as well.

http://www.dtransform.eu/resources/guidelines-and-reports/

http://www.dtransform.eu/resources/mooc/

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# 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.

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## 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.

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**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).

**Claudio DONDI**

# AFTER THE EDEN GENOA 2018 CONFERENCE: SUGGESTING A NEW RELEVANCE FRONTEER

The EDEN Annual Conference in Genoa was an enriching event, both because the presentations which were stimulating as usual, and, even more importantly, because it allowed to review the state of an always vibrant community of people who never give up to devote their academic and professional lives to what they believe is the future of education and lifelong learning.

Having spent a lot of my professional life within the EDEN community, I fully sympathise with this attitude, but, having spent the last four years in the world of what we may call "mainstream education", I have to recognise that "our" view of the world of education is still considered extravagant, if not openly heretic, by the majority of education authorities, teachers, parents and probably also students.

The fact is not that the "mainstream education" does not see the challenges and the change that is occurring in society, but the key strategy to face change is considered to be the updating of taught contents and the standardisation of learning outcomes, while using more or less the same teaching, evaluation and organisation processes, if necessary supported by technological devices.

The questions of learning methods, central role of learners, open-endedness of learning programmes, shift in the assessment and credentialisation methods are frequent in the research agenda and in the international policy debate on education innovation, but, when it comes to actual decision making, the focus is on contents of curriculum, qualifications, standard testing, accreditation, ranking and funding.

Even the School Resource Review conducted by OECD does not explicitly consider the role of open, distance, eLearning and methodological/technological innovation in the "resources review of school systems".

Where is the problem? Are we not able to explain what we have been seeing and doing for thirty years or is the "mainstream education" unable to understand the need for a deep change?

The resistance to change of education systems has been analysed several times and identified as one of the key obstacles to the widespread adoption of innovation, but **my point here is that our community also risks to be "stuck in the middle"** as the title of a brilliant paper in the conference was saying. We, "the Innovators", see a new development in technology or society and warmly embrace it to explore its potential in education systems, we create sub-communities of "specialists of the new", launch some EU projects on the subject and predict that education will never be the same again after the generalized adoption of this new development. This might be true in principle, but the fact is that generalized adoption in mainstream education never took place: most of the predictions we were reading and writing twenty years ago look very naive when we read them again now, when picking up our children from school.

The fact that technology devices are part of every day's life and are present in education establishments is not the result of "our" battles for innovation, but the consequence of exogenous developments in a "digital world"; education does not use but a very small part of ICT potential for "educational change" purposes. Out of the institutional education systems quick evolution of learning habits is easy to observe, but **should we simply accept that school and university are deemed to become obsolete because they are unable to change their key processes and to cope with major change?**

I believe that we should not accept obsolescence of education systems and rather try to organise evidence and support to produce significant change at system level: the impact of technology in the world of learning is too important to be left in the hands of education authorities, but also to be left to market forces without a "public good" inspiration, guaranteeing equity and quality together with innovation.

In my view EDEN should pick up the role of showing how the different societal challenges that affect education can be better addressed when the full range of innovations available is considered, how the many apparent and "classic" dichotomies that define the scope of education policies (e.g. excellence vs equity, specialisation vs critical thinking, standards vs individual talent, open access vs remuneration of investment, regulated vs. informal, etc) can all be rethought when a full picture of innovation in education is built and an "out-of-the-box" perspective is adopted, focused on what society expects from education rather than what has always been done.

During the Genoa Conference it was clear that the innovators community continues to explore new developments, shows vitalism and dedication to its cause, but I perceived a risk of fragmentation on different separated priorities and self-referential syndrome this year, that made me appear negative to some when I presented the Conference general report in the last plenary.

Perceiving and signalling a risk is, in my view, the most positive contribution one could do; in any case to clarify thoughts in the following paragraphs and to make some "positive" proposals.

- The Conference plenaries and several parallel sessions contained, coherently with the EDEN tradition, very stimulating and provoking statements on the change that is affecting the world and would probably affect education in the near future; unfortunately almost all speakers were in substantial agreement with this idea, very few voices were challenging the main thesis (that education will go through a very substantial change in a matter of few years).
- Several parallel sessions were presenting, more modestly, the results of projects undertaken some time ago to explore the potential of alternative ways to organise, assess, document learning process and achievements: they were interesting, but apparently satisfied with their small scale of operation and modest relevance at system level.
- The issue of "mainstreaming innovation" in view of addressing the main challenges of society was only partially addressed in one parallel session, that rightly pointed out the gap between a project-based innovation "reserve" –typically represented by ERASMUS PLUS and HORIZON 2020- and a "business-as-usual attitude" by decision making bodies in the world of education. The inefficiency of small projects to vehicle major innovative developments was stated, but new instruments are not easily available.
- A certain fragmentation of the participants groups into "thematic parties", sometimes in opposition to one another, was for me a curious new development, recalling the well-known phenomenon of stratification of innovation waves, through which innovators of a previous generation become conservative towards innovators of a more recent generation; in this way the possibility of synergies and a system view is lost through this juxtaposition.

**Loosing a sense of direction and reproducing the same dynamics of multiple starts without a substantial impact on the education systems appeared as two relevant risks.** The paradox is that within the EDEN community many people are gathered, who strive for good education and understand how technology and methodological innovation can help facing new challenges, but they are, as a community, only moderately effective in influencing policy and mainstream education practice.

In order to improve this situation, and to put the professional community in the conditions to play an even more active role in promoting education innovation – a role that I believe it deserves - my recommendations are the following:

- Systematically invite “mainstream education” decision makers and stakeholders to intervene in major European events, listen and argue with us if they are not convinced by our thesis: understanding their points and trying to challenge them will help us to find our way into mainstream.
- Try to build, with the precious help of the EDEN Fellows and in collaboration with the competent international institutions (EIT, ILO, IPTS), a system view in which older and newer innovation ideas concur to define a new vision of how education and lifelong learning should look like to face the challenges of our society. This system view might become a reference to link different groups of education innovators and a visible target for public policies to come. The centrality of learner and the competence to learn in a self-regulated way should be the hub-concept on which to articulate the set of innovative ideas and solutions that technology can help to make possible for all, inclusive within the formal education world.
- Establish a better connection between “the visionnaires” and the crowd of “grassroots innovators” in the EDEN community, to make the first group more realistic and the second more ambitious: at the moment they seem to play on different grounds, while their synergy may reveal to be very effective to assess the potential of innovative ideas and spread them across the education systems in a combined bottom-up and top-down dynamics.
- Advocate for a different generation of (EU and national) policy instruments able to collect the results of similar/complementary pilot projects and to upscale them into widespread practice in education systems.

I am convinced that these concrete steps would contribute to make relevance and impact the core criteria for success in the next years, and I propose them for internal debate within our community.

**Krisztina MIHALYI, Ferenc TÁTRAI**

# Open Badges in Education and Training in Europe

## the Open Badge Network and ReOpen projects

### Introduction

The article gives an overview of open badges, a type of micro-credentials spreading lately in Europe applied to recognize non-formal and informal learning actions and outcomes. Open badges are viewed by many experts as the greatest potential for a reliable presentation of skills gained outside the formal education system, in many cases in adult learning. Specifically, open badges very often record and prove the acquisition of so called 21st century skills (i.e. communication, creativity, cooperation and critical thinking) considered by a large majority of the employers as a significant aspect of selection.

*What exactly digital open badges are? How, by whom and to whom are they awarded? How is the validity of information and the quality of content represented by the badges assured? To what extent are the employers aware of the value of open badges, and how much individuals know how they can capitalize on the collection of their badges?*

The article attempts to offer some views on the above questions by structuring the relevant findings and outcomes of the Open Badge Network and the ReOpen projects.

### The open badge movement

#### *Shift in the learning system: new forms of recognition are needed*

The world is experiencing a major shift in the learning system. Learners develop their skills and competences in a variety of learning environments, and not only in the context of formal education (for example schools and universities). Economists of innovation recognise knowledge, and therefore learning, as the most important resource in today's society. However, the formal education system seems unable to cope with these rapid societal changes. Companies and institutions struggle to find the appropriate skills for their job vacancies, and at the same time individual learners lack tools for certifying the whole set of capacities and experiences that they own, very often gained outside the formal education and training system. The previous forms of recognition of learning are becoming obsolete, and so are the referencing definitions and taxonomies related to education and training. *The Open Badge system tries to address these issues by providing a flexible and adaptive technology of certification of competences, which could be potentially applied to all learning environments.*

However, in order to become widely recognised as a credible certification method, open badges must resolve some critical issues, which still represent a source of debate among experts. These are related to the *reliability, validity and quality of the credentialing with open badges.*

#### *Concept of open badges and the open badge ecosystem*

*What are open badges?*

An open badge, a novel form of digital credential consists of a badge image connected with a set of meta data - reflecting the collection of knowledge, skills, values and attitudes (in short: competences) an individual has acquired and/or is able to demonstrate after completion of a learning process. In most cases the learning process takes place in an open non-formal or in informal learning environment. It can attest a one-time or reoccurring participation at events (workshop, short-term

training, conference, webinar etc.) both as participant or as a facilitator, speaker. Other type of badges may be issued to certify the attendance or completion of a course, which may take place again in a non-formal or even in formal circumstances.

*Badges- what for?*
Badges can be designed for practically anything, e.g. for:

- interest and engagement;
- attendance or participation;
- membership;
- knowledge or dispositions;
- formal certification (degrees, certificates);
- learning, achievement of skill or competency on various levels of proficiency;
- affiliation;
- project-complete;
- credential.

Badges that exist only in digital form are called digital badges. The idea of digital badges is a relatively recent development drawn from research into gamification[1]. As game elements, digital badges have been used by organizations such as Foursquare and Huffington Post to reward users for accomplishing certain tasks.[2]

In 2010 education providers began viewing digital badges not as game like elements but also as tools to certify learning achievements. Examples of instructional sites using digital badging systems include P2PU and Khan Academy.

Digital badges can be created and issued by anyone: schools, individuals, online spaces, cultural and civic institutions, community and professional organizations. Digital badges are now widely used in education.

*Why do we use badges in education?*
Knowledge and skills should be recognized throughout learning. Digital badges are symbolic (visual) representations of an accomplishment, skill, quality or interest that can be easily shared and communicated across contexts such as academic and work-related contexts (Knight, Erin & Casilli, Carla (2012). Digital badges are *image files available online*, contain metadata including *links* to help e*xplaining the context, the meaning, the process* how they were earned as well as *the result of the activity*. In a concise form, a digital badge is an online visual representation of a skill someone has earned. Application of digital badges is a new form of digital credentialing primarily in open non-formal learning, although there are also attempts to use digital badges in formal education as well.

The learner can acquire knowledge and skills from various sources and in various ways, from attending a training institution, through online learning or just taking part in volunteering. If these achievements are awarded by open digital badges, these badges can be collected, stored and displayed in his/her Badge Backpack. The Badge Backpack is a digital tool to store/display the Open Badges someone has earned, and makes it easy to share them between platforms, anywhere on the web.

[1] https://en.wikipedia.org/wiki/Digital_badge
[2] https://en.wikipedia.org/wiki/Gamification

The badges collected in the Badge Backpack can then be uploaded to his/her personal website, or to various social media channels like Facebook, Twitter, etc. These appearances in the digital space might unlock new possibilities, new job opportunities or might clear the way to lifelong learning.

*Digital badge ecosystem*

The actors of the badging process (learners, training providers, employers, accrediting organizations, elements of the technical background) and their connections form the **digital badge ecosystem** sometimes called ecosphere or badgeosphere.

Badges are usually *issued* by some kind of a learning provider, which can be both an individual or – more often – an organization and are awarded/issued to the badge *earner*. Earners are - in most cases – individuals who completed a learning action (participated at an event, completed a course etc.), but in special cases earners can be organizations, which are certified, quality assured from a specific aspect (e.g.: being a high quality training provider).

A **badge issuer**, the learning experience provider, defines, creates and assesses learning achievements and competencies, through the badges they issue (Everhart et al., 2016). Badge issuer can be any individual or organization offering educational programme, after-school programme, online course or open courseware, community of practice, professional association, teacher, tutor, coach etc.

After the badge issuer defines the criteria the learner or user needs to meet in order to receive the badge, and establishes the processes and infrastructure for issuing badges, the process of badge delivery can begin. Every user or learner who satisfies the criteria is a **badge earner**. The learner might accept the badge, but also have the right to decide not to share it further. In the simplest case the offer is sent to the learner's e-mail address identifying the **earner**.

The earned badge than can be stored in the individual's *backpack* (with all other badges previously acquired) and then displayed at different platforms for **viewers/consumers**, who are interested in earner's accomplishments.

The individual can display different badges in different locations, depending on what skills and knowledge are important to the prospective **viewer/consumer**, usually employers and administrators of education institutions. After the badge is displayed, the badge **viewers/consumers** can easily access the details and find more information about the badge such as badge description, issuer, criteria, etc. The **viewer/consumer** should be able to check the identity of the **issuer**, the **earner** and the evidence behind the badge. This property of the badge is powerful and has the potential to change the credential system.

The badges earned are then placed in the "backpack" of the earners, where the image and the meta-data of the badges are kept and can be viewed by the *viewers/consumers*, who are usually employers interested in the qualities of an applicant. The "backpack" is a platform of presenting the collected badges, it is a *displayer* of the badge items. There are several different displayers in the market (Mozilla Backpack, Open Badge passport etc.) as well as there are more than one *developer* platforms (Open Badge Factory, Open Badge Academy) where the badges can be created by the issuers.

One of the questions in focus of the debates about open badges addresses the issue of credibility. Why should one trust a badge? How can we now be sure that the information behind the badge is valid, and that it certifies high quality standard. One answer to this question is the evolution of the endorser role in the badge ecosystem. The idea of the endorser is to bring quality assurance in the badge system, by certifying that the badge issuer is trustable and information behind the badge represent real value.

Although, endorsers in the badge system may strengthen the credibility of the badging these type of actors are not yet widespread in the badge ecosystems.

Endorsement adds a layer of external validation that further supplements a badge's metadata and can help earners to understand which badges might have greater social or professional currency, leading them toward greater personal or professional satisfaction.[3] Organizations, who examine and acknowledge the value inherent in badges, can clearly recognize and publicly acknowledge their values through badge endorsement and indicate their conceptual alignment with external organizations are **badge endorsers** (Everhart et al., 2016). Endorsement is a novelty (IMS Global Learning Consortium introduced it in December 2016) and has the potential to change how badges are used, understood, and trusted. Shortly after digital badges were introduced, there was a discussion among digital badge specialists about how to "badge the badger", in order to give badges greater credibility. The concept of badge endorsement is in operationalization of this and can significantly improve the process of recognition of learning.

The relationship among the actors of the digital badge ecosystem can be represented by the following scheme.

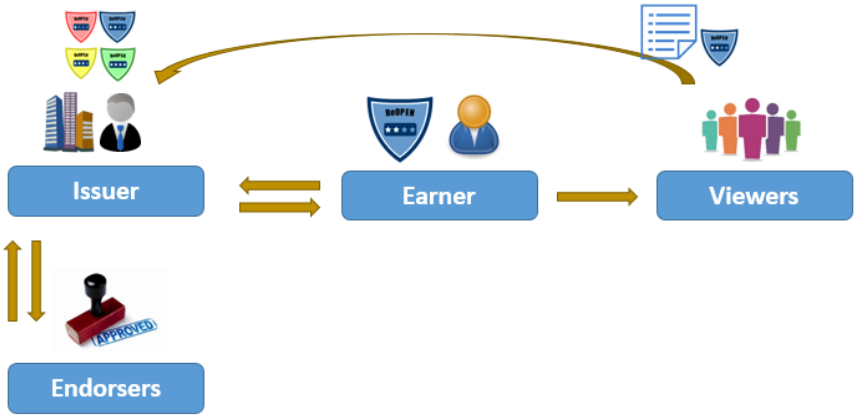



Figure 1. The Open Badge ecosystem[4]

From the description above we can summarise the key actors of the digital badge ecosystem as:[5]

- **Issuer**: the entity creating, issuing, and awarding badges to earners (e.g., educational institutions, government agencies, employers).
- **Earner/recipient**: the learner, the person receiving the badge (usually identified by an e-mail address).
- **Viewer/Consumer**: the person or institution who/that views someone's badges and evaluates their value, possibly deciding whether the person having the badge is qualified for the post or for enrolling into the course in question.
- **Endorser**: mostly used in case of badges credentialing skills in which the possession of the skill should be verified by others (or other institutions) who/that undoubtedly has competence to do so. Sometimes used for the entity that evaluates the badge holder's skills and knowledge demonstrated by her/his badges. Endorsement ….allows third-party organizations to publicly indicate which badges are aligned with their values — those that are the most meaningful and useful to them. It adds a new metadata component to the Open

[3] http://www.badgealliance.org/glossary
[4] https://slideplayer.com/slide/13443411/
[5] http://www.learningoutcomeassessment.org/documents/Assessment_in_Practice_Digital_Badges.pdf

Badges standard and defines the structure for rich, well-defined endorsement information and criteria such as alignment with standards, uses for the badge in the context of the endorsing organization, description of evidence of learning and assessment techniques the organization values[6]

Processes in the Open Badge ecosystem are supported by:

- Developers: individuals or groups creating applications that are used for design and issuing of badges (e.g. Mozilla Open Badges, Passport, Open Badge Designer, Badgecraft, Moodle, etc.)
- Displayer: the system used for badge verification and display (e.g. Mozilla Backpack, Facebook, LinkedIn, e-Portfolios, Passport).

*Meta-data of open badges*
To understand what is behind the image of the badge, what specific achievement it certifies one should look into the badge attributes, called metadata of the badge.

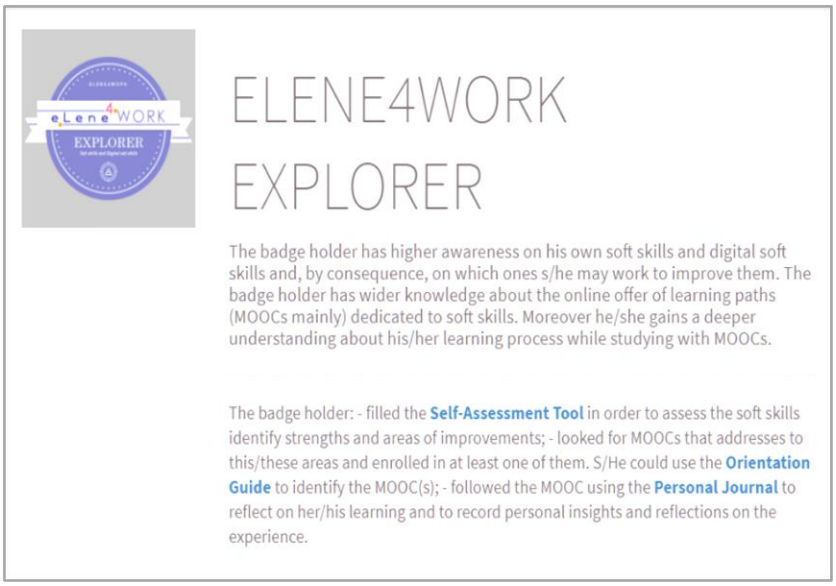
The badge attributes, i.e. badge's description and criteria are inseparable part of the badge. The following details have to be defined and included during development of a new digital badge[7]:

| **Badge Details** | |
|---|---|
| Name | Badge name should be short and the content of the achievement should be easily understandable. |
| Description | Description should provide the details of achievement: describes the context, specifies the achievement, refers to completed tasks, and explains the assessment procedures. Useful tips on how to write a good badge description are available here[8]. |
| Image | In a process of preparing the image, one should bear in mind that image will be the main representation of the badge. It should be simple, without too many details but still interesting enough for someone to see the rest of the information. |
| **Issuer Details** | |
| Name | Name of the issuer is a name of the individual, entity, or organization that issued the badge. |
| Contact | Issuer's contact information. |
| **Badge Expiry** | |
| Expiry Date | This is the information about the expiry date of the badge if there is one. Options are: never, fixed data, relative date. This date is usually set for certificates that need to be re-accredited after a period of time. |
| **Criteria and resources** | |
| Criteria | Criteria provides information about the task needed to be completed by badge earner to receive a badge. There are several options, among others:<br>• manual completion by role: if using this option, we have to choose the role we want to be able to award the badge;<br>• course completion: for using this option, tracking must be enabled for the course;<br>• activity completion: like for the previous option, the course tracking must be enabled.<br>The selected criteria will be displayed among all the other digital badge data. In Moodle, for instance it means that all activities connected to the badge will be displayed. If you want to control what is displayed, use Access restrictions and Activity completion so that all other activities will lead to the one that the badge will depend on. |

[6] http://www.badgealliance.org/endorsement/
[7] http://reopen.eu/learn/course/view.php?id=3
[8] https://www.badgecraft.eu/en/open-badges/understand-badge-meta-data/howto-write-description

For illustration the image below shows the meta-data behind the eLene4work project explore badge.

