6 DigiCulture: The Impact of Digital Competences on Creative Industries

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6.1 Abstract

The shortage of digital skills in Europe reported in 2016 in “European Digital Progress Report EDPR” of the European Commission: 45% of Europeans have insufficient or no digital skills. Based on the Digital Economy and Society Index (DESI) index of 2017 there are big differences between the countries that are partners in this project. Denmark has one of the most advanced digital economies in the EU, while Lithuania and Austria are in the middle, but Romania and Italy have the lowest scores on the DESI. Studies performed by authors in the cultural and creative industries, in the last 3 years in different countries showed a large majority scoring lower or basic level for the 21 digital competences. The usage of web, mobile, social and analytical tools is permeating the length and breadth of the culture, creative industries, areas which until recently have been reluctant to embrace the use of the new technologies. Eurostat 2017 identifies young adults from the creative industries as the most at risk for unemployment from the 22-36 years old, and lack of entrepreneurial and digital skills.

We aim to create a sustainable and efficient open education program - DigiCulture - dedicated to adult learners with low digital skills and low-qualified adults involved in the creative industries sector. This paper analyses the need for such an educational program and presents the instructional modelling for an open, online and blended learning, training program based on a Massive Open Online Course model and the UniCampus virtual environment. The modelling takes into consideration the existing UniCampus, which is further developed in order to integrate the requirements of low digital skills adults, Open Education, e-assessment and a mobile environment. The DigiCulture educational program will be fully integrated in the UniCampus as an online component, a blended learning model and easy-to-access features in the mobile app.

Keywords: digital skills, MOOC, blended learning, virtual learning, creative industries, adult training.

6.2 Introduction

“Digital Culture - Improving the Digital Competences and Social Inclusion of Adults in Creative Industries” is a EU funded project under the Erasmus+ Strategic Partnerships scheme. The project aims to create a sustainable and efficient education program dedicated to adult learners with low digital skills and low-qualified adults involved in the creative industries sector from Romania, Italy, Austria, Denmark, Lithuania, UK and Ireland. The main outcomes include the Digital Skills and Social Inclusion for Creative Industries MOOC Courses available online and through blended learning, the Integrated Virtual Learning Hub including an innovative mobile app aimed at low-skilled and at-risk adults, the Digital Skills e-assessment tool and Open Badges for Digital Skills. Together they will provide important new opportunities for low-skilled adults to access knowledge, gain new digital skills and inter-cultural competences and improve their chances of finding employment or performing better in their current employment. The project addresses a gap in creative industries (CI) education, where there is low emphasis on the use of new digital technologies, entrepreneurship (project management) and both recent graduates and existing employees lack important skills.

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on the Digital Economy and Society Index (DESI) index of 2017 there are big differences between the countries that are partners in this project. Denmark has one of the most advanced digital economies in the EU, while Lithuania and Austria are in the middle, but Romania and Italy have the lowest scores on the DESI. Studies performed in the cultural and creative industries, in the autumn of 2016, 2017 in partner countries showed a large majority scoring lower or basic level for the 21 digital competences. The reasons driving this skills shortage are not hard to identify. The usage of web, mobile, social and analytical tools is permeating the length and breadth of the culture, creative industries, areas which until recently have been reluctant to embrace the use of the new technologies. Eurostat 2017 identifies young adults from the CI as the most at risk for unemployment from the 22-36 yo, and lack of entrepreneurial and digital skills.

The OECD's Survey of Adult Skills (2013/14) supported by the Commission's DG Education and Culture is a survey conducted in 40 countries measuring the key cognitive and workplace skills needed for individuals to participate in society and for economies to prosper: literacy, numeracy, and problem solving in technology-rich environments. It found that 25% of adults of the EU lack the skills to use ICT effectively. This has direct consequences for the Europe 2020 strategy (Education at a Glance, 2016 edition) overall and for individual countries as digital literacy is now an important factor in economic competitiveness.

