

# DigiCulture

## O1.2 - European and National research on digital competence validation v0.2 FINAL

Outcome 1 Activity 2 Conceptual Guidelines for Digital Competences and Social Inclusion for Creative Industries	
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## Imprint

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## Executive Summary

This document presents the results of the research carried out within the DigiCulture project and aims at identifying the educational needs of CI employees in terms of digital skills promotion for professional development and social inclusion. The research was implemented by using two data collection tools created for this project and involved about 170 stakeholders, workers and professionals in the field of Creative and Cultural Industries from 7 different European countries: Austria, Italy, UK, Ireland, Romania, Lithuania and Denmark. The two data collection tools, the survey and the interview, were used to explore the following fields of investigation: the most required digital skills by CI professionals; the most effective teaching and learning tools and methods for employees' digital skills and transverse skills promotion; the most effective learning methodology to be used in online courses, such as the MOOC, for adults with low digital skills. The document shows separately the results of the research carried out through surveys and interviews. The evaluation tools are made available in this document. At the end of the document, the conclusions of the research conducted are presented. The results will be used within the DigiCulture project to design and create an online course for adult professionals in the CI sector.

## Objectives of this document

The document is composed of three different sections: a qualitative research carried out with the cultural stakeholders involved in DigiCulture Survey; a qualitative research carried out with the CI employees involved in DigiCulture Interviews and an analysis of the data collected.

On the basis of their cultural background, this study is aimed at collecting data in order to propose quality assurance criteria on the development of digital competences in adults with low digital skills.

## Who is this document for?

The document is focused on three main target groups: firstly, the partners of the DigiCulture project who, thanks to the data presented in the document, will have useful information to design and create the DigiCulture MOOC; secondly, researchers and teachers interested in the promotion of digital skills for professionals, especially in the field of CI; and finally, the CI sector interested in designing online training courses aimed at training their employees or future professionals in the field of digital skills.

## What topics are addressed in this document

The document addresses the following topics:

- Useful pedagogical materials and tools to design MOOCs for CI professionals;
- Digital contents and topics for CI professionals training;
- Digital tools aimed at supporting the creative process and communication and collaboration activities in CI sector;
- Digital competences required by the CI sector.

## Contributors

The document was developed by taking into consideration the research conducted by the project partners. In particular, the partners carried out interviews with CI professionals and sent the DigiCulture questionnaire to the stakeholders in order to collect data on the educational needs of CI professionals, the most effective learning tools and teaching methodology, especially in online contexts.

## Acknowledgements

The University of Rome TRE is the author of this document. The DigiCulture project partners carried out the interviews and sent via email the DigiCulture Survey from which the data were collected.

# European and National research on digital competence validation

## 1 Aims and Scope

The main aim of the *European and National research on digital competence validation* document is to present current research terms of Digital skills development in CI employees. It considered specifically, the education and professional needs of the CI sector. The document will ultimately inform; the design and development of pedagogical materials and tools for the DigiCulture MOOC for CI professionals; digital content and topics for CI professional training and Digital tools aim at supporting the creative process and communication and collaboration activities in the CI sector.

Furthermore, the document present the Digital competences required by the CI sector and presents some guidelines for the creation of an effective e-learning course addressed to CI professionals and aimed at Digital and transverse skills development. In particular, the DigiCulture MOOC will be designed with consideration of the *European and National research on digital competence validation* document results in terms of Digital skills learning methods for CI professionals. Another objective is trying to fill the digital skills gap of people who operate in CI and promoting social inclusion, media literacy, intercultural competences and 4C skills (critical thinking, creativity, communication and collaboration; Trilling & Fadel, 2009).

## 2 Background and rationale

The Erasmus+ KA204 “DigiCulture” project (Improving the Digital Competences and Social Inclusion of Adults in Creative Industries, 2018-2021) aims at creating a sustainable and efficient educational program targeted at adult learners with limited digital skills and less-qualified adults involved in the Creative Industries sector. The educational program addresses a gap in CI education where there is low emphasis on the use of new digital technologies (EDPR, 2017) and entrepreneurship skills (project management); as a matter of fact, both newly graduates and existing employees lack important skills (OECD, 2018). Many CI employees are not attached to any formal institution, being freelancers, members of disadvantaged groups (economically challenged) or minority groups. Gaining digital skills will improve their career opportunities by providing access to new distribution markets through internet access and e-commerce, whilst also providing them with new entrepreneurial tools or adding new forms of digital expression to their work (Digital Education Action Plan, 2018).

### 3 Methodology, tools and research

The findings presented in this document have been collected using the following tools, which were specifically designed for this study:

- DigiCulture O1 survey;
- interviews with professionals in the CI sector.