Text highlighted bold are hyperlinked to the resources connected to the learning activity.




The actual badge can be viewed at the following link: **Elene4Work Explorer badge**

Besides reflecting the learning outcomes, the badge gives information about the open non-formal learning activity / course provider and about the activity itself. The information about what the badge incorporates is presented in the meta data of the specific badge which provides ground for the quality assurance of this type of certification.

*Badge examples –EDEN badges*

The European Distance and E-learning Network (EDEN) is a forerunner in issuing badges attesting conference, workshops, trainings, webinars facilitation and participation. Since 2015 EDEN issued nearly 3.000 open badges. Below we show some examples of badges issued by EDEN in 2017.

| EDEN Annual 2017 *Participant* | EDEN NAP webinar *Facilitator* | EDEN Open Classroom Conference *Speaker* |
|---|---|---|
|  |  |  |





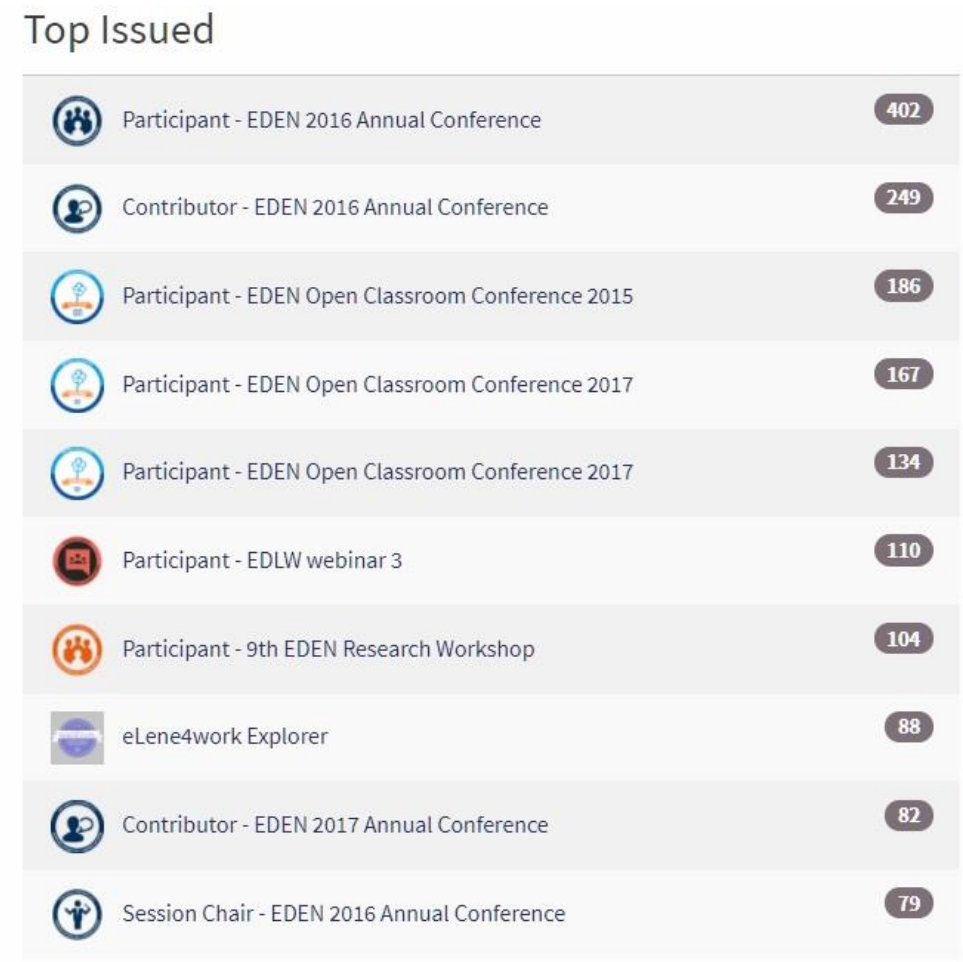


Badges can certify a continuous piling of learning, in other words stacking the learning activities/outcomes. For example attendance of several number of webinars organized during the European Distance Learning Week is attested by gold, silver or bronze badges certifying the presence at five, four, or three virtual event respectively. This nature of badges is referred to as stackability and has importance in the motivation of the learners.

| EDLW 2017 participant – GOLD | EDLW 2017 participant – SILVER | EDLW 2017 participant – BRONZE |
|---|---|---|
|  |  |  |



The top 10 badges issued were the following:




**Values of and risks related to the application of open badges**

***Values for individuals***

Individual users may benefit from earning Open Badges in various ways, in their education, in their work life and in their leisure activities. The recognition of soft skills, prior learning and abilities developed in informal and non-formal environments may increase employability and acknowledgement of skills by the employers, while also facilitating introduction into new working

places and positions. Students may add this set of credentials to their resumes at the end of a degree and be recognised for their extra-curricular activities. Open Badges may also help transform talents and passions into actual competences and therefore open new job opportunities. Individuals can gain control over their education pathway and easily compose and display their digital resume on the web, collecting Open Badges they earned from different sources (schools, online courses, external organisation).

Open Badges may find useful applications also in the context of promotion of citizenship and social integration, for example in the case of recognition of skills of migrant workers or academics. Citizens may be rewarded with Open Badges for the activities within their community, which would in return increase the group cohesion and their sense of belonging.

However, individuals will play an important role in the future of Open Badges also as designers and issuers. The Open Badges technology is free and relatively easy to access, which gives a chance to independent communities of learners to develop and award their own set of Open Badges, using their own criteria and competency frameworks. However, an opposite view argues that this could carry some risks. Individual issuers can use Open Badges to provide organisations and institutions with suggestions and benchmark their needs. Innovative and responsive organisations will build systems of Open Badges that consider contributions from a grassroots level. In general, the response of the final consumers of Open Badges is fundamental to reach the critical mass for the technology to be widely recognised. Beside this, in the paper, we discuss how the “value” of a single Open Badge is closely related to the users’ perspective and to the establishment of networks of trust among Open Badge issuers, earners, companies, institutions and education providers. The “endorsement” feature contributes to achieving this result by enabling Open Badges to be peer-reviewed. The future of Open Badge will depend on the engagement of the whole community, including individual users, in the construction of value and trust.

“What is the value of Open Badges?” might be the most frequently asked question, when introducing Open Badges to a new audience. Similar to paper certificates, this is not at all catered for automatically. The value of different Open Badges will vary enormously depending on a number of issues, just as diplomas from different organisations may have different values to different audiences. For example, a diploma from the University of Cambridge is appreciated more than a diploma from an ”average” university. A diploma of any legitimate university is infinitely worth more than a diploma from a so-called Diploma-Mill. (Diploma-Mills are shady businesses that produce impressive looking diplomas from non existing fake universities, that can be bought through the internet). As soon as Open Badges become mainstream, one can expect Badge-Mills popping up too. Value and quality of an Open Badge come from the metadata embedded in the badge and depending on the complexity of evidence provided and assessment applied may be a more or less valuable way of proving a recognition or documentation of an achievement, skill, competency or any similar quality.

Carla Casilli (Casilli, C. 2015) identifies a spectrum of value as follows:

- institutional value - intended by the issuing institution;
- social value - recognised in academic, professional, cultural and community contexts;
- generic value - rooted in the desire for a standard currency;
- personal value - perceived by the earner;
- consumer value - attributed by the audience or the “market”,

These five different value types are described in relation to Open Badges below:

*Institutional value*
Institutions that design Open Badges and badge systems, have to invest time in doing that. There is no investment without the idea of creating value. This value can lie in the professional development of the staff. That starts often with charting the competences needed for different roles (if not already present, which is often the case). For the issuing institution, badges also create value, by enhancing an institution's reputation and visibility. Open Badges can be published on the institution's website and seen by a wider audience when shared by the earners. This creates an institutional value, for example in relation to image/reputation building or transparency/public relations of the issuing organisation.

*Social value*
Social value is related to group, community or society perception. Carla Casilli defines social value as follows : "The social value of a badge is complex. There are a number of ways that badges contain and contribute to social value, including: academic value; professional value; cultural value; and group value. I could probably write a few long paragraphs about each of these types of value but in the interests of brevity and because you're smart, try thinking through those on your own. Note, however, that somewhat perversely, the group value of badges appears to be the most underappreciated of all of the possible values. Considering that society is predicated on the concept of in-groupness and out-groupness, this under-appreciation always strikes me as odd. Badges are indicators of community and consequently carry the values that are related to the communities in which they circulate." (Casilli, Carla 2015) Clearly, the value of a badge system increases also through recognisability, which will be much larger within a local or regional territory.

*Generic value*
Open badges are a new "currency for learning" and in this way have a generic value as digital credentials. The value of Open Badges as a new currency is still evolving. Currently traditional (non-digital or paper credentials are perceived to have value and there seems to be a mutual acceptance of what traditional credentials really testify. The acceptance of traditional credentials is usually not based on a profound understanding about the level, quality and amount of the achievement certified by a traditional credential, but is based on social and psychological mechanisms in which evaluators use traditional credentials as shortcuts to tentatively estimate skills, competencies, achievements etc. For example, it is common to use traditional credentials such as academic diplomas, academic degrees, certifications or licenses for recruiting and employment decisions with recruiters/employers relying on the face value of a traditional credential and not questioning or investigating further what skills, competencies, achievements exactly are recognised or what type of assessment has taken place to issue the credential. This phenomenon is known as credentialism as has been extensively described in sociology (e.g. Collins, R. 1979). Open Badges offer an opportunity for a more transparent and information-richer recognition compared to traditional credentials as they may be designed in such a way as to inherently include the information about the what exactly is recognised, based on what criteria, following which assessment procedures, even including evidence and endorsements. Open Badges as information-rich, digital credentials should be therefore well able to achieve the same generic value as traditional credentials.

*Personal value*
Earning a badge can help a learner/earner get a more in-depth insight into gained skills, competencies, abilities etc., compared to traditional certificates, e.g. through transparent criteria for issuing a badge, evidence and endorsements. As such, there is already a great intrinsic value in earning an Open Badge. The learner/earner might not even have the need to share an Open Badge,

as receiving meaningful recognition may have a stronger personal than social value. There have been a number of discussion about the inflation of Open Badges and low-quality Open Badges. In the future, undoubtedly "spam"-badges will appear, but the "earners" of those low quality Open Badges without any personal value will not take the effort to share them with others and may not even be motivated to accept meaningless "spam" badges at all.

*Consumer value*

Consumer value is related to the intended or real audience of a credential. Carla Casilli states that this value can be thought of as the "market value" (Casilli, Carla 2015) or the effective total sum of all elements that define the value of a badge (reference). In order to have a high consumer value, an Open Badge should be self-explanatory, concise but complete and specific about learning outcomes certified with an Open Badge and the way they the outcomes such as knowledge, skills, competencies, achievements were assessed (or not). This aspect is also related to trust. The consumer (e. g. an employer with a job opening) should trust the that the issuer really is the one that is stated in the badge (also see the chapter "Technical aspects - data validation" in this paper), and that the information in the badge is correct or true. There have been discussions about the risk of fake Open Badges. This risk however is comparable to traditional credentials. It is possible to fake any credential - be it a traditional paper certificate (and there have been certainly practical examples of this) or possibly an Open Badge. However, Open Badges have built in mechanisms to minimise possible fraud (again see: "Technical aspects - data validation" in this paper) and further mechanisms may be integrated into the existing Open Badges standard to prevent faking a badge. This includes such security mechanisms as 128 bit encryption (e. g. eNetBadges[9]) or integration with the Blockchain[10], which are especially important and valuable for the so called "high-stakes" credentials such as formal education or industry certificates. In the end the consumer or market value of Open Badges seems to be a critical aspect that matters most, not only in case of high-stakes credentials: The consumer value determines what the badge can "buy" or "unlock" for its owner. Beyond the institutional, social, generic, personal and consumer values as described above, there are also more practical variables and factors that influence the value of an Open Badge.

***What are the risks of Open Badges for individuals?***

Some researchers see Open Badges as a disempowering tool for individuals. The 4 key points of concern about the role of digital credentials in education are the following: Open Badges are not scalable and therefore it is unlikely that they will become a "valuable" and "recognised" tool. Open Badges were conceived and created also in hope of providing communities of engaged learners with a tool for designing and crafting their own competency frameworks. The Open Badges created by these communities, however, will face serious issues of credibility and recognisability outside those communities. Because of the problems of interpretability and comparability, it is likely that the Open Badges that become widely recognised by recruiters, will be the ones using standardised competencies and assessment methods.

Open Badges are mostly used to recognise grained (high granularity) sets of competencies. This tendency will push learners towards the acquisition of single useful competencies and skills, at the expense of general, theoretical and critical knowledge, which might be less useful in the job market, but also provide the learners with the intellectual tools to interpret and process societal, political and economic mechanisms. Hence digital credentials would be unlikely to attest "powerful" knowledge.

Open Badges are the result of a more general trend of secondary and vocational education and training, which reflect the individualism, atomisation and consumerism of modern society. According

[9] *https://www.ecomscotland.com/products/enetbadges/*
[10] http://badgechain.com/innovations-in-open-badges-blockchain/

to this view, Open Badges would represent a commodification of learning, which will ultimately promote economic and market value over social and pedagogical value and that will empower leading economic organisations over academic institutions and learners' communities.

The last point is of economic nature. The value of the Open Badges in the credentialing market relies on their scarcity. If an Open Badge becomes too common, it will lose its value on the market.

Do Open Badges have negative effect on learning? Many scholars have questioned the usefulness of digital credentialing in education. While there are many examples that would suggest a positive effect on the learners' performances, some others indicate negative effects, such as motivation displacement. According to this view, external motivators, such as badges, tend to have a detrimental effect on individuals involved in learning activities: not only may they cause a lowering of performance levels, but also a decrease of interest and a diminishing of motivation for a given task in the future.

Considering that Open Badges can take as many forms as one could imagine, it would be indeed unreasonable to think that all Open Badges have per se a positive effect on learning. Certain Open Badges would be trivial, while others could have no pedagogical bases or use unclear criteria and assessment methods. On the other hand, certain quality standards and methodologies, may help conceiving Open Badges that enhance the individual inclination to learn.

*

**Projects addressing the promotion of open badges**

One of the priority areas of the European Union Education and Training 2020 strategy is the promotion of recognition of prior learning and the validation of 21st century skills. Therefore, open badges constitute a field of attention in the European education policy and projects dealing with the topic are supported by the Erasmus + programme.

In this article we draw attention to two KA2 projects both addressing the promotion and application of open badges in education and training.

**The Open Badge Network project**

The Open Badge Network (OBN) a 3-year-long recently finished Erasmus + KA2 project (running Sept 2015 – Aug 2017) was bringing together organisations from across Europe to support the development of an Open Badge ecosystem, promoting the use of Open Badges to recognise non-formal and informal learning.

***The OBN project aimed at providing a trusted source of independent information, tools and informed practice to support people who are interested in creating, issuing and earning badges across Europe.***

Within the framework of the OBN project the OBN Community has been established for those who are interested in the topic of Open Badges. The OBN Community invites organisations and individuals from across Europe to join and help building the Open Badge Network. Badge novices or experts are equally invited in this community to become an Associated Partner of the project consortium and/or to join the OBN Steering Committee, the Board responsible for sustaining the results of the Open badge Network project.

For details about OBN and registration possibilities see http://www.openbadgenetwork.com/

Resources collected in the frame of the project are available at http://www.openbadgenetwork.com/resources/ and http://www.openbadgenetwork.com/outputs/

**The ReOpen project**

The ReOPEN project aims at creating instruments to develop validated OOL for recognition of prior and non-formal learning.

ReOPEN
Recognition of Valid and Open Learning

The aim has been reached through the following objectives:

- Design of a platform for non-formal open learning curriculum (e.g. MOOC) development with learning validation and recognition instruments in place (learner credentials, digital badges, learning path recognition and assessment tools).
- Training T&TT at C-VET organizations, companies, HE institutions and adult learning organizations to:
  a. design validated non-formal open learning curriculum (e.g. MOOC or other);
  b. applying digital badges as a new form of digital credentialing and tracking one's learning path in non-formal open learning;
  c. recognizing non-formal open learning results in formal curricula.
- Exploiting the new platform and designing non-formal open learning courses for continuous professional staff developing applying learning recognition instruments for validated non-formal open learning
- Establishing partnership for future collaboration for non-formal open learning recognition (reviewing curriculum in partner institutions and preparing information on potential recognition of open learning).

OOL practices embedded in digital era contribute to OOL recognition, open and innovative pedagogy, transparency and recognition of skills and access to qualifications for C-VET.

The developments of the project and resources created in the frame of the project are available at: www.reopen.eu

**Summary**

The article gives an overview of open badges, a type of micro-credentials starting from the USA and spreading lately all over the world, including Europe to recognize non-formal and informal learning actions and outcomes. Open badges are a form of micro-credentials with a potential for a reliable presentation of skills gained outside (and lately also inside) the formal education system, in many cases in adult learning. Specifically, open badges very often record and prove the acquisition of so called 21st century skills (i.e. communication, creativity, cooperation and critical thinking) considered by a large majority of the employers as a significant aspect of selection.

It starts with an overview of open digital badges, including the reason of their existence, the **meaning** of the terms describing the badges, the infrastructure and the eco-system around open digital badges, the stakeholders of the badge and their perspective/interest is using badges. It also details the metadata behind the badges. The paper pays attention to the values as well as the risks associated with using digital badges for credentialing skills, competencies and experiences.

The article concludes with the description and the relevant findings and outcomes of the Open Badge Network and the ReOpen projects.

**Bibliography**

- Casilli, Carla (2015). Open Badge Opticks: The prismatic value of badges
- Collins, R. (1979). The Credential Society: An Historical Sociology of Education and Stratification. New York: Academic Press.