'New Skills Agenda for Europe' (EU, 2016) lists critical thinking, problem solving and digital competences as core issues, and all are central to this project proposal. These skills are keys to allowing people to access good-quality jobs and fulfil their potential as confident, active citizens. Digital competence is a Key Competence for Lifelong Learning. Content creation is a dimension of the European Digital Competence Framework for Citizens. In recent years the EC DG Employment, Social Affairs and Inclusion and JRC-IPTS have developed the Digital Competence framework (DigComp) (Vorikari, Punie, 2016). DigComp 2.0 (2016) advocates confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and participation in society.

The DigComp 2.0 framework describes digital competences and groups them into five areas: Information and data literacy, Communication and collaboration, Digital content creation, Safety and Problem solving. The DigComp Conceptual Reference Model that includes 21 competences:

1. Information (1.1 Browsing, searching and filtering information, 1.2 Evaluating Information, 1.3 Storing and retrieving information)
2. Communication (2.1 Interacting through technologies, 2.2 Sharing information and content, 2.3 Engaging in online citizenship, 2.4 Collaborating through digital channels, 2.5 Netiquette, 2.6 Managing digital identity)
3. Content creation (3.1 Developing content, 3.2 Integrating and re-elaborating, 3.3 Copyright and Licences, 3.4 Programming)
4. Safety (4.1 Protecting devices, 4.2 Protecting personal data, 4.3 Protecting health, 4.4 Protecting the environment)
5. Problem solving (5.1 Solving technical problems, 5.2 Identifying needs and technological responses, 5.3 Innovating and creatively using technology, 5.4 Identifying digital competence gaps).

Today, being digitally competent means having competences in each of these five areas, which have also been included in the EuroPass CV since 2015. These were the starting points in the rationale for this project as well as the wider need for adult education to improve digital skills.

6.3 DigiCulture Project Objectives

The DigiCulture - Improving the Digital Competences and Social Inclusion of Adults in Creative Industries project aims to create a sustainable and efficient education program dedicated to adult learners with low skills in the creative industries from Romania, Italy, Austria, Denmark,

Lithuania, UK and Ireland. The project focus on openness and inclusive in education. It involves the use and development of an open online and mobile course Digital Skills and Social Inclusion for Creative Industries, built as a Massive Open Online Course (MOOC), an innovative adult educational program of 13 modules available in English, Romanian, German, Italian, Lithuanian, Danish and Gaelic, integrating new Open Education Resources (OER) and accessible to people with limited digital skills. The diverse partnership reunites adult education centers from technical universities, art and humanities universities, SMEs with expertise in eLearning and in art, professionals in eLearning associations and associations for European Capital of Culture 2020 and 2021, involved as partners and associates.

The project targets young adults who are unemployed, staff and volunteers of European Capitals of Culture, creative industries adults with low digital skills, at levels of seniority, experience or level of craft, actors in traditional skills activities, museums, media, architecture, humanities. Many cultural actors are not attached to any formal institution, being freelancers, members of disadvantaged groups (unemployed, with mental health problems, disabilities or economically challenged) or from minority groups. Gaining digital skills will improve their career opportunities by providing access to new marketing tools, new distribution markets through Internet access and ecommerce, and adding the possibility of new forms of digital expression to their work.

The Objectives of DigiCulture are:

1. To enhance awareness of the need for training in digital skills for the creative industries
2. To design and validate cross-country Guidelines for Digital Competences for Creative Industries
3. To create an Integrated Virtual Learning Hub as an online and mobile
4. To design, develop and deliver a Digital Skills and Social Inclusion for Creative Industries Course, OER translated into all partners' languages, delivered as a mix of blended learning course and, a fully online MOOC type course for the target group
5. To improve the achievement and recognition of digital skills through formal and informal learning by introducing Digital Skills e-assessment and Open Badges for adult education in CI
6. To provide engaging and effective learning experiences in the Digital Skills for CI course
7. To enhance collaboration between education providers, universities, cultural and heritage institutions and associations, cultural actors, workers and volunteers
8. To provide evidence about how achievement, assessment and validation of digital skills contributes to the uptake of new skills in creative industries

6.4 Conceptual Guidelines for Digital Competences for Culture

The concept of Digital Competences and Skills are very important within European educational policies. As already stated, recent definitions of Digital Competences and skills are provided in DigComp 2.0 (based on DigComp2.0: The Digital Competence Framework for Citizens Report (Vorikari, Punie, 2016) by JRC Science). The five competence areas (information and data literacy, communication and collaboration, digital content creation, safety and problem solving) that are broken down into 21 digital competences will be investigated during the DigiCulture project, by producing a Conceptual Guideline.