#### DigiCulture O1 Survey: aims and structure

The main objective of the survey was to gather information from stakeholders in the Creative Industries in the area of digital skills and to promote them for the labour market development.

The objective of the survey was to collect both qualitative and quantitative data to underpin the creation of a set of Conceptual Guidelines for Digital Competences and Social Inclusion for Creative Industries that would form the theoretical basis of an online course (MOOC) and also provide an intellectual output of the Erasmus+ DigiCulture Project.

The data from the primary research was analysed in tandem with current published research and publications into digital competence in educational and national settings. This was completed to situate the findings within national and international educational discourses for the creation of effective pathways for adults with limited digital skills and to identify trends from this research.

The purpose of the study was to collect data as comprehensively and objectively as possible through: teaching and assessment methods; pedagogical materials and tools; research instruments; assessment tools and any other crucial element. The data collected through this questionnaire provide background information for research on the digital skills required in the field of Creative Industries. The data will also be used to underpin scientific articles and publications produced within the project.

The DigiCulture O1 survey focused on the content and objectives of the Output 1 and consists of the following sections:

- General aspects;
- MOOCs courses;
- DigiCulture Methodological Framework;
- Suggestions.

The tool comprises of 10 questions using closed questions, Likert scales and open-ended questions. The following table illustrates the indicators under investigation and the associated questions for each section of the tool.

Table 1: Survey Instrument Indicators

Section	Indicator	Question number
General aspects	DigComp 2.1 competences dimensions required <u>today</u> by the CI sector	Q1
	Future DigComp 2.1 competences dimensions required by the CI sector	Q2
	Specific Digital skills to be improved in Adult education	Q3
MOOC	National MOOC addressed to Creative Industries professionals aimed at Digital skills development	Q4 and Q5
	Participation in a MOOC addressed to Creative Industries professionals	Q6
	Interest in attending a MOOC	Q7
	Relation between a MOOC and the digital skills development for CI professionals	Q8
DigiCulture project Methodological Framework	DigiCulture project Methodological Framework possible functions and aims	Q9
Suggestions	Open suggestions	Q10

## DigiCulture O1 Survey: sections and questions

### STAKEHOLDER INFORMATION

NAME: \_\_\_\_\_

COUNTRY: \_\_\_\_\_

ORGANISATION/COMPANY: \_\_\_\_\_

ROLE IN THE ORGANISATION/COMPANY \_\_\_\_\_

WORKING AREAS of Creative Industries (please select the working areas that can be applied to your activity/profession/work environment):

- ☐ <sub>1</sub> Museums, galleries and libraries
- ☐ <sub>2</sub> Music, performing and visual arts
- ☐ <sub>3</sub> Advertising and marketing
- ☐ <sub>4</sub> Architecture
- ☐ <sub>5</sub> Crafts
- ☐ <sub>6</sub> Design (product, graph and fashion design)
- ☐ <sub>7</sub> Film, TV, video, radio and photography



☐<sub>8</sub>IT and computer services software and web/mobile development

☐<sub>9</sub>Publishing

☐<sub>10</sub>Tourism

Others \_\_\_\_\_

## 1 General aspects

Q1. On the basis of the five digital competence dimensions defined by DigComp 2.1 (2017), to what extent do you think the following skills are useful in Creative Industries today?

	1 (At minimum level)	2	3	4	5 (At maximum level)
Information and data literacy	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Communication and Collaboration	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Digital Content Creation	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Safety	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Problem Solving	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

Q2. On the basis of the five digital competences dimensions defined by DigComp 2.1 (2017), to what extent do you think the following skills will be useful in Creative Industries in the next ten years?

	1 (At minimum level)	2	3	4	5 (At maximum level)
Information and data literacy	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Communication and Collaboration	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Digital Content Creation	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Safety	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
Problem Solving	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

Q3. In your opinion, which skills need to be improved by Adult Education Institutions? (Please choose only a maximum of two skills for each dimension)