- Everhart, D., Derryberry, A., & Knight , E. (2016). The Role of Endorsement in Open Badges Ecosystems. In D. Ifenthaler, N. Bellin-Mularski, & D.-K. Mah, Foundation of Digital Badges and Micro-Credentials Demonstrating and Recognizing Knowledge and Competencies (pp. 221-236). Springer International Publishing Switzerland
- Knight, Erin & Casilli, Carla (2012). *Mozilla Open Badges. Game Changers: Education and Information Technologies*. In EDUCAUSE 2012. http://www.educause.edu/library/resources/case-study-6-mozilla-open-badges
- Muilenburg, L. Y., & Berge, Z. L. (2016). Value of digital badges. In Z. L. Berge, & L. Y. Muilenburg, Digital Badges in Education: Trends, Issues, and Cases (pp. 102-108). Routledge.

**Eszter SALAMON**

# European parents for 21st century careers and competences

One of the most delicate parental tasks is to guide your child or children towards further education and possible successful career pathways, avoiding traps such as trying to fulfil your own un-accomplished dreams in your child or following fashionable trends instead of looking for the right pathways. This is an area where parents, their association, teachers, other professionals and other players, especially the media, have a major responsibility to collaborate and thus try to minimise risks and possible harm. Career guidance literally starts in cradle while skills and competences development should continue until the grave for most in today's and tomorrow's reality. This paper is aiming at exploring current research evidence, policy recommendations and inspiring practice in Europe and beyond. This is analysed from a rights-based perspective, with equal focus on the rights of the child and rights of parents, based on the work of the European Parents' Association.

The apropos of the article is that the European Parents' Association held its annual conference[1] in November 2017 under the auspices of the Estonian Presidency of the European Union on career guidance and suitable individual learning pathways for today's children, with special focus on counterbalancing the bias towards university education by the media, education policy and consequently very often by parents, too. The representatives of parents' associations and students, VET providers, career guidance services and school heads participating at the conference looked at ways of home-school cooperation in career guidance, transversal skills for well-being, future life success and lifelong learning with special focus on entrepreneurship, and the role of parents and parents' associations to improve the image of vocational secondary education and non-university tertiary education to help people understand that for most people it has always been and will always be a first and best choice.

The EU has realised the importance of building a knowledge-based society back in 2000[2], and in 2010 set the headline target that 40% of the younger generations should have a tertiary degree by 2020[3]. On the way – while the legal basis has not changed, but the university lobby has become very influential – the European Commission started to interpret tertiary education as higher education[4], but we must keep the original intention and regulations in mind: parents should aim at supporting all children to finish secondary education and as many of them as possible to obtain a tertiary degree, be it a vocational, post-secondary or higher education one, that can ensure easy access to the labour market.

Meanwhile we should not forget that even if Europe manages to achieve the above goal, still nearly 2/3 of young people will have to successfully start their lives having the right secondary education, cognitive and transversal skills as well as the spirit of initiative. Parents and professional educators have a crucial role – individually and together - in supporting young people in finding their own pathways, be in a secondary vocational education or a PhD, help them to lose the least possible time with useless studies and find their way to a happy life.

This needs a very conscious parental approach to guidance as well as a well-established professional support system available for families. To provide the latter is a basic obligation of all governments in

[1] http://europeanparents.blogspot.hu/2017/11/suitable-pathways-conference-report.html
[2] http://www.europarl.europa.eu/summits/lis1_en.htm
[3] http://ec.europa.eu/eurostat/web/europe-2020-indicators
[4] https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en

Europe, as they are all signees of the UN Convention on the Rights of the Child that obliges governments to support parents in their parenting duties in ways they need it[5]. In a recent survey about people's opinion about vocational education and training by CEDEFOP, people were asked if they had received professional guidance support before making decisions[6]. While nearly ¾ of vocational students had received information about their choices of upper secondary pathways before making decisions, less than half of those in general secondary education make this choice being informed.

Parents face a bigger than ever challenge when guiding their children towards their future careers. On the one hand it is aiming at immediate or near future success, namely immediate employment after graduation, there is a need to also think about long-term success. While most successful member of the current parent generation is practically retraining themselves for a new job about every seven year, even if the majority of people do not realise this, they cannot expect a less demanding lifelong learning situation for their children. It is becoming common knowledge, that 65% of children who are at primary school today are likely to end up in jobs that do not exist today[7], and they are likely to have to transition to yet newer ones throughout their future careers.

School systems established for a very different reality in past centuries do not seem to cater for this need for the masses. In the majority of school systems in Europe academic content focus, teaching centred methodology and general approaches to children's learning are still in place, with more and more focus on standardised testing. This discourse is highly influenced by PISA results. While there is no country that cannot benefit from public debate on education, and PISA seems to be a starting point for mass media to tackle the topic, academics and stakeholder groups alike are pushing for shifting the focus either of PISA or from PISA to highlight skills and competences for the abovementioned future more. One well-known criticism of the system is an open letter by leading academics[8], published in 2014 emphasises that the most important educational achievement are not measurable by standardised tests like PISA. This is reinforced by reports of surveying employers about skills and competences they are looking for in their young employees. Conscious parents become concerned understanding that it is not or not only academic achievements that are the way to immediate success, but skills that are called transversal or soft or 21st century skills, but generally cover what is high on this list by employers: critical thinking, problem solving, creativity, teamwork among them[9].

In 2015, celebrating 30 years of being the sole representative of parents in Europe, the European Parents' Association (EPA) reviewed its policy and activities to formulate a list of necessary measures in order to provide our children with an upbringing that ensures that they become responsible 21st century European citizens and reach their full potential for a happy and fulfilling life[10]. According to the EPA Manifesto 2015 this requires that the EU and national governments provide equitable (and not equal) and inclusive opportunities in education for children and their parents - the topic EPA dedicates the year 2018 to. The review had been done on the basis of the UN Convention on the Rights of the Child (UNCRC) and calls for measures especially in the fields of creating a 21st century education system, active citizenship and participation, digital literacy, supporting and endorsing parenting and parenting skills, and balancing work and family life.

[5] Article 18 https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-11&chapter=4&lang=en
[6] http://www.cedefop.europa.eu/en/publications-and-resources/publications/5562
[7] McLeod, Scott and Karl Fisch, "Shift Happens", https://shifthappens.wikispaces.com
[8] https://www.theguardian.com/education/2014/may/06/oecd-pisa-tests-damaging-education-academics
[9] http://reports.weforum.org/future-of-jobs-2016/
[10] http://europeanparents.blogspot.hu/2015/12/epa-celebrated-30-years-of-being-voice.html

In Manifesto 2015[11], based on the axiom of parents being solely responsible for educating their children, in the format of their choice, to become lifelong learners and active citizens, helping them in their harmonious development physically, morally and intellectually, and that challenges of the 21st century in the field of employability need an aptitude for learning, the ability to embrace change and entrepreneurial/intrapreneurial skills, organised parents demand a number of policy and practice changes, shifting focus towards competence and skills development in formal education among them.

Subsequently, in 2017 organised parents supported the so-called Smart Indicators for Education developed by New Education Forum (NEF)[12], an initiative by the Centre for Innovative Education as fully resonated with the demands parents have formulated recently and address the issues that concern responsible parents all over Europe. Its approach that emphasises the important role the EU and its institutions must play in the major paradigm shift towards an education that can give answers to major demands of the 21st century and help fundamentally reforming outdated education systems resonates with concerned parents all over Europe. Parents claim that the EU is not rich enough to finance the long-term consequences of school systems that do not have solutions, thus creating environmental and health problems, unemployment, lack of participation in society and growth of extremism.

Since there is a general belief among organised parents that decisions are best made as close to the people, children as possible, it is desirable to have subsidiarity in place with focus on municipality level to carry out universally agreed goals involving all major stakeholders - in the case of education first of all children, their parents and professional educators. When designing and implementing new education, policy makers not only need to stick to the principle of ''nothing about them without them' in the case of children, but also to 'nothing about us, parents, and our children without us' acknowledging that the primary responsibility for educating children is with the parents – as stated in the UNCRC[13].

It is very important to start introducing this topics of sustainability and environment in early childhood education, and starting in formal provisions is too little too late. Education for sustainability should start as early as possible. It is crucial to empower families, especially young parents, in order to introduce environmentally conscious home practices. Early education done by the parents in the first 1-3 life-years is absolutely crucial, so there is a need to focus on this age group, too, making all professionals working with young families (paediatricians, district nurses, social workers, etc.) aware of their role and responsibility in it[14]. Even career guidance start at this age segment, often with unconscious gender bias (like the example introduced by the BBC recently[15]) and reinforcing gender stereotypes. Family example is and will always be the major driver behind later career choices, and parents need to be aware of this.

Active citizenship starts at home, and it also starts in early childhood with the introduction of participatory parenting practices. For this, parents need support and training. As many parents and teachers come from a different culture, we also need to make kindergarten/school the training ground for participatory democracy, where children, teachers and parents learn this practice together, having responsibilities for their decisions, but in an ultimate safe environment where wrong decisions have no grave consequences, but you experience the downside of opting out.

[11] http://euparents.eu/manifesto-2015/
[12] http://ciedu.eu/the-new-education-forum-2017/
[13] Article 5 and Article 18 https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-11&chapter=4&lang=en
[14] http://euparents.eu/best-interest-young-child/
[15] http://www.bbc.com/news/av/magazine-40936719/gender-specific-toys-do-you-stereotype-children

Implementing a whole school approach, highlighted by EC policy messages in 2016[16] is the best to-date to involve stakeholders, helping them to take ownership of the school and of their own learning.

It is extremely important to also provide adequate support to special education needs and disabled students either in the form of accessible and safe environment for them, or by dedicated supporting staff and specialised teachers. This to crucial to provide a really diverse and inclusive education to all and for students to experience the full diversity scale of society. The Education for All[17] initiative by UNESCO highlighted this as a crucial element. It also requires schools to become community learning spaces[18] where the whole local community can learn and also educate nearly 24/7.

Children deserve to get childhood back, and thus playful approaches are very much welcome. It is also the best basis for lifelong learning, playfulness helps it become second nature as it makes learning enjoyable and satisfactory while being more effective than other forms of learning[19]. Learning best happens in the state of flow[20] research shows, and it happens in the case of the right mix of challenge and joy.

Inclusion in education is necessary for cradle-to-grave lifelong learning to become natural in Europe. A good tool to evaluate the inclusiveness of institutions against another set of indicators is the Indicators of Inclusion[21] developed this year by NESET.

Education, a joint effort of the home, the community, non-formal providers and formal education, should aim at every child to reach their full potential as described eg. by the Learning for Well-Being Framework[22]. For this, there is a need to fundamentally reform curricula, to make them mainly focus on skills rather than mostly academic content. It is the joint responsibility of professional educators, policy makers and parents' organisations to help parents understand why it is in the best interest of their children.

There is a need to introduce an equitable[23] approach to education and ensure that every child and also adults have access to provisions best for that individual. Access should never be restricted by financial constraints, so there is a need for adequate funding for all forms of education – be it formal or informal, state, church or private – according to the joint choice of children and parents. This is the only way to provide children with the right education for them – a basic right ensured by the UNCRC.

This also means the need to introduce a holistic approach to education[24], ending subject and segregation, for all learning to be endorsed and validated, and for schemes that acknowledge learning outside of school, especially education at home by the parents. This is a trend the 2015 Rethinking Education publication of UNESCO[25] that is promoting an approach that considers education a common good. It goes beyond the long-established, but often debated notion of public good, and calls for an approach that supports education for all that is for a common good, regardless its form, way or even financing.

[16] Schools policy – A whole school approach to tackling early school leaving, European Commission 2016
[17] http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-all/single-view/news/equal_right_equal_opportunity_inclusive_education_for_a/
[18] see Case Study from Latvia in https://issuu.com/epnosl/docs/deliverable_3-3_epnosl_case_studies
[19] http://www.legofoundation.com/it-it/who-we-are/learning-through-play
[20] https://www.learning-theories.com/flow-csikszentmihalyi.html
[21] http://nesetweb.eu/en/library/structural-indicators-for-inclusive-systems-in-and-around-schools/
[22] http://l4wb.org/index.html#/en/we-promote/page/a-framework
[23] https://ec.europa.eu/jrc/en/publication/equity-education-europe
[24] http://scholar-base.com/homeschooling-educational-trend/
[25] http://unesdoc.unesco.org/images/0023/002325/232555e.pdf

For both short and long term reasons, policy makers and educators – both professionals and parents – need to make efforts to change the public opinion[26] on vocational education in order to stop seeing it as a second choice and making VET pathways an equal choice[27] to academic pathways. This should be the choice of at least 2/3 of the population and they must feel themselves first class citizens.

At the same time all stakeholders are also responsible for ensuring vocational pathways to provide skills development, up-to-date professional knowledge and fosters aptitude for learning throughout life[28]. Career guidance and vocational education need to promote entrepreneurial spirit and new forms of employment. This is also crucial to ensure current and future parents can balance work and family life better[29].

As mentioned before, policy makers, professionals and parents need to work together to move away from a culture of standardised testing and towards a focus on developing skills, especially transversal ones. School leaders should leverage their autonomy (and fight for it if it is not a-given) in order to introduce and maintain an educational offer aiming at the improvement of soft/transversal/life skills, encourage their students to take advantage of it and help parents to understand and endorse their importance.

Embracing and exploiting digital opportunities as well as introducing digital practices as early as possible should be part of it. Children and adults need to learn to safely navigate in the digital world and we should stop believing that it is possible to create some kind of safe parallel digital highway for minors[30].

Up-to-date skills also mean there is a need for up-to-date validation, certification and acknowledgement of skills regardless of the settings they had been acquired at – be them formal, non-formal or informal[31].

Inclusion of ALL parents and ALL children as well as all professionals in reforming education and operating the revamped systems is crucial for success. But it cannot happen without investing in empowering each stakeholder group for this role, and developing skills, especially for democratic participation, taking responsibility and managing challenges. Different stakeholder groups also need to learn to acknowledge and appreciate other stakeholders. This can only happen if we can make sure everybody is included, appreciated and thus participate.

In order to be successful in reforming education and implementing smart and suitable practices for future well-being and life-success we need to set SMART (specific, measurable, achievable, realistic and timely) goals. There are many initiatives on international, European, national, regional and local levels around education that have a balanced approach, having equal focus on the well-being, the active citizenship and the employability aspects, but we are far from a consensus, especially since – as mentioned before – success here is nearly impossible to measure by using simple tools, and nearly impossible to have measurably changes within one parliamentary term, the measurement unit of many politicians. Thus, it is also very important to have companies and academics on board when designing and implementing changes as they do not usually have that kind of time constrain and thus it is easier for them to have more strategic approaches. Parents are their most natural allies, as it often only needs a change of position: most employers, employees, academics and professional educators are or were also parents.

[26] http://www.cedefop.europa.eu/it/publications-and-resources/publications/5562
[27] https://www.csreurope.org/sites/default/files/uploads/first_policy_proposal_final.pdf
28 www.cedefop.europa.eu/files/5131_en.pdf
[29] http://euparents.eu/balancing-work-and-family-life/
[30] http://euparents.eu/position-paper-on-cyberbullying-and-social-networks-2/
[31] http://www.cedefop.europa.eu/en/events-and-projects/projects/validation-non-formal-and-informal-learning

***Organised parents in Europe***: The **European Parents' Association** (EPA) gathers the parents associations in Europe and thus reaches out to more than 150 million parents through its network. EPA works in partnership both to represent and give to parents a powerful voice in the development of policies and decisions at European level affecting the lives of parents and their children. In the field of education, EPA promotes and works for the active participation of parents and the recognition of their central role as the primary educators and those responsible of the education of their children.

EPA supports the participation and collaboration of parents in many educational respects by:

- gathering and disseminating information;
- highlighting and supporting innovation in educational partnership;
- promoting parents' ongoing support and training;
- supporting research.

Current and recent education EPA projects are aiming at supporting parental engagement focusing on the following fields:

- 21st century parenting;
- active citizenship and participation;
- rights of the child and rights of parents;
- equity and inclusion - with special focus on migrants, special needs and disabilities;
- multilingualism;
- participatory leadership;
- stakeholder cooperation - focusing on parental engagement, child participation, school head and teacher training;
- safety and confidence in the digital world;
- educational success of children;
- lifelong learning of parents;
- STEM education;
- early childhood development.

More information on the EPA website: euparents.eu

**János, Cz. HORVÁTH**

# Micro content – content organization in the world of networks

## Introduction

One of the slogans of the 2000s was the convergence of devices. The various forms of everyday communication tasks were served by a number of equipment and devices. The developers and producers tried to prepare their (to be) users for the future, which we, today, perceive as our natural substance, in high-sounding and spectacular ways. Mobile phones, as we call them, have become a portable device equipped with various possibilities, however, they should rather be looked at as centres elaborating and transmitting news. Owing to the investments, in Hungary the standard of the telecommunication systems has risen to the world front rank[1]; mobile tools are the most favoured platforms for people when connecting to the World Wide Web[2] [3]. The prices of tablets, (smart) phones and computers are falling abruptly, the internet subscription packages offer more and more advantages, and accessing the contact channels has become a lot easier[4].

Owing to the internet, we may feel the amount of the available data unlimited. We may spend plenty of time autotelicly browsing the websites and services that, in addition to entertainment, do not offer too much of usefulness. Although we *could have got to know* a lot of things, what is that we *have really learnt* and studied on these diverging tours of ours aiming to gain knowledge?

Considering our formal educational systems, the obstacles in front of involving mobile devices into the teaching environment are fading away. The BYOD (Bring Your Own Device) attitude has rooted in teacher training centres, as well [5]. Involving teaching-learning situations based on the internet into school life seems to be unobstructed; visiting the Web may become as convenient as taking a book off the bookshelf next to our desk.

As far as printed students' books are concerned, the expectations and the editing methods in relation to the structure and the enhancement and systemization of the knowledge to be transmitted became clear during the centuries. András Kósa[6] starts his book with this citation: "The order of content can only exist where there is an order of form". The rules corresponding to the formal orderliness of the paper-based knowledge resources have not yet evolved in the world of internet-based materials. Writing schoolbooks is a separate branch within the science of pedagogy, while "formal order" is still evolving in the case of e-learning materials; endeavours are being made[7]. Concerning e-learning materials, the measures of learning objects (LO) are not uniform; although the amount of the information possible to be put on the screen without scrolling seems to be identical, this is in fact relative because of the various screen sizes (see e.g. the difference between a mobile phone, a tablet and a monitor) and the types of information (text, image, motion picture, short film, interactive task, hypertext etc.). The additional utilization of the educational units by the students means a further problem (copying the content is generally impeded for copyright reasons).

[1] http://www.portfolio.hu/vallalatok/it/magyarorszagon_a_harmadik_leggyorsabb_a_mobilnet_a_vilagon.236421.html
[2] Róbert Pintér, The spread of smart phones in Hungary („Az okostelefonok terjedése Magyarországon")
[3] Central Statictical Office of Hungary, HUNGARY 2015 („MAGYARORSZÁG, 2015")
[4] György Molnár, Actual Issues of New Digital Media (Az újmédia digitális, időszerű, tartalmi kérdései), OKTATÁS-INFORMATIKA VI:(2) pp. 29-39. (2014)
[5] http://byod.ektf.hu/hirek
[6] András Kósa, To the authors of schoolbooks and trade books („Tankönyvek, szakkönyvek szerzőinek")
[7] Péter Antal, „Interaktív elektronikus tananyagok tervezése"

Distributing the content into a knowledge structure in the digital era and in the digital scope requires a new attitude. Micro-content attitude[8] [9] [10] means a step forward as compared to the traditional solutions; we intend to introduce its theoretical background and practical realization in this study.

## Short definition

According to its name, *micro content*[11] [12] has an understandable function: it is to include the information[13] to be transmitted into the smallest possible size. Text-based micro content uses a brief style sticking to the point, and it totally lacks the popular "wordiness solutions". It is important that the cognitive burden necessary to acquire and receive a unit of knowledge is smaller than it is with other forms of transmitting information (like newspapers, novels or a radio interview).