This guideline will seek to identify:

1. which of the 21 competences are more relevant to the cultural and heritage sector,
2. which skills are needed at different work levels and in different cultural areas,
3. how the skills can be gained through an online MOOC course or a blended learning course,
4. how open education methodology can be applied to this sector,

5. how can Open Badges contribute to improving and validating the digital skills of cultural and heritage actors,
6. what considerations need to be taken into account for both cultural and heritage actors and higher education institutions training for these skills,
7. what are the most promising pedagogical and technology-enhanced learning concepts, approaches and methods in achieving better digital skills for cultural and heritage actors,
8. How MOOC-type courses can improve digital skills,
9. how these guidelines can be transferred to other sectors such as tourism.

Massive Open Online Courses (MOOCs) have experienced a rapid take-up by students and educators, involving a large number of users. MOOCs are an integral part and one of the most exciting related products of the Open Educational Resources (OERs) phenomenon, instruments that are playing an ever-growing role in many countries' educational policies. The great diffusion of such free courses raised, after the initial experiences, a series of critics (Daniel 2012, Dillahunt et al. 2014, Hollands & Tirthali 2014, Rohs & Ganz 2015, Schuwer er al. 2015). These were mainly directed at the following issues: dropout rates, low participation from Third Countries, lack of pedagogic rigour in the design of MOOCs together with a lack of quality criteria (Stracke, 2014). Despite all this, thanks to their dissemination and ease of use, MOOCs can become an excellent tool for the promotion of abilities and competences connected to the world of work, of lifelong and autonomous learning.

For many years now, cultural institutions and museums have been interested in the promotion of artistic and cultural heritage by means of the new forms of technology, mainly in the field of distance and digital learning. Through the use of MOOCs, cultural and heritage adult education has the opportunity to broaden the areas of integration for new technologies, while, at the same time, developing new teaching techniques for different users. In 2013, the New York Museum of Modern Art (MoMA), created a MOOC addressed to museum operators and educators. Over the first four weeks, it was able to reach 17,000 users from all over the world (Mazzola, 2013). In 2015, the University of Leicester initiated the "Behind the scenes at the 21st Century Museum" MOOC, probably the first example of an accessible online course, created with the support of National Museum Liverpool. The project underlined the importance of shared management among museums and Universities in the planning and implementation of the MOOCs. Such methodology significantly improved the quality of the proposed contents and, in a broader sense, also museum and academic didactics (Parry et al., 2016).

The aim of integrating digital resources and opportunities in education (especially in the field of cultural and heritage) has to be seen in the light of 21st century learning. In their work titled "21st Century Skills: Learning for Life in Our Times" (2009), Trilling and Fadel create a framework of transversal skills necessary to prepare society for the complex realities of the 21st century. The skills - critical thinking, creativity, communication and collaboration, or the 4 C's – are particularly relevant to the cultural and heritage sector as the sector is an ideal vehicle to integrate the 4Cs in education. Through education about culture and heritage, adult learners are encouraged to think out of the box, which stimulates creativity. Moreover, cultural and heritage education is often done in collaboration, for instance when learners perform together or prepare a common presentation.

6.5 Conceptual Framework for Digital Competences for Culture and Heritage

This project output addresses pending issues related to innovation and integration of digital resources and opportunities in cultural and heritage education and serves as a theoretical basis for the partnership, both during the project and for the continuation afterwards.

Elements of the framework (non-exhaustive):

- Possibilities offered by cultural and heritage education for the enhancement of twenty-first century learning skills

- Potential role of digital competences and resources in cultural and heritage adult education, within the context of twenty-first century learning
- Pending research questions on digital resources and methods in cultural and heritage education. The pilot phase and the subsequent evaluation will contribute to the formulation of answers to these questions.
- Overview of the state of the art of research about digital competences for cultural and heritage sector.