Concerning the real size of the micro content, we cannot tell any concrete or strict values. It may depend on the time, place and conditions of application, or can be subject to the agreement made within a certain group of users. The device supporting the recording and transmission of the content exerts an impact on the size and the quality of the content.

## Micro content in a historical perspective

In case we accept the statement saying that the device limits the amount of the recordable content, we will find various forms of micro content if looking from the past towards the present in historical time.

The paintings on the cave walls of ancient times were short messages since the few people able to draw the pictures could use a limited amount of available paint. Preparing the antique wall engravings needed huge physical power. Clay tablets, owing to their size, limited the size of the texts. The Middle Ages were the time for the spread of book format in which the number of the sheets could be increased according to the needs – here, the surface of the sheets can be considered a kind of a weak limit, and until today, we have not yet seen a really good example of the objective manifestation of this type of micro content. In the new era, with the spread of postal services, it is the surface of the postcards that has determined the frameworks, and in the case of newspapers, it is the publication fee corresponding to the length of the advertisements that limits the text.

Nowadays, the message size transmittable by the still popular SMS is 160 characters. We may think that at the time of the standardization of the GSM phone system, in the 1980s, technology was able to provide this size, however, in case we can believe the news[14] [15], it was much rather the decision of just one person. Twitter, which is labelled as the service provider of up-to-date SMSs, at first allowed 140 characters for the users to form their messages, but this has basically changed by today[16]; in

[8] HORVÁTH CZ., János „Micro-content Generation Framework as a Learning Innovation" In: Benedek András, Veszelszki Ágnes (szerk.), In the Beginning was the Image: The Omnipresence of Pictures: Time, Truth, Tradition. 190 p., Frankfurt am Main: Peter Lang GmbH, Internationaler Verlag der Wissenschaften, 2016. pp. 171-181., (Series Visual Learning; 6.), (ISBN:978-3-631-67860-2)

[9] BENEDEK, András; HORVÁTH CZ., János „New methods in the digital learning environment: micro contents and visual case studies", In: António Moreira Teixeira, András Szűcs, Ildikó Mázár (szerk.), Re-Imaging Learning Environments: Proceedings of the European Distance and E-Learning Network 2016 Annual Conference. 802 p., Konferencia helye, ideje: Budapest, Magyarország, 2016.06.14-2016.06.17. Budapest: European Distance and E-Learning Network (EDEN), 2016. pp. 27-34., (ISBN:978-615-5511-10-3)

[10] BENEDEK, András; HORVÁTH CZ., János „Case Studies in Teaching Systems Thinking" In: Mikuláš Huba, Anthony Rossiter (szerk.), Preprints of the 11th IFAC Symposium on Advances in Control Education. Pozsony: IFAC, Prague, 2016. pp. 286-290.

[11] Martin Lindner, Theo Hug (2006): Human-centered Design for 'Casual' Information and Learning in Micromedia Environments, Austrian Computer Society (OCG) – Work Group HCI&UE – 2nd Symposium.

[12] Martin Lindner (2007): What Is Microlearning?, Proceedings of the 3rd International Microlearning 2007 Conference.

[13] Kristóf Nyíri (2010): Mobile world – The new experiences of connection and community (Mobilvilág – A kapcsolat és közösség új élményei), Magyar Telekom, Budapest.

[14] http://beolog.blog.beol.hu/2009/05/06/miert-pont-160-karakter-egy-sms/

[15] http://latimesblogs.latimes.com/technology/2009/05/invented-text-messaging.html

[16] https://blog.twitter.com/2015/removing-the-140-character-limit-from-direct-messages

addition to limitless text size, images can be sent, as well. This meant the end of one of the representatives of micro content quality. It is not only the number of the written characters that can make a message a micro content. The service called Snapchat allows the receiver to view the transmitted image or video for a maximum of 10 seconds, and there is no possibility to repeat. In this situation, the aim is to form a concise message that can be understood and comprehended in this short time.

The *Hungarian Virtual Encyclopaedia* (ENC) was prepared in a micro-content attitude[17], under the direction of Kristóf Nyíri. The one and a half thousand entries were all written by renowned experts, in a size of app. 1400 characters. The entries were densely furnished with references pointing to each other. The texts are brief, still effective in providing information for the reader on various fields of scientific results (e.g. law, environmental care, EU, learning, health etc.).

In the Visual Learning Lab (VLL) at the Budapest University of Technology and Economics (BME), under the leadership of Kristóf Nyíri and András Benedek, researches are conducted in the field of the up-to-date usage of various forms of image representation, with special respect to the everyday teaching processes in higher education. These include forms of micro content, as well.


Figure 1: An entry of the ENC and the network of the entry references pointing to each other

Another good example of applying micro content principles is the *Sysbook* developed under the direction of Tibor Vámos; currently, the Sysbook contains 140 content units in screen size. Although the content elements follow each other in a serial order, one content unit involves six levels of interpretation (image representation, text, mathematical examples, everyday life examples, theory and education). These levels of interpretation can be visualized next to each other and compared on the screen.

[17] http://www.enc.hu/

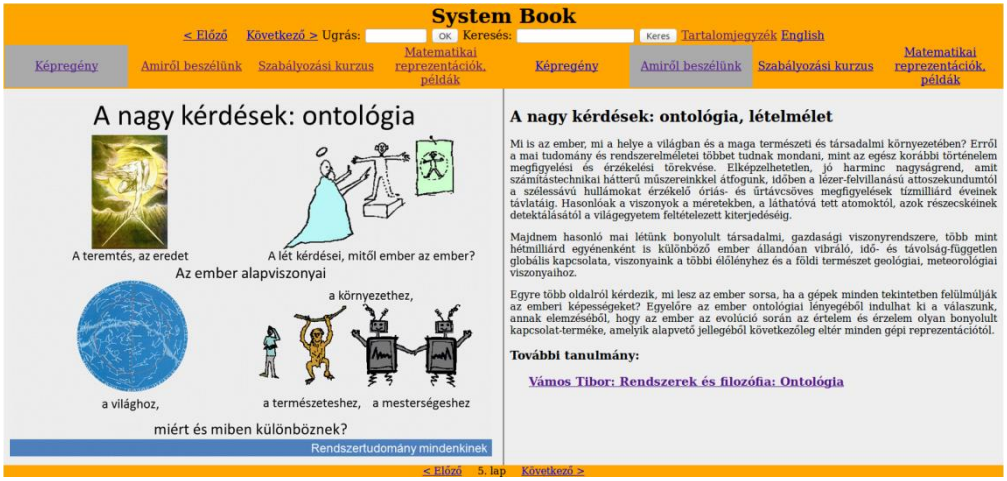



Figure 2: A SysBook unit

## Pieces of content organized into a system

We started dealing with the transformation of micro content into tasks that can realistically be fulfilled by students and pupils in the educational environment quite early, at the beginning of the 2010s. Initially, we had the possibility of directing hundreds of students within the frames of the subject called Digital pedagogy hosted by the Department for Technical Pedagogy of the BME. At that time, the participants created their brief works in a previously provided HTML template (Figure 3).


Figure 3: An early micro-content editing system

In order to stick to quality requirements, the students had to organize content units amongst fixed limits (with a maximum width of 300 pixels as for images and 1024 characters for text blocs) on a platform accessible through a browser.

The application called *MEdit* also offered the possibility of inputting micro content through a browser. We took the possibility that the certain tasks be viewed by anyone as a highlighted requirement. In MEdit, it was possible to create image- and text-based units (see Figure 4), and the computer environment had the formal rules strictly kept. The micro content units were given title-like names, and were possible to be furnished with labels. This way, in addition to text-based search, label-based search became possible, as well.

We aimed to achieve easy and rapid usability; we intended to keep the so called cognitive burden going with application at a low level both in the process of making the content and receiving it.

Figure 5 shows the preview of the micro content units uploaded into the MEdit system. By clicking on the compressions, real content can be viewed. The image-based compressions were given thumbnail like previews, but concerning text-based ones, we created individual combinations of colours with a special procedure supporting by this their distinction.


Figure 4: An example of image- and text-based micro content in the ME system

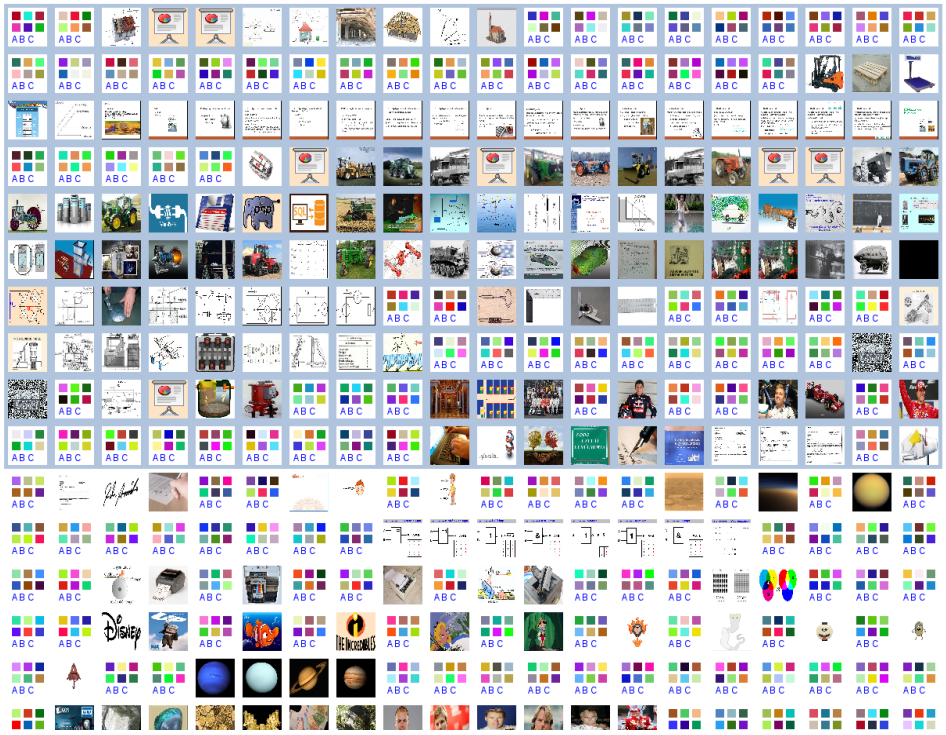


Figure 5: Mass preview of micro content elements

The mass production of micro content is not a problem any more, however, the demand for search options has arisen. Introducing the term and practice of the so called thematic collections means a partial solution to this. Each user can create their own thematic collections into which they can pack their own compressions in an optional order. These collections, too, can be named and labelled and shared with the members of the participants' circle. Figure 6 shows an example of this application.

The students having participated in the test needed some time to prepare, however, they got used to the user interface rapidly, and they also recognized the usefulness of the system. After the first well edited micro content units were made, on the basis of the good examples, most of the students started creating their own compressions and then their thematic collections. Most of them elaborated their latest reading, and this way the content of a longer book became available in 5-10 micro content units, which was a perfect help to decide whether that publication was worth reading it or not. There were special content collections made in relation to someone's own profession, like boilers as parts of home heating systems or the introduction of raw materials providing the base for wood procession. The topics of spare time activities appeared, as well, like various Hungarian types of dogs, fish possible to be angled or the description of students' own settlements. All in all, a really multicolour and valuable set of data was compiled during the examined period.


Figure 6: Compilation of thematic collection from micro content units

After having the experiences collected and analysed, we decided to develop a new-generation micro content managing program built on a Web2.0 base. With the application named *MC Hungle,* we took into consideration the changes having taken place in content accessing habits during the latest period. We made the interface more expedient and easier to use. We heeded that by the vivid colours and forms the system maintain the users' attention and the set tasks be possible to be fulfilled within a short time.

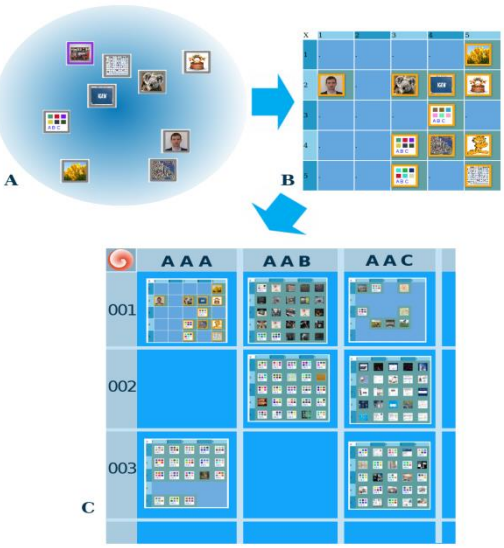



Figure 7: A higher level compilation system of content elements

Owing to the students' work even excessing the previous stage, several thousand micro contents were made in this framework system. To organize the content, we introduced the model shown by Figure 7. The order 'micro content – thematic unit – thematic collection' promises that the three levels of the thematic distribution offer sufficient help for the users to retrieve and find the information searched.

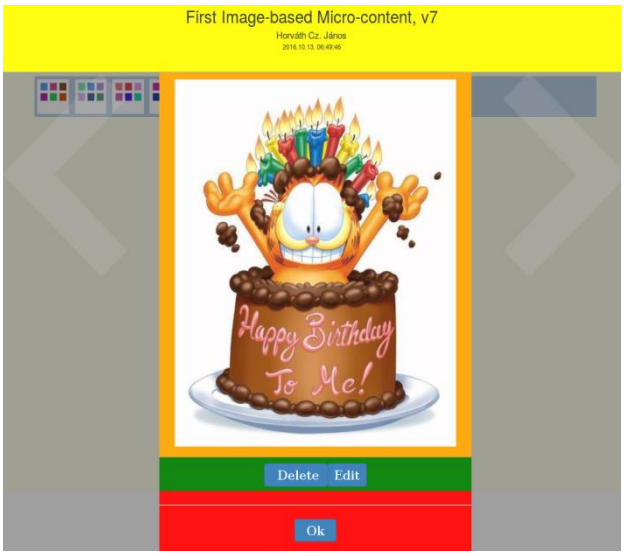



Figure 8: Viewing an image-based micro content in the Hungle system

## Cases and practices

In the fall semester of 2016, within the frames of the subject titled 'I shall be an engineer' taught at the Institute for Applied Pedagogy and Psychology of the BME, students were asked to submit their works on a micro content base. The subject aims to give an orientation to first grade engineers and to give a foundation to their engagement towards their profession. A number of topics related to engineering but not connected to just one narrow field are highlighted with the participation of several lecturers. In the case of such a heterogeneous curriculum, the methods adopted in other subjects to charge tasks cannot be used, and in addition, in the case of almost 1000 participating students, the elaboration of any task would need complicated logistics in the traditional case.

We developed the concept of micro content-based task submission with the responsible lecturer of the subject. As a result of the considerable extension of the Hungle system, the so called 'article-based' type of micro content was introduced. This in fact meant the blending of already existing text and image based content elements. On the editing interface, this type of micro content is accomplished by an image and a text bloc of limited size. Of course, this must be named and labelled, as well.

The framework system offers two pieces of "prepared" content units to each student – in practice this meant titles determined in advance. The titles covered the historical events of the university, the sights of its geographical environment and the biographies of renowned former students. Owing to the accidental distribution of titles, each student gained an individual pair of headings. They had to fill in the text and image bloc and the labels of the micro units by the deadline. Their work was assessed by the teacher on a separate controlling interface where the author was given a mark on a five-grade scale according to four aspects (relevance of content, coherence of text, preciseness of labels and technical implementation (see Figure 9).


Figure 9: Evaluating student's work

Students were also involved in the process of evaluation. They were given access to the works prepared, in order to read and take looks on them. Everyone could save three works into their own collections, the three they evaluated as the best (Figure 10). This way, there was an order evolving between the micro contents considered valuable by others the authors of which were rewarded.


Figure 10: Community evaluation of students' work

All in all, this type of tasks was welcomed by our students. On one hand, they performed it relatively quickly, so accomplishment meant less time and fewer burdens for them. On the other hand, the fixed project titles had direct contacts with their university life, so they proved to be interesting. Third, the possibility of the feedback towards the students' community is a newish moment not having been typical of university tasks so far. We are analysing the experiences gained during the semester, and will offer even more interesting undertakings for the next grade.

Although the framework system (Hungle) of the presented case was accessible through the regular Moodle framework system, in many cases we experienced demands for tasks implemented only in the Moodle and organized according to micro content principles. This problem can be solved with the own applications of Moodle, owing to the so called 'database' element. Here, we have

established the necessary framework with the help of electronic forms, and have created 5 types of micro content (see Figure 11).


Figure 11: Micro contents with Moodle applications

The content units are collected within an educational sheet. In this arrangement, there is no possibility to compare the micro contents of the various educational sheets, but we are currently working on the data transfer complement by which these contents can totally be moved to the Hungle system.

## The issues of restricting content

The measure of the raw data expansion of the World Wide Wed exceeds the perceivable and usual domains.[18]. The growth rate of the edited data structures may be similar to this, so creating a single system organizing all the knowledge of the world (or just the World Wide Web) seems to be an impossible mission. As Kristóf Nyíri thinks and used to say[19]: "...the rapidly *augmenting* contents of knowledge burst the idea of the uniform knowledge of human race".

Everyday practice shows that the knowledge found, learned or recorded by a person does not make a uniform knowledge, either; we may refer here to the results of the surveys made concerning students' learning performances. The IT and internet world transports innumerable quantity of information to everyone. However, these pieces of knowledge are credible, up-to-date and important at differing rates; there are not many who undertake to assess these aspects. Wikipedia is perhaps one of the exclusions where voluntary groups and the readers' feedbacks help the quality based selection of the entries, although this is not at all sufficient[20]. How much of the information read, seen or heard can we remember after a day, a week or a year has passed? Or does anything remind us of *the existence of the knowledge worth remembering* at all? The bookmarks of the browser programs are only able to register the websites; in case the quantity of the items exceeds a certain number limit, they become a confused agglomeration. And this is a technology only helping us to retrieve the documents of the WWW; we have not even raised the question of a similar registration of the printed documents and images of the "old world" by individuals!

How could it be possible to create and maintain organized knowledge at the personal level in our accelerating world? Supposing that the knowledge of the suitable and personally tailored learning methodologies is at disposal, the task can be narrowed to the question of the supporting environment. It is presumable that in case the participants are given digital support that offers not

[18] http://old.sztaki.hu/alkalmazasok/szakmai_beszelgetesek/adatbanyaszok_tudnak_rolad_mindent_ronyai_lajos/
[19] The Hungarian version of the lecture held at the conference titled "Information Society, Interdisciplinarity, and the Future of the Humanities" and organized on 4th November 2000, the Day of Science by the Institute for Philosophy of the Hungarian Academy od Sciences. Published in issue 2001/7-9 of the review *Világosság*.
[20] https://www.dailydot.com/news/wikipedia-bicholim-conflict-hoax-deleted

only the possibility to record knowledge and content important for themselves but can compare it to and get to know others' as well as present their own, *learning communities*[21] may evolve.

The base of a learning community is provided by the creation and long-term maintenance of the personal learning environment of the individuals. The production and dissemination of the knowledge organized into a system requires time, energy and financial resources, independent of the fact whether it is published in print or electronically. There are many companies in the field of placing knowledge transmission on business grounds (like Google, Microsoft, Facebook, Amazon etc.); these try to develop new methods and have them accepted by the users in the hope of profit. But the creation of the up-to-date model of personal learning environment should be independent of all business impacts, and so it could gain support within the reach of the nation states or the EU.

According to the literature[22] [23], *Personal Learning Environment* (PLE) is an agent supporting both informal or natural (voluntary, curiosity led) learning and directed (formal, classroom) learning. The model presupposes the existence and active usage of the mainly digital channels and the application of the toolkit built on these. All the elements by which the students can record their learning objectives, organize their learning process, create and share collections of digital materials according to their own needs and can exchange their ideas with others in a community network are considered as parts of the group of digital tools. Andrea Kárpáti's statement, according to which the youngsters of our era only get rich experiences about the methods of orientation in the digital scope, but they do not know what to do with this skill of theirs, should be given an increasing attention.

Despite its possibilities, the NEPTUN system, which is widespread in higher education, is only used for administrative tasks. The Moodle content and learning supporting framework system, which is widely known in Hungary, is now accepted not only in higher education, but at the level of public education, as well; it is generally used to arrange the triple of student – teacher – learning material within the frames of school life. Owing to their genre, teachers' websites and blogs highlight the possibility of information transmission by the author. None of the mentioned systems meet the PLE requirements described above fully, however, this gap can perfectly be filled by the *Hungle* micro content management system.

Surfing on the sites of the WWW, we may come across information of various sizes, from posts of some lines to several-hour videos. The average time of the procession of the knowledge placed (according to the principles) in a storage of micro content is well assessable and plannable. All created micro contents belong inalienably to their original author, and copyrights prevail. The content units we have made can richly be furnished with metadata and labels, and then these can be offered for sharing; through sharing, our being authors may come under judgement, as well, since the number of shares is of an indicative value. Comments can be added to each content unit, which will reach the original author as well as the group of those participating in sharing the unit. We have already mentioned the possibility of organizing the micro contents into thematic collections or thematic domains – we may establish our own library and also share it according to the demands. The participants and students elaborating similar contents form a special, looser or tighter, community network; this can arise from voluntary will, can happen by chance or for the successful

[21] Magdolna Benke Magdolna, Learning cities, learning communities („Tanuló városok, tanuló közösségek"), Educatio, 2016/2, ISSN: 1216–3384

[22] Adrienn Papp-Danka, Examination of the learning methodology of the educational forms supported by online learning environment („Az online tanulási környezettel támogatott oktatási formák tanulásmódszertanának vizsgálata"), ISBN 978-963-284-565-4, p. 40., 2014

[23] Andre Kárpáti, Gyöngyvér Molnár, Péter Tóth, attila László Főző, The school of the 21st century („A 21. század iskolája"), ISBN 9631966097, p. 155., 2008

participation in some kind of formal education. One of the former sections presented the way a deeper harmony between a Moodle system and a micro content management system can be created. The mass of the momentary knowledge of the learners' community created on this base can be well assessed by the micro contents created, shared, searched and placed into collections, i.e. the digital projections of the knowledge recorded in the human brains.

## Outlook

Owing to the appearance of mass micro contents, it is exactly great quantities that may result in new situations of usage. The search functions and aspects known from the internet support us find the adequate units: searching for full and partial word forms, selection by labels, searching in the texts of the comments added to the micro contents or offering order by time, evaluation aspects or number of shares. In case we would like to have an overview of the quality of the knowledge compiled in the system, we will have to apply text and data mining solutions.

Micro contents for the moment are text- and image-based. The third type, introduced as article, is a special alloy of the previous two. The introduction of new types is obstructed by nothing! Sound, video, database or various electronic forms are all possible to be recorded. The opportunity to embed these micro contents into the pages of the websites with the adequate codes, like YouTube videos, will be a result of further endeavours.

It is interesting to contemplate on what relation micro content (and its various collection levels) has to the traditional concept of documents. Figure 12 uses the concept of image pyramids[24]. In computer-based mapping, it is a general practice to complete the high resolution and detailed image of a certain territory with several, more and more reduced resolutions. By doing so, the digital data stock available in connection with the same geographical area becomes bigger and bigger (or smaller and smaller – depending on the perspective). This is how Google Maps service works: when magnifying into the the initially comprehensive map, images of better quality are downloaded to our computer, and so we do not have to work with one enormous data set. Micro content, thematic collection, thematic domain and documents are connected similarly to this, supposing that a certain topic can be elaborated in just one micro content, and then several micro contents written about the same topic can be compiled into a thematic collection, and thematic collections about the same topic can be included into thematic domains that will cover each information part of the original document. In case we do the building process well, the topic will be available at least at these four content density levels, according to the current user demand. Of course, the logical connection of the content units, which is in accordance with the logical structure of the original document, must be indicated in the collections.

[24] R. C. Gonzales, R. E. Woods, Digital Image Processing, Pearson Education, Inc., 3rd ed., ISBN-13: 978-0-13-505267-9, p. 954. 2008.

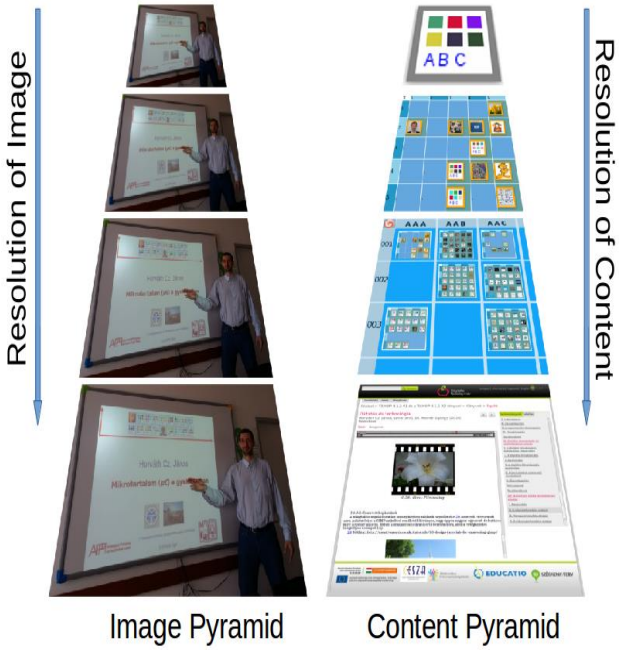



Figure 12: Image and content pyramids

**Zsuzsanna HORVATH**

# Modus operandi of Communities of Practice

## Introduction

The changes in technology and the advancements of the World Wide Web have resulted in a different way in which people interact, and locate, and share information. Virtual communities connect people from different geographic regions and allow for the exchange of ideas among a broader range of professionals (Martin-Niemi & Greatbanks, 2010; Byington, 2011). Despite its relatively recent conception as an academic and social concept the term, Community of Practice (COP), has gained significant importance in the academic community particularly in the field of education. COPs are the practical manifestations and realisations of situational learning (Lave & Wenger, 1991).

This paper will present the types of COPs (virtual and face-to-face), pointing out the characteristics of both. It will discuss the advantages and disadvantages and propose a merged model drawing on the advantages of both. Special attention will be laid on the issue of 'trust', as a building block of the successful cooperation between the members of the COPs.

## Characteristics of COP's

The rationale for creating a Community of Practice (COP) is the common goal to engage in a cooperation, most often in view of sharing or creating knowledge. It is embedded in a community and its founders are individuals normally of the same profession or activity (Cox, 2005). The term itself is a coinage and was brought to life by Jean Lave and Etienne Wenger (1991) as means of exploring the notion of situated learning within a particular domain of social practice. While the traditional form of COPs involved members meeting in person, the widespread use of technology in recent years has resulted in the increase of virtual communities of practice (Ardichvili, 2008; Bagozzi & Dholakia, 2002).

In its performance, success and efficiency are contingent upon three characteristics: mutual engagement, joint enterprise, and shared repertoire (Wenger, 2000). The modus operandi of the community varies depending on the setting, the physical distance and the aim for which the members got together at the first place: they can choose between face-to-face or online interaction. Although there has been significant support for the hybrid model where face-to-face interaction supplements online knowledge creation activities, many COPs operate in a strictly virtual manner and allow members to interact at their convenience, free of restraints such as time and location (Sousa, Lamas & Dias, 2011; Johnson, 2001; Wegener & Leimeister, 2012). Exchange of communication in a predominantly written form can result in rich interaction (Wasko & Faraj, 2000).

The considerable distinctive feature of online COPs is that members come together in a supportive environment to share best practices, engage in critical reflection and share and create knowledge through relationships "rooted in shared values and nurtured by cohesiveness and trust" (CPsquare-The Community of Practice on community practices). This makes them different from other online groups or gatherings where the main interest is the co-creation of experience, for example. Social media and network tools support online interactions and provide a means to bring people together, but online communities of practice can only be successful when there is trust among members (Sousa et al., 2011; Leimeister, Ebner, & Krcmar, 2005).

It is purported that 'collaboration' is the most suitable type of interaction for the purposes of COPs. Friend and Cook (2013) describe interpersonal collaboration as interaction between two or more

people, who are working towards achieving a mutual goal through sharing resources and shared responsibility (Friend & Cook, 2013). While the benefits of collaboration in online COPs are numerous, there are also some noted barriers precipitated by the absence of non-verbal cues (Swan & Shih, 2005). The aspects of building trust in the online COPs will be examined in detail in the following sections.

**Building Trust in Online Communities of Practice**

It seems that the most significant element of the success of the online COPs is trust (Hsu et al., 2007). Low participation (Beenen et al., 2004). Ardichvili, Page and Wentling (2003) is generally caused by fear of criticism or lack of confidence in the importance or accuracy of their contributions, more often manifest in pure online communities than hybrid or face-to-face communities (Wegener & Leimeister 2012). Building trust is therefore a crucial element in COP development, but this can be challenging in online collaborative spaces which rely on primarily written communication, such as discussion boards, blogs and wikis. Cultivating trust in an online community is a time-consuming and dynamic process. Hsu, Ju, Yen and Chang (2007) assert that building and sustaining trust can be done in different stages. They propose three types of trust: status-based trust, information-based trust and identification-based trust.

*Status-based trust*

This type of trust, normally the first to be assessed by individuals before joining the COP, can be conceived as the inventory of gains in terms of social capital further converted to economic gains. Gains include higher social status (compared to the status where the participant stood prior to joining the COP, increased knowledge, improved capabilities and decreased costs, resulting from the acquisition of more efficient methods of conducting business (Hsu et al., 2007).

*Information-based trust*

Information-based trust is based on a feeling of security in regard to “privacy and technology mechanisms” (Hsu et al., 2007, p. 160). It does not concern relationships with other members but rather the system itself and its ability to make members feel safe. Ardichvili (2008) claims that members’ trust prior to joining the community, the mental image that they develop about perceived risks, benefits and disadvantages will definitely shape their intentions to join. Once member of the COP, their interactions and willingness to take part in knowledge-sharing interactions will depend on their sustained assessments of these components, risks, benefits and concerns. Concerns perilous to the sustained participation include perceived risk of the online community using personal information for other purposes or sharing contributions without permission. COPs can avoid such scenarios arising by developing, implementing and observing clearly articulated standards for sharing knowledge and privacy rules which in turn can reduce anxiety or unwillingness to contribute (Ardichvili et al., 2006). These policies and guidelines can be posted on the community website, along with induction materials and compulsory participation agreement to the rules of engagement. Byington (2011).

*Identification-based trust*

This particular type of trust-building involves participants getting acquainted with each other through repeated social interactions facilitating the understanding of how each and every member of the COP will behave. This is the final and perhaps most crucial stage of trust building as it can pose a serious challenge for members who have never met in person (Hsu et al., 2007). The challenging nature of this particular type of trust-building lies in the fact in the asynchronous nature of online computer technology, which, on the other hand is extremely beneficial in collaboration opportunities that may not occur in face-to-face interaction. Postmes, Spears & Lea (2002) argue that members are more

likely to develop relationships if they have opportunities to learn personal information about each other through the use of profiles containing personal details such as photos, professional experience and background. Including social networking information can help build bonds, as people are more trusting of those who know they have a shared acquaintance among their in-group members. A supportive online environment can be created through the use of first names, greetings, and positive feedback (Flatley, 2005). As the community is creating its shared repertoire and mutual engagement, members can begin responses with expressions of agreement such as "I agree with you" to offer support, while the use of the pronoun "we" can further develop the inclusiveness of the community (Clark, 2009). Infusing the group with individual portions of enthusiasm is also germane to trust, especially in the group's early life.

*Resulting from the build-up of trust: Competence-based trust.*

Through the expression of thought, opinion and feeling in responses, storytelling and narrative, members can get to know each other and in turn strengthen the bonds of trust. It is suggested that higher trust also leads to sharing knowledge of higher quality (Chiu, Hsu & Wang, 2006).

While engaging in frequent and rich communication, members should also pay attention to the community's established norms of communication articulated in posted community guidelines or informally developed over time, as well as common "netiquette", which includes rules for general cyberspace behaviour (Clouder et al., 2011). Members who follow the community's norms and common-sense etiquette for online communication may instil a higher sense of "competence-based trust", which is based on the feeling that someone is capable and worth learning from (Hsu et al., 2007).

Elements of behaviour or attitude that are detrimental to the build-up of this type of trust is the direct attack on people's contributions, displays of egoism and exhibitionism, which can easily scare off members. On the other hand, disagreement, often concealed or repressed in face-to-face communication can be brought to surface with a greater ease and without offence because comments can be framed in a non-offensive manner Clouder et al. (2011). They found that disagreements, which were found to be infrequent, were often prefaced with acknowledgement or partial agreement, followed by "but" and qualifications such as "I think". Frequently, as it has been noted, the use of supportive language and communication, beyond its supportive function of building relationships and trust, is not necessarily constructive or honest (Johnson, 2001).

It is the role of the COP facilitator to install and disseminate trust in the group by individually gaining the trust of each of the members and by identifying individual skills and aligning tasks with their interests and knowledge, while also setting clear objectives and recognizing achievement. Lin, Hung & Chen (2009) suggest that knowledge-sharing activities should not be introduced until after the creation of a culture of positive and supportive interaction. When setting challenges for individuals, the facilitator needs to carefully select language which will inspire and motivate the members, based on his knowledge of the members' perspectives. The facilitator can also improve trust relationships by sharing personal experiences (Lin et al., 2009).

Abrams, Cross, Lesser and Levin (2003) provide additional cues of behaviours nurturing identification-based trust in COPs or other knowledge-sharing networks with the objective of situational learning:

**Be consistent between word and deed**. The alignment of trust and action helps create a feeling of trust. If a community member promises to follow up on a question or provide additional information but does not, it is natural to question his/her interests and commitment.

**Ensure frequent and rich communication**. More frequent interaction provides more opportunity to develop a shared vision and language, which in turn builds trust. Postings alone do not constitute an online community of practice; it is the active participation through the use of search tools, asking questions, giving advice and requests for clarification that creates a dynamic community of knowledge sharing and creation (Ardichvili et al., 2003). When members post questions or comments, it is important for responses or advice to be given, resources to be provided, or other types of acknowledgement to be made.

The nature and quality of content of the interactions among the members of COPs is dependent on the purpose established at the formation. A common understanding based on transparent communication, void of fallacies and misunderstandings is needed as virtual COPs may span over organizations, regions or continents. Equally important is a common understanding and sharing of values among the members as COPs can span over diverse regions or countries. In this case, members must find mechanisms to clarify messages to avoid misunderstandings due to cross-cultural language barriers or different understanding of technical jargon.

The quality and "richness" of contributions is also important for relationship building and the creation of knowledge. Daft and Lengel (1986, p. 560) define richness as "the ability of information to change understanding within a time interval". Communication transactions are considered to be rich if they "clarify ambiguous issues to change understanding in a timely manner" (p. 560). Daft and Lengel (1986) argue that face-to-face is the richest form of communication because it allows for expression of content using body language, tone, and voice in addition to spoken language, while Jarvenpaa and Leidner (1999) assert that computer-mediated communication is just as effective as face-to-face communication but has a slower rate of transfer. This slower rate of transfer can in fact be an advantage in that the asynchronous mode eliminates the face-to-face cues such as voice and visible reactions to show approval or disapproval and gives members more time to process messages and respond in a thoughtful and reflective manner (Allard et al., 2007).

For the efficient functioning of the online COPs it is useful to design and introduce a Netiquette (rules of online communication). Netiquette includes rules for politeness and courtesy but can also cover other expectations for writing style and technique. For example, the type of community building tool will determine the length of the posting; discussion-oriented groups will tend to have longer threads and more involvement. The language used will depend on the interactive technology tool; for example, blogs generally include posts written using conversational language (Flatley, 2011). Each post should be given a clear and specific title and topic tags to facilitate the search process, especially when the COP has a particularly large membership (Wasko & Faraj, 2000). Whenever possible, links to articles referenced should be provided to make it easier for those reading. This can increase the "shared repertoire" produced by members (Garavan et al., 2007). Participants who follow the general norms established of the community of practice will be perceived as more competent and trustworthy.

**Virtual vs. face-to-face COPs**

Now that we have seen the most important features of the modus operandi of online or virtual COPs, a few words of caution can be said about their weaknesses. Virtual COPs (vCOPs) massively rely on sustained access to quality technology making it such an exciting prospect for use for example within secondary schools, where educators can engage their students and facilitate their learning through collaborative and accessible learning environments. However, this fantastic opportunity may not prevail in settings where access to technology is not available or sustained, as a chain reaction of weakening engagement, one of the most fundamental and driving elements of the COPs success, will be generated by the feeble level of acceptance of the technology and the vCOP (Nistor et al., 2015).

Virtual COPs in the classroom enhance students' technological literacy, an important skill in the *digital age* (Davis & Goodman, 2014). This particular skill is a key competency of global employability in the furthering of career development of students. Of course, to make vCOPs happen, students must be in the position to access technology.

COPs have come to existence with the design and introduction of face-to-face COPs (f2fCOPs), which are the physical *bricks and mortar* COPs. In academic research, there is much discussion about their prevalence and advantages over vCOPs. Among other weaknesses of vCOPs, the lack of non-verbal cues and social immediacy, often leading to disinhibition amongst members of online communities can be mentioned. Disinhibition can be benign (self-actualisation of fears or emotions otherwise hidden from society) or toxic (offensive language, insensitive criticisms or bullying) (List et al., 2015). In addition to disinhibition the lack of immediacy in online COPs when compared with f2f COPs is a major challenge to the value of vCOPs which rely on, "ongoing participation of… members" (Cheung, Lee, & Lee, 2013, p. 1358), to achieve results. Without ongoing participation, which is driven by the social and non-verbal aspects of f2f COPs, vCOPs often fade into obscurity becoming what Phang, Kankanhalli and Sabherwal (2009) refer to as "cyber ghost towns" (p. 722), referring to the absence of COP members and the lack of their activities. It is suggested that as an ultimate solution, it is the combination of face-to-face and virtual communication (interface) that the efficiency of COPs can be vastly improved both in terms of knowledge sharing and learning, and in terms of accessibility and engagement within collaborative yet social learning environments

**Merged models of vCOPs and f2f COPs**

It is at the interface between online vCOPs and face-to-face COPs that students receive the best of both worlds. Ellis et al. (2014) proposes a face-to-face residency in conjunction with online collaborative learning environments to ensure the physical and electronic environment of participants is suited to their individual learning needs. This type of compound model offers positive results. A face-to-face residency in learning environments allows students to engage in challenging activities which build social collaboration, trust and collegiality within the community of practice, the classroom and with the teacher both virtually and physically. A different means of establishing this interface between virtual and face-to-face COPs is suggested by Fitzpatrick (2014) where the use of a class blog is to develop a shared domain of interest amongst music teachers and their classes. The approach taken by Fitzpatrick (2014) builds on the ideas presented by Wenger (2011) that individuals in a COP, whether it be virtual or face-to-face, "must share interest in a particular phenomenon or experience… at the center of their purposeful engagements with one another" (p. 97). The interface between vCOP and f2f COP is where this shared interest can blossom into a fully active and engaged COP, one where the possibility of becoming a cyber ghost town is heavily mitigated by a continued and refreshing engagement in a shared goal (Phang et al., 2009).