Given these questions, the framework is also relevant to external parties performing research on digital integration and innovation in education, cultural and heritage education and 21st century learning. Desk research for the creation of the framework will be conducted at the beginning by all partners involved and will consist of:

- Creating a list of articles and materials, related to 21st century learning, the use of (innovative) digital resources in adult education, cultural and heritage education, that are relevant for other partners in order to be well-prepared for the next phases of the project.
- Gathering and formulating these questions, preparing presentations about specific themes for the first transnational project meeting and studying the suggested articles and materials.
- Internal discussion at management level about issues and questions relevant to include in the framework, given the long-term strategy of the organization.

6.6 Integrated Virtual Learning Hub - Online and Mobile MOOC Platform

In 2014, the Politehnica University of Timisoara took the initiative to create and offer the first Romanian MOOC. The initiative goes under the name of UniCampus and is intended to be an independent platform used by several Romanian universities. At the moment, UniCampus is offered only in the Romanian language, with courses based on open educational resources and with no tutor support. The platform is not yet adapted to the mobile environment and has a fairly low level of interaction. It currently offers no credentials or open badges integration.

This project output is dedicated to the adaptation, further implementation as a whole unit and performance of usability testing on an integrated online and mobile virtual learning hub for developing digital competences in the culture and heritage sector using Open Educational Resources (OERs), Tools and Practices. This development will be based on the Romanian MOOC platform UniCampus, which will host the course for the project duration and beyond. The course in each partner language will also be able to be integrated into other online platforms (of partner universities) as communication between the platforms will be assured by the Single Sign-on web protocol and the development implies standardised SCORM features. The technical conception and the architecture of the integrated online and mobile platform will incorporate the core components or services as described in the conceptual guidelines.

Digital Skills for Culture Course - a MOOC based structure to include course materials developed during the project as well as User Generated Content, Open Educational Resources and other forms of Open Content as cultural and heritage examples and study cases; Open Learning Activities, peer-to-peer activities, virtual/blended learning

Digital Skills E-Assessment - different forms of digital self-assessment including digital evidence (such as testimonials, digital assets, e-portfolios) applied as elements of formal and informal learning and supporting distributed assessment, Digital Skills for Culture Badges - digital recognition of the skills gained based on current concepts such as Open Badges,

Digital Skills for Culture Data - an online database of the incorporated users, with integrated learning analytics features which will provide real-time information to improve student retention, prevent dropout and better understand the achievement of the desired competencies by the learners,

Digital Skills for Culture Mobile - a mobile application interface for accessing and interacting with the Digital Skills for Culture Course, which will also allow learners to save locally on their mobile phones small snippets of information or knowledge in order to have them at hand for use when needed in their real-life activities as cultural actors.

The development of a Virtual Learning Hub (VLH) will need to focus furthermore on the development of a responsive interoperable interface, with simple features adapted to low digital skills adults, implementation of social software, integration of tools for mobile learning, development of a common working space, inclusion of adaptable and semantic features and learning analytics, integrated self-assessment, validation of open digital credentials, and mobile access to course and personalised information.

The VLH development will imply an interdisciplinary approach from web technologies, mobile technologies, Web 2.0, interactive media and audio-video technologies, open access and tools from semantic technology. It will exist in all partners' languages (EN, RO, DE, IT, LT, DK) with a possible extension to other languages which will allow communication at European, national and regional levels.

The VLH is an innovative multilingual ICT-based environment to promote collaborative learning using connectivist social networking as an instructional method, OERs as the main content, and open digital credentials as recognition and validation of digital skills which can be applied to all ages, genders, cultural backgrounds and levels of digital education in order to promote social inclusion at a digital level. Development of the VLH will respect the W3C Consortium Web Content Accessibility Guidelines (WCAG) 2.0 which ensures ease of use for people with disabilities. Both the user-friendly interface and the mobile interface will encourage all users to access the VLH, engage in a variety of open learning activities, connect with other cultural actors and develop their own digital skills.

6.7 The Digital Skills for Culture Online Course (DSC)

The training program Digital Skills for Culture will be developed as an online course with integrated MOOC and OER tools, resources and solutions, translated into all partners' languages, and designed specialy for low digital skills adults. This project output will be based on the results from the studies and implemented in the VLH. It will be delivering the knowledge to integrate the credentials and will be interdependent with the pilot. It will be validated by the evaluation. This is the core output of the project.