One of the established interfaces of vCOPs as integrally linked to f2f COPs is cited by Forbes and Skamp (2014). Upon investigation of a program called *MyScience* and its implementation within Australian schools, they came to the conclusion that learning as a form of participation is integral to the success of new teaching methods and pedagogies within the classroom. These findings support and reinforce the need for face-to-face interactions within vCOPs to ensure student engagement. It has become clear that it is not enough simply to have students blogging, they need to engage with the real world to ensure they do not develop toxic disinhibitions, miss critical non-verbal signals, and remain actively engaged in their learning as participants. The hypothesis that face-to-face learning can be efficiently complemented by virtual alternatives is further supported by McConnell, Parker, Eberhardt, Koehler and Lundeberg (2013), suggesting that teachers themselves preferred face-to-face learning within their own professional development, but equally benefited from the accessibility of online COPs. Based on the above findings, it can be postulated that teaching using a combined

approach, by creating an interface for student learning somewhere between the vCOP and the f2f COP is a model that has definite advantages. The test of the viability of the merged models lies in the future applications in educational settings.

**Conclusion**

A thriving community of practice consists of meaningful knowledge exchange and ongoing collaboration for the purpose of personal or professional growth. This paper has outlined how the reliance on written communication in virtual communities can act as a barrier but also an enabler in the process of building trust among COP members. While the advantages of both models are obvious, there are some drawbacks that can hinder their efficient and efficacious implementation. To overcome the drawbacks, the paper introduces a merged model drawing on the advantages of both, suggesting that the widespread use of the model will be contingent on positive tests of viability in various educational settings.

**Resources**


- Abrams, L.C., Cross, R., Lesser, E. & Levin, D.Z. (2003). Nurturing interpersonal trust in knowledge-sharing networks. *Academy of Management Executive, 17* (4), 64-77. doi: 10.5465/AME.2003.11851845
- Allard, C.C., Goldblatt, P.F., Kemball, J.I., Kendrick, S.A., Millen, J. & Smith, D.M. (2007). Becoming a reflective community of practice. *Reflective Practice: International and Multidisciplinary Perspectives, 8* (3), 299-314. doi: 10.1080/14623940701424801
- Ardichvili, A. (2008). Learning and knowledge sharing in virtual communities of practice: Motivators, barriers, and enablers. *Advances in Developing Human Resources, 10 (4)*, 541-554. doi: 10.1177/1523422308319536
- Ardichvili, A., Page, V. & Wentling, T. (2003). Motivation and barriers to participation in virtual knowledge-sharing communities of practice. *Journal of Knowledge Management, 7* (1), 64-77. doi:10.1108/13673270310463626
- Bagozzi, R.P. & Dholakia, U.M (2002). Intentional social interaction in virtual communities. *Journal of Interactive Marketing, 16* (2), 2-12. doi: 10.1002/dir.10006
- Beenen, G., Ling, K., Wang, X., Chang, K., Frankowski, D., Resnick, P., et al. (2004). *Using social psychology to motivate contributions to online communities.* Paper presented at the ACM conference on Computer Supported Cooperative Work, Nov. 6-12, Chicago. Retrieved from http://repository.cmu.edu/cgi/viewcontent.cgi?article=1087&context=hcii
- Byington, T. (2011). Communities of practice: using blogs to increase collaboration. I*ntervention in School and Clinic, 46* (5), 280-291. doi: 10.1177/1053451210395384
- Chiu, C.M., Hsu, M.H. & Wang, E.T.G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision*
- *Support Systems, 42*, 1872-1888. doi: 10.1016/j.dss.2006.04.001
- Clark, M. (2009). The discursive construction of interpersonal relations in an online community of practice. *Journal of Pragmatics, 41*, 2333-2344. doi: 10.1016/j.pragma.2009.04.001
- Clouder, D.L., Goodman, S., Bluteau, P., Jackson, A., Davies, B. & Merriman (2011). An investigation of "agreement" in the context of interprofessional discussion online: A "netiquette" of interperprofessional learning. *Journal of Interprofessional Care, 25* (2), 112-118. doi: 10.3109/13561820.2010.500445
- Cox, A. (2005). What are communities of practice? A comparative review of four seminal works. *Journal of Information Science, 31* (6), 527-540. doi: 10.1177/0165551505057016
- *CPsquare-The Community of Practice on community practices: Our vision*. Retrieved January 11, 2018 from http://cpsquare.org/vision/
- Daft, R.L. & Lengel, R.H. (1986). Organizational information requirements, media richness and structural design. *Management Science, 32* (5), 554-571. doi: 10.1287/mnsc.32.5.554

- Ellis, J., Arnone, M., Levinson, N., & Cogburn, D. L. (2014). Evaluating the Role of Face-to Face Residencies in Cross-National, Accessible Cyberlearning (pp. 62–71). IEEE. http://doi.org/10.1109/HICSS.2014.17
- Fitzpatrick, K. R. (2014). Blogging through the music student teaching experience: Developing virtual communities of practice. *Research Studies in Music Education*, *36*(1), 91–105.
- Flatley, M.E. (2005). Blogging for enhanced teaching and learning. *Business Communication Quarterly, 68* (1), 77-80.
- Friend, M., and Cook, L., (2013). *Interactions: Collaboration Skills for School Professionals*, Pearson, 7th Edition.
- Garavan, T.N., Carbery, R. & Murphy, E. (2007). Managing intentionally created communities of practice for knowledge sourcing across organisational boundaries: insights on the role of the CoP manager. *The Learning Organization, 14* (1), 34-49. doi: 10.1108/09696470710718339
- Hsu, M.H., Ju, T.L., Yen, C.H. & Chang, C.M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies, 65* (2), 153-169. doi: 10.1016/j.ijhcs.2006.09.003
- Jarvenpaa, S.L. & Leidner, D.E. (1999). Communication and trust in global virtual teams. *Organization Science, 10 (6)*, 791-815. Retrieved from http://www.jstor.org/stable/2640242
- Johnson, C.M. (2001). A survey of current research on online communities of practice. *The Internet and Higher Education, 4, 4*5-60. doi: 10.1016/S1096-7516(01)00047-1
- Lave, Jean, and Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral anticipation.* Cambridge: Cambridge University Press.
- Leimeister, J.M., Ebner, W. & Krcmar, H. (2005). Design, implementation and evaluation of trust-supporting components in virtual communities for patients. *Journal of Management Information Systems (JMIS), 21* (4), 101-135. Retrieved from http://www.jmis-web.org/articles/605
- Lin, M.J., Hung, S.W. & Chen, C.J. (2009). Fostering the determinants of knowledge sharing in professional communities. *Computers in Human Behavior, 25* (4), 929-939. doi: 10.1016/j.chb.2009.03.008
- Martin-Niemi, F. & Greatbanks, R. (2010). The *ba* of blogs: Enabling conditions for knowledge conversation in blog communities. *VINE, 40* (1) 7-23. doi: 10.1108/03055721011024892
- McConnell, T. J., Parker, J. M., Eberhardt, J., Koehler, M. J., & Lundeberg, M. A. (2013).Virtual Professional Learning Communities: Teachers' Perceptions of Virtual Versus Face-to-Face Professional Development. *Journal of Science Education and Technology*, *22*(3), 267–277. http://doi.org/10.1007/s10956-012-9391-y
- Nistor, N., Daxecker, I., Stanciu, D., & Diekamp, O. (2015). Sense of community in academic communities of practice: predictors and effects. *Higher Education*, *69*(2), 257–273. http://doi.org/10.1007/s10734-014-9773-6
- Pan, S.L. & Leidner, D.E. (2003). Bridging communities with information technology in pursuit of global knowledge sharing. *The Journal of Strategic Information Systems, 12* (1), 71-78. doi: 10.1016/S0963-8687(02)00023-9
- Phang, Kankanhalli, A., & Sabherwal, R. (2009). Usability and Sociability in Online Communities: A Comparative Study of Knowledge Seeking and Contribution. *Journal of the Association for Information Systems*, *10*(10), 721–747.
- Postmes, T., Spears, R. & Lea, M. (2002). Intergroup differentiation in computer-mediated communication: Effects of depersonalization. *Group Dynamics: Theory, Research, and Practice, 6* (1), 3-16. doi: 10.1037/1089-2699.6.1.3
- Sousa, S.C., Lamas, D. & Dias, P. (2011). The interrelation between communities, trust and their online social patterns. In *2011 IEEE International Conference on Dependable, Autonomic and Secure Computing,* 980-986. doi: 10.1109/DASC.2011.162

- Swan, K., & Shih, L.F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks, 9*, 115-136. Retrieved from http://www.academia.edu/399290/On_the_Nature_and_Development_of_Social_Presence_in_Online_Discussions
- Wasko, M.M. & Faraj, S. (2000). "It is what one does": why people participate and help others in electronic communities of practice. *Journal of Strategic Information Systems, 9* (1-2), 155-173. doi: 10.1016/S0963-8687(00)00045-7
- Wegener, R. & Leimeister, J.M. (2012). Virtual learning communities: success factors and challenges. *International Journal of Technology Enhanced Learning (IJTEL), 4* (5/6), 383-397. doi: 10.1504/IJTEL.2012.051814
- Wenger, E. (2000). Communities of practice and social learning systems. *Organization, 7* (2), 225-246. doi: 10.1177/135050840072002
- Yuki, M., Maddux, W.M., Brewer, M.B. & Takemura, K. (2005). Cross-cultural differences in relationship- and group-based trust. *Personality and Social Psychology Bulletin, 31* (1), 48-62. doi: 10.1177/0146167204271305.

**Brian NOLAN**

# On the complicated relationship between (Irish) culture and language

## Introduction

In this paper we examine the nature of the relationship between culture and language, and its complexity, and how culture informs language usage. Our cultural sense entails our knowledge about cultural norms, beliefs and values of human society, a community, and our generalised knowledge about the language system that we use in our social and communicative interactions. Therefore, our cultural knowledge includes ontology, representation, reasoning, cultural schemata, cultural metaphors and cultural conceptualisations. Many artists (painters and poets) use language in the service of their art, and visual artists frequently use text directly in paintings as a cultural visual-linguistic semiotic.

The hypothesis in this research study is that meaning in culture is facilitated by language and that language draws on cultural common ground while the cognitive processes that retrieve a meaning from language use are argues to be those characterised within Relevance Theory. Additionally, we argue that these cognitive processes also apply to retrieving meaning from art, music, poetry, and artefacts within the linguistic landscape.

The organisation of this paper is as follows. First, we discuss the difference between culture and civilisation, while highlighting the constituents of culture. We follow this with an overview of the relationship between culture, worldview and introduce the idea of common ground[1] as an important consideration. Then, we look at the application of language in the service of culture, taking in the way that artists employ language in their work. Then we look at how meaning is retrieved from art and language. Several examples are provided from poetry, the Irish cultural narrative and linguistic landscape, that reinforce the necessity of a rich shared common ground. Our conclusions will draw together several threads to relate culture, common ground, language and the cognitive operations that deliver a relevant meaning.[2] To provide evidence to support this hypothesis, we examine next the questions of what is culture, and is culture different to civilisation?

## Culture and civilisation

Civilisation is considered to be all of human society with its well-developed social organisations, including the culture and way of life of a society at a particular period in time. Civilisation is therefore the condition that exists when people have developed effective ways of organising a society and care about art, science, and such like - it's the social process whereby societies achieve an advanced stage of development and organisation. Clearly, there is some overlap between culture and civilisation and it would be useful to define culture before we start our exploration.

The notion of what constitutes 'CULTURE' is slippery and tricky. It probably has at least four major senses and, as such, can mean (1):

[1] Kecskes, Istvan and Fenghui Zhang. 2009. Activating, seeking, and creating common ground: A socio-cognitive approach. *Pragmatics & Cognition* 17:2. 2009, 331–355. Doi 10.1075 / p&c.17.2.06kec issn 0929–0907 / e-issn 1569–9943. Amsterdam: John Benjamins.

[2] Eagleton, Terry. 2016. *Culture*. Connecticut: Yale University Press.

(1) The constituents of culture

| | |
|---|---|
| A body of artistic and intellectual work | **ARTEFACT** |
| A means of spiritual and intellectual development | **LANGUAGE** |
| The values, customs, beliefs and symbolic practices by which people live as a community | **WORLDVIEW** |
| A whole way of life viewed at some moment in time | **LIFESTYLE** |

'Irish culture', for example, can mean the poetry, music and dance of the people who inhabit the island of Ireland; or it can include the kind of food they eat, the sort of sports they play and the type of belief systems they practise.

The poet T.S. Eliot[3], in his 1973 book, *Notes Towards the Definition of Culture*, took culture to include 'all the characteristic activities and interests of a people'. We might say that CIVILISATION is to do with organisation of, and facts within, a society, while CULTURE is to do with the values of a society. Civilisation, then, is the precondition of culture, and refers to a world that is manufactured, fabricated and built by people working together. Language, as a means of communication, is essential to this. I now want to discuss culture in relation to cultural common ground and language.

**Culture, worldview, common ground, and language**

Culture is a kind of social-collective-cognitive background in which we wrap all our beliefs, instincts, prejudices, sentiments, opinions and assumptions. Embedded within a culture is a worldview, and every language gives voice to the distinctive worldview of a specific people. A worldview is a theory of the world, used for living in the world. Our worldview is a mental model of our reality — a framework of ideas and attitudes about the world, ourselves, and of life. Is a worldview important? Yes, of course it is. We might compare the worldview of Europeans of 100+ years ago to that of Europeans today. Of course, it is clear that much has changed in the worldview of people.

There is a rich diversity of cultures (and languages) in our world and a culture is at its finest when language successfully articulates and reflects on the common popular experience of the lives of those in the community. In this way, language and culture distil the intrinsic nature, character and essence of a people. What is shared in a community of speakers within a culture? Cultural knowledge residing in artefacts, language, worldview and lifestyle is shared. Cultural common ground provides the glue between language and worldview. Culture reflects the shared common ground for members of the same community and reflects the repository of our shared knowledge. As a living thing, culture is always a work in progress. In this view, common ground (Table 1) acts as a kind of decentralised knowledge system supporting the cognitive activation of a subset of relevant contextual knowledge.

The types of knowledge[4] characterised in common ground relate to declarative, procedural, heuristic, meta and structural knowledge, and cultural knowledge, along a scale from volatile and dynamic to less-volatile and less-dynamic.

[3] Eliot. T.S. 1973. *Notes Towards the Definition of Culture. London:* Faber & Faber

[4] Declarative knowledge describes known concepts, facts and entities, including simple statements that are asserted to be either true or false. It includes a matrix of attributes and their values so that an entity or concept may be fully described. Procedural knowledge of processes, rules, strategies, agendas, and procedures describes how something operates, and provides directions on how to do something. Heuristic or experiential knowledge guides our reasoning process. It is empirical and represents the knowledge compiled through the experience of solving past problems. Meta knowledge is high-level knowledge about the other types of knowledge. We use this type of knowledge to guide our selection of other types of knowledge for solving a particular issue and to enhance the efficiency of our reasoning by directing the reasoning processes. Structural knowledge is to do with our sets of rules, concept relationships and concept to entities relationships. Our mental model of concepts, sub-concepts, and entities with all their attributes, values, and relationships is typical of this type of knowledge.

Specifically, we argue that common ground contains relevant knowledge on local dialogue, language, environment, recent events, historical knowledge, common sense, cultural knowledge.

**Table 1. Tentative structure of common ground**

| Structure of common ground | Contains | Volatility / Dynamicity |
|---|---|---|
| | | |
| **Local dialogue** | • Salient events and references within the dialogue chain | More volatile / dynamic |
| **Language** | • Knowledge of the linguistic system |  |
| **Environment** | • Shared knowledge of the entities, actions and context of the local environment and which may prove relevant to the interlocutors within the dialogue.<br>• Meta and structural knowledge<br>• Knowledge structures within our overall mental models<br>• Schemata and frames | |
| **Recent events** | • Shared knowledge of the entities, actions in the context of the local environment.<br>• Declarative knowledge of concepts and facts | |
| **Historical knowledge** | • Shared cultural knowledge of (recent past to far past) historical context and associated entities, actions and consequences.<br>• Declarative knowledge of concepts and facts | |
| **Common sense** | • General ontological knowledge about the world, its entities and events.<br>• Heuristic and experiential knowledge.<br>• Schemata (Event, Role, Image, and Proposition)<br>• Frames | |
| **Cultural knowledge** | • Ways of doing things in our community,<br>• Ways of behaving in our society,<br>• Common belief sets,<br>• Cultural values,<br>• Shared perspectives<br>• Schemata and frames<br>• Shared worldview | Tending to be non-volatile / non-dynamic |

What about language? Language is a tool with wide ranging utility and purpose, with function and form developed and refined by humans to satisfy their social need for meaning in the world and within community. The things in the world, entities and actions, are reflected in language and language allows us to communicate regarding the collection of 'things' of interest to a speech community. In fact, language represents our greatest display of human cognitive power. It is the basis for mathematics, science, philosophy, art, music, and literature. All human languages exist to solve the human problems relating to communication and social cohesion.

How then might we usefully define language? A good definition is provided by Merriam-Webster's online dictionary (2).

(2) Definition of language

Merriam-Webster's online dictionary[5] defines language as '*a systematic means of communicating ideas or feelings by the use of conventionalised signs, sounds, gestures, or marks having understood meanings*.'

Language is crucial for making sense of the world. In particular, we use language for categorising and classifying the components of the world around us. This involves cognition and conceptualisation. As humans, we have evolved to create and store concepts through signs and to recognise relationships between the signs we create. A sign maps form with meaning. Each culture determines which conceptualisations[6], categorisations and cultural generalisations are the most important to it, and the vocabulary and grammar of the languages spoken within that community reflect its priorities of knowledge. A language, therefore, is a repository of the riches of highly specialised cultural experiences.

Language in interaction is fundamentally a cultural activity and, at the same time, language is a tool is instrument for organising our cultural domains. Functionalist linguistics, is a group of approaches to the characterisation of language that understands language structure as reflecting language use within a community of speakers and as such, is sensitive to culture. Functionalist linguists[7] view language as a communicative tool used to relate our experiences and mental representations to the external world. Language is used to maintain cultural conceptualisations through time whereby people use the narrative of oral traditions to connect people, place, history, and culture.

Cultural artefacts such as painting, rituals, language and gesture are all instantiations of cultural conceptualisations and, as such, have a cognitive dimension. The points of intersection between culture, cognition and language all relate to common ground and are therefore concerned with the nature of cognition within the community group. In this regard, common ground acts as a kind of decentralised knowledge system supporting distributed cognition within a community supporting speech acts.

Additionally, it has been argued that the emergence, transmission and perpetuation of cultural conceptualisations are phenomena best understood as constituting a complex adaptive system. Understood as a complex adaptive system, both language and culture can be conceptualised as forming a complex intertwined nexus while allowing us to appreciate the structural connections between them.

Functionalist-cognitive approaches to linguistics, sensitive to the cultural connection, equate cultural cognition with socially situated activity mediated by language.

**Application of language in the service of culture**

Nothing has more to tell us about what it means to be human than the forms and uses to which we put language. Languages are central to our achievements in art, science, and gives us access to all the knowledge and skills learned by humans. We have, in a cultural community, the shared knowledge of that community (the shared common ground) organised through language. In this sense, culture is at the interface of knowledge and language. We find examples of this readily in the arts and in poetry.

[5] https://www.merriam-webster.com/dictionary/language [last accessed 10/9/2018]

[6] Sharifian, Farzad. 2011. *Cultural Conceptualisations and Language: Theoretical framework and applications* (Cognitive Linguistic Studies in Cultural Contexts). Amsterdam/Philadelphia: John Benjamins Publishing Company.
Sharifian, Farzad. (ed.). 2015. *The Routledge Handbook of Language and Culture*. New York/London: Routledge/Taylor and Francis.

[7] Nolan, Brian. 2012. *The structure of Modern Irish: A functional account*. Sheffield: Equinox Publishing Company.

***Language in the visual arts***

Taking two examples from the visual arts, the globally known artists Cy Twombly (Figure 1) and Jean-Michel Basquiat (Figure 2). Twombly often quoted the poets Stéphane Mallarmé, Rainer Maria Rilke, John Keats, as well as many classical myths and allegories in his works.

In contrast to Cy Twombly, Jean-Michel Basquiat's art focused on elements of contemporary culture and civilisation. In his painting, Basquiat appropriated poetry, drawing, and painting, and conflated text and image, abstraction, and figuration, with various kinds of textual information mixed freely in his work. In this way, Basquiat used textual commentary in his paintings to better understand deeper truths about the individual, as well as society and its culture.

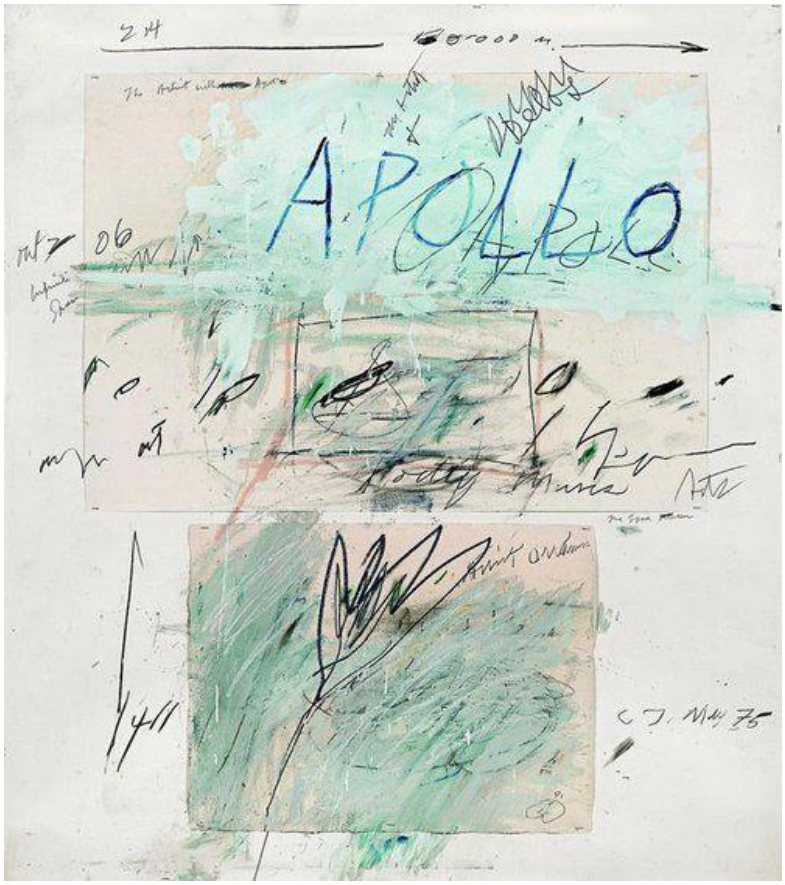



**Figure 1. Cy Twombly painting – Apollo**[8]

[8] Image from https://www.pinterest.co.uk/pin/319192692324857963/ [last accessed 10/9/2018]


**Figure 2. Basquiat painting – Ocean**[9]

***The ways artists use words in visual art***

There are several ways in which visual artists use words or text in visual art. Words can be used explicitly[10] when they are included in, or on, the visual artwork – we have seen examples of this in Figures 1 and 2. We are all familiar with this explicit use of words within medieval art where the words assume a core prominent position. In particular, medieval illuminated manuscripts (Figure 3) are a key example of an art form that relies on the cohesive interdependence of graphics and language where words and image contribute equally to the overall reading.

[9] Image from https://i.pinimg.com/originals/84/c4/a4/84c4a495d52a58640ab33613798d2a7c.jpg [last accessed 10/9/2018]
[10] Dixon Hunt, John., David Lomas and Michael Corris (eds). 2010. *Art, word and image: 2000 years of visual/textual interaction*. London: Raektion Books.


**Figure 3. The Book of Kells, *folio 292r* with the text that opens the Gospel of John**[11]

In visual art forms, the explicit words are easily recognised, and are widely accepted while generally understood in virtue of the contribution they make. Indeed, as a more contemporary example, we can consider pop art (Figure 4), modern cartoons, and MEMES[12] where words are used as a visual semiotic linguistic device that has a cohesive interdependence with the images displayed.

[11] Image from https://en.wikipedia.org/wiki/Book_of_Kells#/media/File:KellsFol292rIncipJohn.jpg [last accessed 10/9/2018]
[12] Diedrichsen, Elke. To appear. On the Interaction of Core and Emergent Common Ground in Internet Memes. *Internet Pragmatics,* special issue on the Pragmatics of Internet Memes. Amsterdam: Benjamins.


**Figure 4. The painting *Masterpiece* by the American artist Roy Lichtenstein**[13]

The word can also appear Implicitly within a supplementary role, (Figure 5) collaborative with the visual form, when they are added to supplement the visual component of a work in some way. The artist's intention is important here and it seems that, by the design of the artist, implicit words are more elusive.

[13] Image from https://en.wikipedia.org/wiki/Masterpiece_(Roy_Lichtenstein) [last accessed 10/9/2018]


**Figure 5. '*My Studio'* - painting by Robert Ballagh[14]**

The painting by the Irish artist Robert Ballagh is a Pop Art version of Delacroix's *Liberty at the Barricades*. The studio setting is symbolised by the inclusion of various art materials. There are several interesting uses of symbols and text in this painting. The newspaper mentioned in this painting as supplementary text is the 'Irish Independent' and the name of the city of Derry alludes to the struggles for freedom and civil rights that lead to civil conflict in 1969 and the declaration of Free Derry. The image of the painting *Liberty Leading the People* by Eugène Delacroix is shown (embedded in the painting as a postcard image) to ground the reference for the viewer. The central image of the painting is that of *Liberty Leading the People,* but in a contemporary Irish context.

The flag in the painting is not the French tricolour but, instead, is the Starry Plough of the Irish Socialist movement. The Starry Plough flag was originally used in 1914 by the Irish Citizen Army, a socialist Irish republican movement of that time, and was subsequently adopted as the emblem of the Irish Labour movement. The use of the flag here signals that this a people's struggle for basic rights under an oppressive regime. Here, the artist's intention is that visual works with words in a supplementary role require the viewer of the art to formulate *in their own words, for themselves,* what is depicted, notwithstanding the level of abstraction (or not) in the art work.

In instances with these implicit usages, the verbal component supplements the visual to complete the underspecified communication such that the viewer, through a series of cognitive operations, retrieves a meaning from the work. We will come back to these cognitive operations shortly and will introduce the ways in which these function, as characterised by Relevance Theory for linguistic pragmatics, to make some connections and correspondences there between art and text.

[14] Image from http://www.robertballagh.com/paintings.php [last accessed 10/9/2018]

Words may intentionally have a high degree of cohesive interdependence such that it is difficult to discern between explicit and implicit usage. In this category of word use within the art, the use of language with the visual component is deeply connected as a direct element of the artists strategy for communication within the overall art work. If we reflect for a moment about this use of language with art, we can recognise that we are actually quite used to words added to art, albeit in a variety of ways. We find these words, for example, in the titles given to paintings (Figure 6) and art objects, and on the captions of the work on the gallery wall, or in art books and catalogues. In this painting, the artist renders a pop art version of the Delacroix work *Liberty Leading the People* but the French tricolour is replaced by the red flag of Socialism.

**Figure 6. '*Liberty on the Barricades after Delacroix*' – painting by Robert Ballagh**[15]

The titles of paintings are usually created by the artist and with the intention of guiding the receptive viewer in the experience of the visual image, that is, in cognitively retrieving a meaning from the work. We can safely assume that paintings depend on this use of words to complement the human instinct to search for meaning in communicative works and that title is considered as having appropriate relevance to aid the art work's interpretation. The text guides the viewer's flow of thought through interpretation of the work, along with the viewing of the brush strokes, structural geometry and colour. In the absence of a title to a work – its verbal complement, we typically question whether a visual work of art is incomplete. In recognition of this, artists seem to need to title a work as 'Untitled'.

Many artistic works rely on words, and the felicitous application of language. Examples include maps, poetry, illuminated manuscripts, art, book design, advertising, film and video, and contemporary websites are modes of communication that rely on words and image. These visual-textual modes of

[15] Image from http://www.robertballagh.com/paintings.php [last accessed 10/9/2018]. Based on the painting of *Liberty Leading the People* by Eugène Delacroix commemorating the July 1830 Revolution which deposed King Charles X of France. A woman personifying the concept of Liberty leads the people forward over a barricade holding the flag of the French Revolution– the tricolour, which remains France's national flag. The figure of Liberty is a symbol of the French Republic.

communication are typically so interwoven that often the words seem to be fused as a component graphical image as well as having a linguistic connotation. We can refer to these works as having a cohesive interdependence, with unified graphics and text, as a complex verbal-visual sign. Again, we repeat that word and image, or text and object, are important mediators of meaning when used by the artist to guide the cognitive retrieval of a relevant meaning within the viewer.

***Retrieving relevant meaning from complex verbal-visual signs***

How does the viewer retrieve a relevant meaning? The conjunction of word and image engages our human cognitive capacity to map disparate elements and semantic networks of meaning onto each other. The word plus image guides the cognitive operations behind the retrieval of a relevant meaning. They function to create a vector for the viewer for retrieval of an unexpected but relevant meaning.

Central to this retrieval of meaning is the cultural common ground of the art creator and the art viewer. The text becomes an important *grace-note* guiding us forward in the retrieval of meaning. As such, the conjunction of word and image has the significant potential to capture the meaningful values within a culture. The cognitive operations that retrieve a meaning from the work of art are reminiscent of those characterised in Relevance Theory, within the field of linguistic pragmatics. Relevance theory is a framework for the study of cognition, proposed primarily in order to provide a psychologically realistic account of communication. Pragmatics is the study of how linguistic properties and their associated contextual factors interact in the interpretation of utterances. A sentence of a language can be considered as an abstract object with various morphosyntactic and semantic properties that are organised according to the grammar of the language. Pragmatics examines language in use in communication.

Relevance Theory considers that the actual act of communicating raises in the intended hearer particular expectations of relevance which are enough to guide the hearer towards the speaker's meaning (Noveck and Sperber[16] 2004). In Relevance Theory, relevance is defined as a property of inputs to cognitive processes. This include external stimuli, which can be perceived and processed, and mental representations, which can be stored, recalled or used as premises in inference. An input, then, is relevant to a hearer when it connects with the hearer's background knowledge, for example, knowledge in common ground, to yield new cognitive effects. Cognitive effects are adjustments that update the individual's set of assumptions resulting from the processing of an input in a context of previously held assumptions. To be more relevant and more worth processing, an Input should yield greater cognitive effects and/or involve a smaller processing effort.

In support of these ideas, Relevance Theory develops two general principles about the role of relevance in cognition and in communication (3):

(3) The role of relevance in cognition and in communication

| | |
|---|---|
| COGNITIVE PRINCIPLE OF RELEVANCE: | Human cognition tends to be geared to the maximization of relevance. |
| COMMUNICATIVE PRINCIPLE OF RELEVANCE: | Every act of communication conveys a presumption of its own optimal relevance. |

According to Relevance Theory, the presumption of optimal relevance conveyed by every utterance is precise enough to ground a specific comprehension heuristic (4):

[16] Noveck, Ira A. and Dan Sperber. 2004. *Experimental Pragmatics*. Hampshire UK: Palgrave Macmillan.

(4) Relevance Theory Comprehension Heuristic

| | |
|---|---|
| *Presumption of optimal relevance* | (a) The utterance is relevant enough to be worth processing.<br>(b) It is the most relevant one compatible with communicator's abilities and preferences. |
| *Relevance-guided comprehension heuristic* | *(a)* Follow a path of least effort in constructing an interpretation of the utterance (resolving ambiguities and referential indeterminacies).<br>*(b)* Stop when your expectations of relevance are satisfied. |

Relevance theorists (convincingly) argue that this approach has good explanatory power because it captures the idea that, in interpreting an utterance, the hearer automatically aims at optimal relevance. In this regard, the *hypothesis of graded salience*, proposed by Peleg, Giora and Fein[17] (2004: 172–186), assumes that more salient meanings are accessed faster, and that context also affects comprehension on-line. They hold that:

*It is widely agreed now that contextual information is a crucial factor determining how we make sense of utterances. The role of context is even more pronounced within a framework that assumes that the code is underspecified allowing for top-down inferential processes to narrow meanings down and adjust them to the specific context*.

In interpreting an utterance, the hearer will select knowledge from context to process the utterance so that it gives at least adequate cognitive effects with minimal processing effort. It is our view that the same cognitive processes characterised in Relevance Theory allows us to retrieve appropriate meaning from art. We assume the art to be relevant and therefore more worth processing, and the meaning we retrieve from the visual inputs yield significant cognitive effects and a smaller processing effort.

***Language and poetry***

We move on now to another use of words, poetry, where we can see how the selection of knowledge from context to process the poem gives appropriate cognitive effects with minimal processing effort. Common ground is crucial for the retrieval of meaning from the poem. In the poem (5) 'The Given Note' by Seamus Heaney[18] (from the collection *'Opened Ground* Poems 1966-1996'), the poet describes the way in which a Blasket fiddler retrieves the tune *Port na bPúcaí* from 'out of the night'. I quote a fragment from this poem.

(5)

**ON THE MOST WESTERLY BLASKET**
**IN A DRY-STONE HUT**
**HE GOT THIS AIR OUT OF THE NIGHT.**

**STRANGE NOISES WERE HEARD**
**BY OTHERS WHO FOLLOWED, BITS OF A TUNE**
**COMING IN ON LOUD WEATHER**
…

Through the language of the poem in describing how a fiddler crafted a tune that came out of the night, the fiddler becomes a metaphor for the poet himself, and his finding insights into human nature through the medium of language. Language is a powerful thing and a rich, shared common ground is necessary to allow us find meaning in this poem.

[17] Peleg, Orna., Rachel Giora and Ofer Fein. 2004. Contextual strength: The Whens and Hows of Context Effects. In Ira. A Noveck and Dan Sperber. *Experimental Pragmatics*. Hampshire UK: Palgrave Macmillan Ltd. 172–186.
[18] Heaney, Seamus. 2002. *Opened Ground:* Poems 1966-1996. London: Faber & Faber.

We get a different sense of this in the 1996 poem (6) 'Digging', also by Seamus Heaney[19] (from *Death of a Naturalist)*, in which the poet describes his father digging in the bog on their family farm. He admires his father's skill and relationship to the spade in the act of digging turf, but states that he will dig with his pen instead. This demonstrates Heaney's commitment as a poet as he names his pen as his primary and most powerful tool for the use of language.

(6)

…

**BETWEEN MY FINGER AND MY THUMB**

**THE SQUAT PEN RESTS.**

**I'LL DIG WITH IT.**

Another example of the expressive power of language comes from Irish by the poet Raftery where the language of the poem '*Is Mise Raifteirí'* (I'm Raftery) expresses considerable human kindness and warmth (7). Raftery[20] in his poems make rich use of metaphor, for example, THE HEART IS A CONTAINER OF EMOTION.

(7)

| | |
|---|---|
| *Is Mise Raifteirí an file,* | I'm Raftery the poet, |
| **LÁN DÚCHAIS IS GRÁDH,** | Full of hope and love, |
| *Le súile gan solas,* | With eyes without sight, |
| *Le ciúnas gan crá.* | My mind without torment. |
| | |
| *Ag dul síar ar m'aistear* | Going west on my journey |
| **LE SOLAS MO CHROÍ** | By the light of my heart. |
| *Fann agus tuirseach* | Weary and tired |
| *Go deireadh mo shlí* | To the end of my road |
| | |
| *Féach anois mé* | Behold me now |
| *Is mo chúl le bhfalla* | With my back to the wall |
| *Ag seinm ceoil* | Playing music |
| *Do phócaí folamh* | To empty pockets. |

The street art in Figure 7 is indicative of how the language lives within the linguistic landscape, and how the ideas within the poems resonate with us in a living culture. In particular, this street art illustrates how the cultural constituent of artefact, is the result of the expression of human culture in our world, within the linguistic landscape of Dublin city centre in this instance, where language is found in public spaces in the environment, and word, phrases and images are displayed, discovered and exposed in interesting and significant ways.

[19] Heaney, Seamus. 2006. *Death of a Naturalist*. London: Faber & Faber.

[20] Raftery was a poet, and a wandering musician with a fiddle. Like many vagrant 18th century musicians, he was blind (see Figure 7). This poem is famous and was written in a time of great poverty and hardship in Ireland, just before the famines of the 19th century. Raftery became a travelling bard known as the 'Kiltimagh Fiddler' and passed most of his time in area around Mayo and. Galway. He died on Christmas Eve 1835. https://en.wikipedia.org/wiki/Antoine_Ó_Raifteiri [last accessed 10/9/2018]

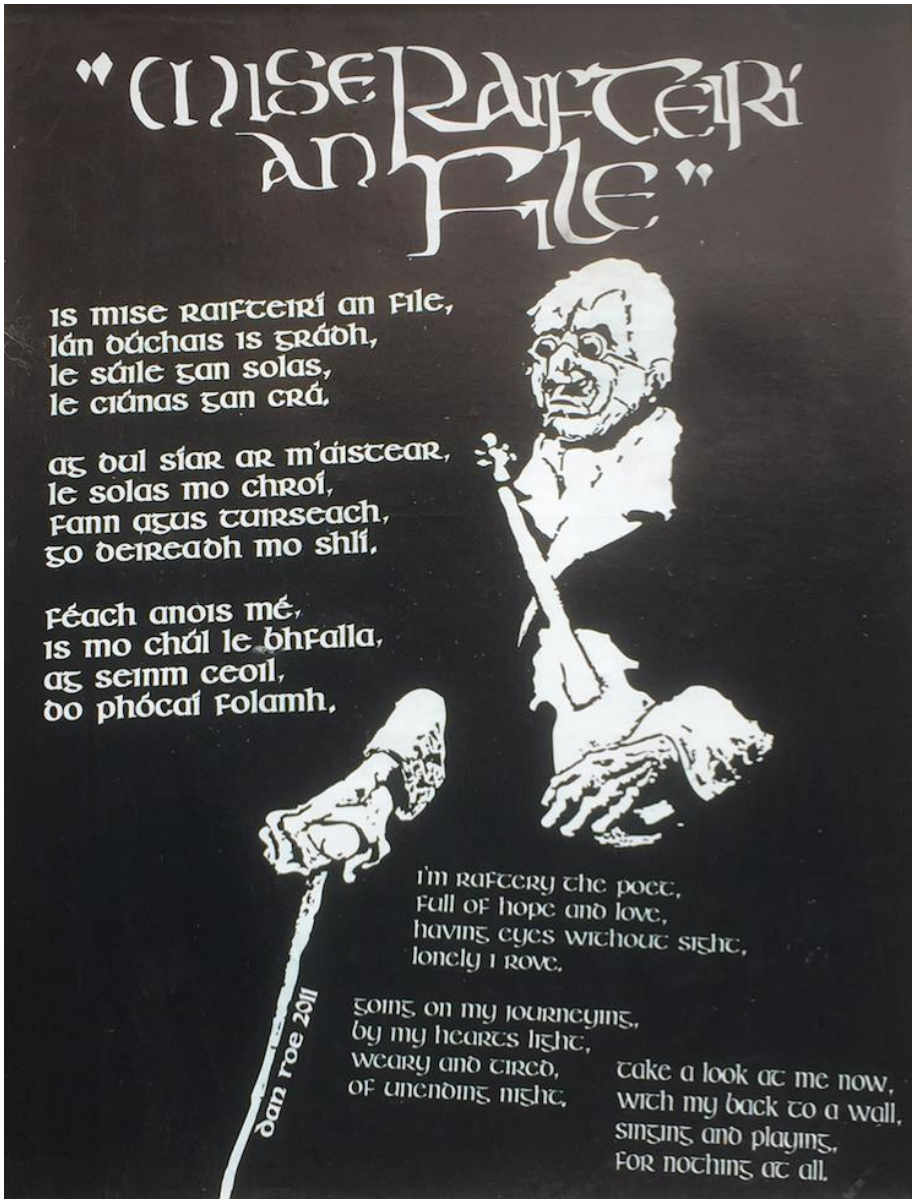



**Figure 7. Raftery the poet – Street art from Temple Bar Dublin**[21]

***The Irish cultural narrative***

Staying within the Irish cultural context, writers like W.B. Yeats, through language and poetry, mined the myths and archetypes of the Irish antiquity to create a cultural narrative. The linguistic landscape of our environment, considered in its broadest sense, is a particularly rich context area to explore the connection between culture and language through language found with artefacts of various kinds. The study of the linguistic landscape contributes to our insights on the relationship between culture, common ground and language[22]. The Irish landscape itself plays a role in this cultural narrative as it is littered with monuments and artefacts that are important with our sense of our culture, our connection to place, and who we are (Figure 8).