Digital Skills for Culture Course is designed based on Conole's 7Cs Framework of Learning Design, using innovative methods such as the MOOC Design Canvas (Alario-Hoyos, 2014), "Learning through Design" (Bartoletti, 2016). Principles will include "sMOOC Step by Step", but will also take into consideration quality standards (Quality Assurance Subjects Benchmark Statements and the framework of European Cooperation on Adult Learning Policy and the Quality Assurance in Non- Formal Adult Education (Epale report, 2016) and national regulations regarding adult education) - as a free Massive Open Online Course – MOOC based on Open Educational Resources (OER).

The course will promote an innovative approach that will include several methods of learning design, familiar to the university partners who all have experience in online course design, in MOOCs development and in providing support in blended learning. We expect that this course will have an impact at different levels on the learners - as well as improving their digital skills, it will introduce adult learners to self-regulated learning by rethinking the assessment process. By scaffolding their further development, it will also increase the success rate for cultural actors from vulnerable socio-economic classes (who can have better access to know-how).

The design team composed of project partners will encourage the exploration of various teaching and learning models and leverage digital tools to create an adapted and personalised learning experience for adults, supporting networked learning and reflection. The new principles, which will be implemented in ICT courses designed for continuing education will

include: new course materials using simple terminology, multimedia examples, interactive online activities, real-life problem-based exercises, building e-portfolios, e-assessment and peer-to-peer assessment, reflection in blogs, but will also be using existing OERs and examples provided by the cultural institutions partners or associated partners in the project. The course will encourage collaborative learning by including discussion forums, wikis and teamwork activities which will be enhanced in the blended-learning piloting phase. The MOOC will provide learners with a clear course map, with milestones and “must do’s”, and a schedule with tasks, assignments and deadlines. This will increase the perception of learners as active participants in the course, will improve their engagement in order to avoid drop-out and will empower them to become independent learners.

The MOOC course will be fully integrated in the Virtual Learning Hub with an online component on UniCampus and easy-to-access features in the mobile app. Successful courses require careful planning and continual revision. It is important to define successful strategies and collect feedbacks from learners taking the course. Course planning is a continual process in which all the steps above are strongly connected, and it will undergo continuous revision during the piloting activity.

Once the pilot testing of the courses is finished, they will be revised and their resources and methodology will be redesigned in MOOC format. The final Digital Skills for Culture MOOC released will be completely free for use and every OER developed will be released into major OER repositories on the web. As the course will contain new and important information about the use of ICT in different areas, it will be transferrable to other sectors where digital skills are essential, but currently at a low level, such as tourism. Being an online course, any adult will be able to connect and acquire the desired skills.

To build a valid curriculum, partners will refine the course goals, in order to fit the latest digital media innovations and requirements of the cultural sector, and design the concept and curricula for the Digital Skills for Culture Course as a unified course. The Course content will be based on the five areas of digital skills and the 21 competences as defined in DigCom2.0. Each course module will be planned to respond to one or two competences and to cover the transversal competences of communication and collaboration.

Based on the existing target group analysis performed by the partners the planned course content modules are:

1. The Internet, World Wide Web and introduction to the digital world
2. Digital content (including wikis)
3. Copyright and Open Licenses
4. Digital Curation - Digital Libraries and Museums
5. Digital Humanity
6. Digital storytelling
7. Digital audiences, Digital analytics (Google, Facebook, Twitter, SEO)
8. Social media for culture
9. Augmented and Virtual Reality
10. Mobile apps and mobile media
11. Digital management and communication in culture
12. Presenting digitally
13. Online and mobile digital media tools (audio-video)

6.8 Conclusions

The project will directly train 1,200 people online and through blended learning. A further 25,000 people - members of local communities, adult education centres, universities, associations which support enhancing digital skills, policy makers and local and regional government bodies - are another significant group which will benefit indirectly from activities organised by the project. At the end of DigiCulture all the tools and materials will be under the

Creative Commons License, available online or on DSC mobile app available for all. All partners will keep promoting this also after the project is finished.

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