[21] Photo of the street art by this author. Note that the English translation in the street art is slightly different that the (more accurate) text in example (7).
[22] Mallory, J. P. 2013. *The Origins of the Irish*. London: Thames and Hudson.

**Figure 8 Newgrange – in the Boyne Valley, county Meath**[23]

One example is the Tara area of the Boyne valley in county of Meath, north of Dublin. Here, we find Newgrange, a 6,000-year-old passage tomb and temple with astrological, spiritual, religious and ceremonial importance. Building Newgrange was a significant cultural achievement for this Neolithic civilization. Additionally, Irish place names are like a rich cultural overlay available to us to explore within our linguistic landscape. Place names are often one of the few surviving indicators of a previous language and culture, and we can find ample vestiges in the place names of Ireland (Bally/*Baile* 'town', Kill/*Cill* 'church', *Inis* 'island', *Dun* 'fort', etc.).

Another example (see Figure 9) of a language-based cultural artefact that contributed to the Irish culture narrative through language is the ancient book *Lebor Gabála Érenn* (known in English as *The Book of Invasions*).

[23] Image from https://www.opw.ie/ga/annuachtisdeanai/2013/articleheading,25062,ga.html [last accessed 10/9/2018]

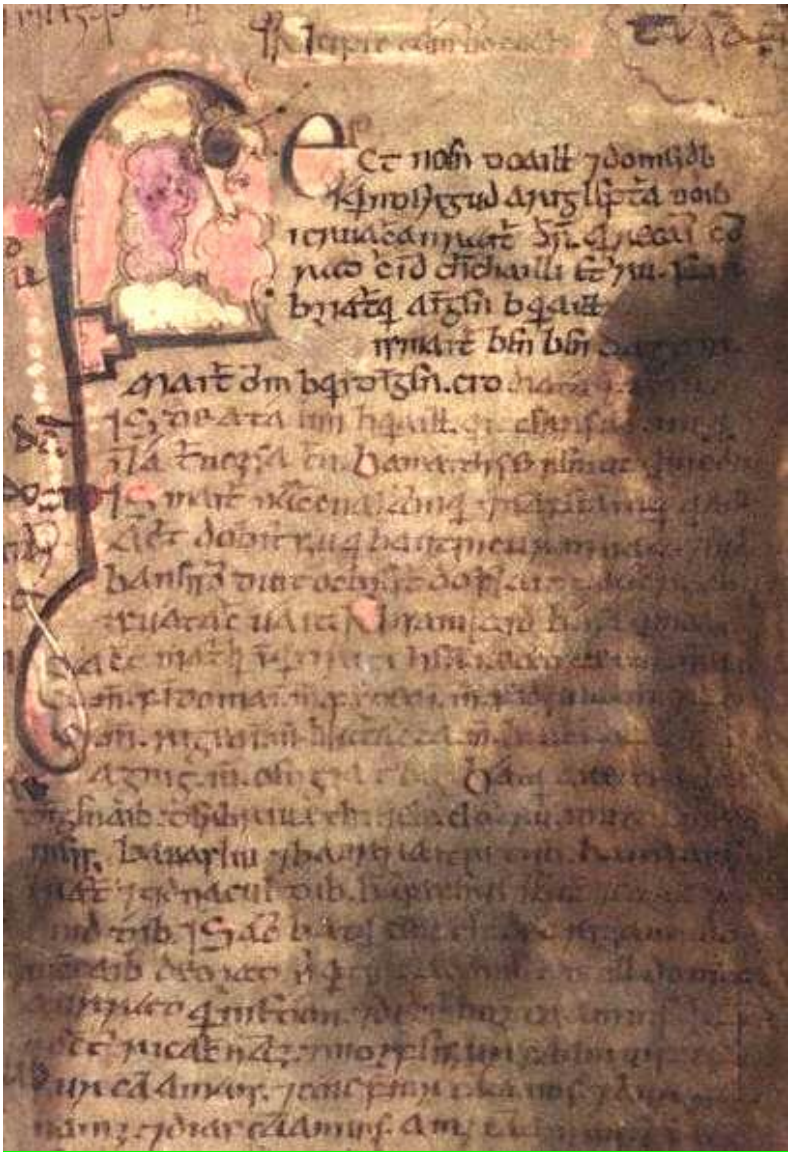


**Figure 9. *Lebor Gabála Érenn* (*The Book of the Taking of Ireland*)[24]**

This is a collection of poems and prose narratives that purports to be a history of Ireland and the Irish from the creation of the world to the Middle Ages. This book synthesised narratives that had been developing over earlier centuries of life in Ireland. A more recent example of a book that contributed to the Irish culture narrative through language is Ulysses (1922) by James Joyce[25], a novel about a day in the life of ordinary people in Dublin on 16th June 1904. The book was written by Joyce in Trieste, Zurich, and Paris between 1914 and 1921. It tells in great detail many incidents of the life of Leopold Bloom and those around him on that single day. Ulysses was met with widespread scandal and controversy when Joyce first published the novel as a complete book in Paris in 1922. Since then, however, the 16th of June has since become celebrated in Ireland (and internationally) as *Bloomsday* (Figure 10).

[24] Image from https://en.wikipedia.org/wiki/Lebor_Gabála_Érenn [last accessed 10/9/2018]
*Lebor Gabála Érenn* (*The Book of the Taking of Ireland*) is a collection of poems and prose narratives t purporting to be a history of the Irish and Ireland from the creation of the world to the Middle Ages It was written by an anonymous writer in the 11th century and it synthesised narratives developing over the many centuries.
[25] Joyce, James. 2008. *Ulysses: The 1922 text* (Oxford World's Classics).Oxford: Oxford University Press.

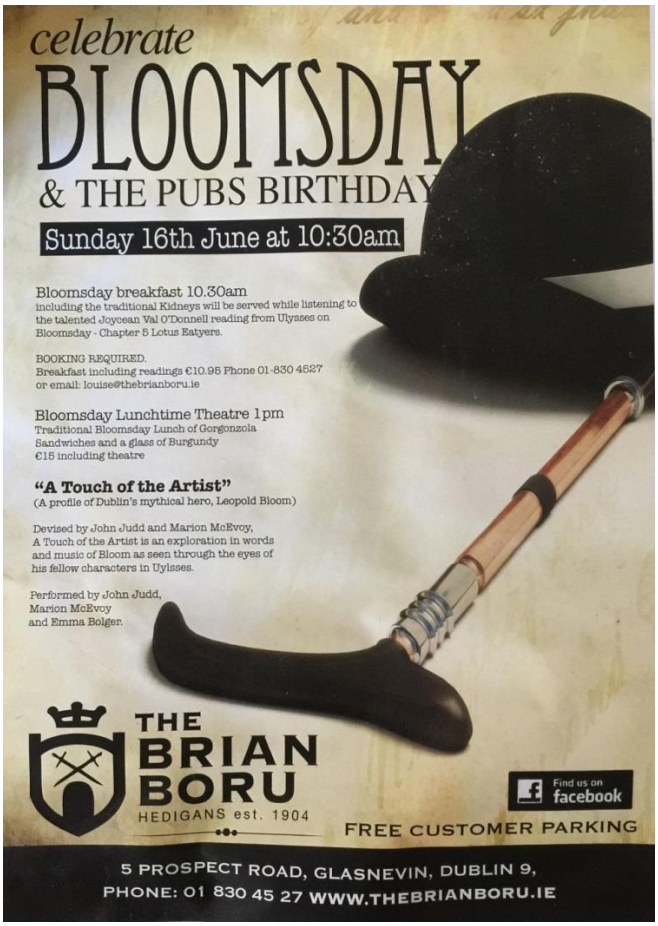



**Figure 10. Poster advertising Bloomsday breakfast, lunch & Bloomsday activities**[26]

Every year in Dublin on that date, hundreds of Dubliners dress as characters from the book – Stephen with his walking cane, Leopold wearing a bowler hat, Molly wearing her petticoats – to assert a connection with the text and its events. The celebration allows Dubliners to project a sense of community on the streets of Dublin in a festive carnival-like atmosphere. Dubliners re-enact scenes from the novel in places mentioned in the novel at the appropriate time according to the Bloomsday schema based on the structure of the novel, including, for example, Eccles Street, Sandycove's Martello Tower, and Ormond Quay. Bloomsday, as a conceptual schema, organises actions and experiences, and structures individual perception of events, building frames and basic cognitive structures to guide one's perception of reality. The Bloomsday schema has participants, temporal dimensions and spatial locations. It is culturally motivated and shares a common understanding amongst its participants – a shared common ground.

Figure 11 shows elements of Ulysses recorded on the linguistic landscape of Dublin. The context for Bloomsday is activated and constructed in the ongoing interaction and is eventually shared by the Bloomsday participants in the construction of the common ground.

[26] Photo by this author

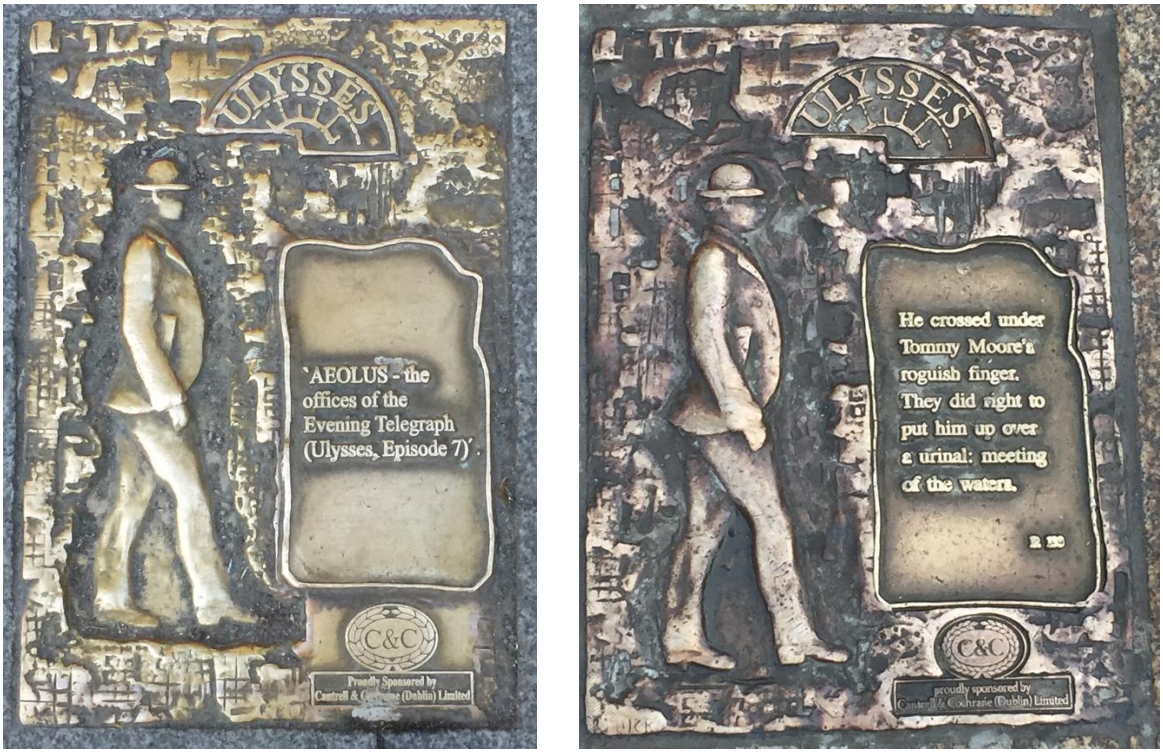



**Figure 11. Two of many plaques embedded in Dublin paths celebrating Ulysses**[27]

Context has a central role in Bloomsday, as a component of cognition in the determination of the conditions of appropriate knowledge activation as well as the limits of knowledge. Context includes cultural knowledge, general knowledge and shared communal beliefs, and the experience that arises from the resulting interplay of culture and social community.

**Conclusion**

All around us, language transforms our world and provides us with meaning in context. We have argued that language depends on culture and language organises culture. We have argued for a view whereby culture is the set of values shared by a group and the relationship between these values, along with all the knowledge (language, grammar, stories, sounds, meaning, and signs) shared by a community of people, forming a particular worldview and common ground, and transmitted according to their traditions. We proposed that meaning in culture is facilitated by language and that language, in turn, draws on cultural common ground while the cognitive processes that people employ to retrieve a meaning are precisely those characterised within Relevance Theory.

Additionally, we argued that these cognitive processes also apply to retrieving meaning from art, music, poetry, and artefacts within the linguistic landscape. According to relevance theory, an input is RELEVANT to an individual when, and only when, its processing yields such positive cognitive effects. Typically, the greater the positive cognitive effects achieved by processing an input, the greater its relevance will be. The greater the effort of perception, memory and inference required, the less rewarding the input will be to process, and therefore less deserving of attention. Relevance therefore may be assessed in terms of cognitive effects and processing effort.

Human cognition tends to be geared to finding meaning and the maximisation of relevance but an informed and mutually agreed common ground is necessary before any communication or dialogue can effectively take place. We argued that, in finding meaning, there is a deep connection between

[27] Photo by this author

language, cognition, communication and culture. Language, common ground and our cognitive processes allow us to retrieve a relevant meaning with least cognitive cost characterise the connection with culture. it's complicated of course, and very interesting while also very human, and very worthy of our attention.

**András MÉNES**

# James Tobin was born one hundred years ago

James Tobin was born on March 5th, 1918, in the city of Champaign, Illinois. His name became known to the community of economists when, in 1972, he proposed his special tax system design, more particularly, the Tobin tax. It seems strange, however, that, in fact, this improperly conceived proposal happened to gain him reputation. According to his idea, it would be appropriate to impose tax on speculative international financial transactions, thus making such transactions more expensive by the application of additional costs. The revenue received from creditors should be transferred to indebted, primarily, to poorly developed countries. On the one hand, the proposal was aimed at limiting financial speculation and, on the other hand, at finding alternative financial arrangements for debtor countries.

Economists and economic policy experts agree that this is a novel idea but not considered practically feasible. It is not clear, though, how "good" and "bad" cash flows can be distinguished from one another. In this context, the notion of "short-term" is not suitable for making a distinction between the above financial flows since short-term credit movements may hedge for classical foreign trade transactions or against exchange rate risks. No proper consideration was given to the issue as to how this tax would affect financial markets or to the question whether such tax would divert financial flows away from developing countries. It remained a prevailing view that underdeveloped countries could best be helped by eliminating the import restrictions posed by the developed world.

This idea is typical of Tobin. However, professional circles do not view tax exposure on foreign financial transactions as the mainstream concept constituting part of Tobin's theoretical work. The revival of the Tobin tax concept in the slogans of opposition politicians is a typical example of how politics can distort economic theories. Decades after its emergence, the concept "was rediscovered" by the enemies of globalization.

It should be noted, however that Tobin was neither an anticapitalist nor an enemy of globalization – he just wanted to improve the efficiency of the financial market. According to him, the free-floating of the exchange rate, which replaced the post-war international financial system, endangers the domestic sovereignty of national central banks since, they would defend themselves against speculative cash flows by exchange rate responses considered unjustifiable from the point of view of individual nations.

The time when Tobin's ideas were taking shape can be related to the period of World War II, when the images of the Great Depression were still vividly remembered. His mother was a social worker, whose experiences inspired him to improve the world and made him pursue his studies at Harvard University to become an economist and subsequently teach economics at Yale University. In one of his reminiscences he explained all this in more details:

"The economists of my generation were influenced by growing up during the Great Depression and they became economists at the time of the birth of the Keynes's revolt against old established wisdom. The intellectual excitement coupled with the hope for dramatic social changes proved most attractive to us ". His practical work in the field of economic policy was not insignificant either that, in response to President Kennedy's invitation to join the Council of Economic Advisers he said "I am just a sort of ivory tower economist". Yet, he served as an economic expert in the committee drafting Kennedy's economic policy program in 1961. He gave impetus to the process of the tax-cut policy of the 1960s. But he was not dogmatic, which he proved in a dispute by asserting that instead of having

further tax cuts, an increased spending by the American government would be more desirable. James Tobin was committed to but not uncritical of John Maynard Keynes. This is what made him the main opponent of monetarists led by Milton Friedman.

It is of great importance from the point of view of the history of economic thought that, unlike Keynes's application of a general theory, Tobin investigated the demand for money and employment in more depth and details. He disaggregated the components of the demand for money and wished to inquire into the reasons behind investors' decision on selecting particular portfolio elements. James Tobin was awarded the Nobel Memorial Prize in Economic Science in 1981 for his analysis conducted in the aforementioned subject area.

It was not just the field of microeconomics where Tobin created great scientific work. The introduction of the "q" ratio in microeconomics, which is associated with his name, is a measure to evaluate company performance. Tobin applied the letter "q" to indicate the value of a fraction where the numerator is the firm's market value of common stocks (stock price) and the denominator is the book value of the firm's total assets. The higher the value of the "q" is, the higher the amount a firm is worth on the market. If "q" exceeds 1, entrepreneurs and investors tend to be optimistic and firms experience an upward trend. In December, 1996 Tobin took the risk of stating that "q", with its value of 1.5 at the time, had hit historical all-time highs.

James Tobin died on March 11, 2002, in New Haven, Connecticut. We should retain the great scientist in our memories both by translating his works into Hungarian and devoting cover space to publications pertaining to the history of economic thought.