1 – Information and data literacy	2 – Communication and Collaboration	3 – Digital Content Creation	4 – Safety	5 – Problem Solving
<input type="checkbox"/> <sub>1.1</sub> Browsing, searching, data filtering, information and digital content	<input type="checkbox"/> <sub>2.1</sub> Interacting through digital technologies	<input type="checkbox"/> <sub>3.1</sub> Developing digital content	<input type="checkbox"/> <sub>4.1</sub> Protecting devices	<input type="checkbox"/> <sub>5.1</sub> Solving technical problems
<input type="checkbox"/> <sub>1.2</sub> Evaluating data, information and digital content	<input type="checkbox"/> <sub>2.2</sub> Sharing through digital technologies	<input type="checkbox"/> <sub>3.2</sub> Integrating and re-elaborating digital content	<input type="checkbox"/> <sub>4.2</sub> Protecting personal data and privacy	<input type="checkbox"/> <sub>5.2</sub> Identifying needs and technological responses
<input type="checkbox"/> <sub>1.3</sub> Managing data, information and digital content	<input type="checkbox"/> <sub>2.3</sub> Engaging in citizenship through digital technologies	<input type="checkbox"/> <sub>3.3</sub> Copyright and licences	<input type="checkbox"/> <sub>4.3</sub> Protecting health and well-being	<input type="checkbox"/> <sub>5.3</sub> Creatively using digital technologies
	<input type="checkbox"/> <sub>2.4</sub> Collaborating through digital technologies	<input type="checkbox"/> <sub>3.4</sub> Programming	<input type="checkbox"/> <sub>4.4</sub> Protecting the environment	<input type="checkbox"/> <sub>5.4</sub> Identifying digital competence gaps
	<input type="checkbox"/> <sub>2.5</sub> Netiquette			
	<input type="checkbox"/> <sub>2.6</sub> Managing digital identity			

## 2 MOOCs courses

A MOOC is an online course aimed at unlimited participation and open access via the web. (e.g. Coursera, EdX, FutureLearn, iMooX, FUN, iVersity, Udemy, Udacity, MiriadaX, Canvas, Khan Academy, Open Education Europa, EMMA, etc.).

Q4. Do you know any online courses dedicated to Creative Industries professionals in your country?

☐ <sub>1</sub> Yes ☐ <sub>2</sub> No

Do you know any online courses dedicated to improve digital competencies in your country? Please indicate them.

---

Q5. Are you aware of any existing Massive Open Online Courses (MOOCs) for Creative Industries professionals in your country?

☐ <sub>1</sub> Not at all ☐ <sub>2</sub> Very Little ☐ <sub>3</sub> Somewhat ☐ <sub>4</sub> Very aware

Q.6 Have you attended an online course for professionals in the Creative Industries?

☐ <sub>1</sub> Yes ☐ <sub>2</sub> No

Q.6.1 If yes, please write the name of the course and briefly describe how it was structured and which Creative Industry it was designed for.

---

Q7. Are you interested in participating in an online course, MOOC Type?

☐<sub>1</sub>Not at all    ☐<sub>2</sub>Very Little    ☐<sub>3</sub>Somewhat    ☐<sub>4</sub>To a Great Extent

Q8. Can MOOCs and e-learning courses improve digital skills for Creative Industry professionals?

☐<sub>1</sub>Not at all    ☐<sub>2</sub>Very Little    ☐<sub>3</sub>Somewhat    ☐<sub>4</sub>To a Great Extent

### 3 DigiCulture Methodological Framework

Q9. The DigiCulture project Methodological Framework aims at identifying the development of digital competences for adults with low digital skills. In your opinion, to what extent can the DigiCulture Methodological Framework... (Please answer every question by ticking the box that best indicate your opinion).

	Strongly disagree	Disagree	Uncertain	Agree	Strongly Agree
a) Be applicable in your business area	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b) Be promoted by Higher Education Institutions in your Country	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c) Provide quality value to work-based learning	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d) Bring added value to your business area	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e) Be shared with the cooperation of HEIs, VET providers and employers	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

### 4 Suggestions

Q10. Are there any suggestions you would like to make to promote the smooth and successful development of the project activities?

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If you want to stay in touch, receive news or contribute to the DigiCulture project, please leave us your email below:

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## DigiCulture O1 Survey: analysis and findings

The DigiCulture Survey was completed by 148 respondents.

A brief demographic analysis of the 148 respondents revealed that 35.4% reside in Italy (IT), 24.3% in Lithuania (LT), 12.5% in United Kingdom (GB), 8.3% in Denmark (DK), 10% in Romania (RO) and 7% in Ireland (IE). Other respondent's countries of origin are United States, Austria, France, Czech Republic, Ukraine, Andorra, Australia, India.

As regards respondents from Country partners (104), the most representative geographical regions or areas are the South of Italy (25%), the Suvalkija Lithuania Region (22.1%) and the Dzūkija Lithuanian Region (11.5%). The highest number of Danish respondents comes from the Nordjylland Region (6.7%), while most British respondents are from the London area (5.8%) (see Figure 1). The Romanian regions which are represented by the respondents are Banat (2.9%), Oltenia (1.9%) and Transilvania (1.9%). As for Italy, the 8.7% of the respondents comes from the central area, while the north of the Country is poorly represented (1%) (see figure 2).

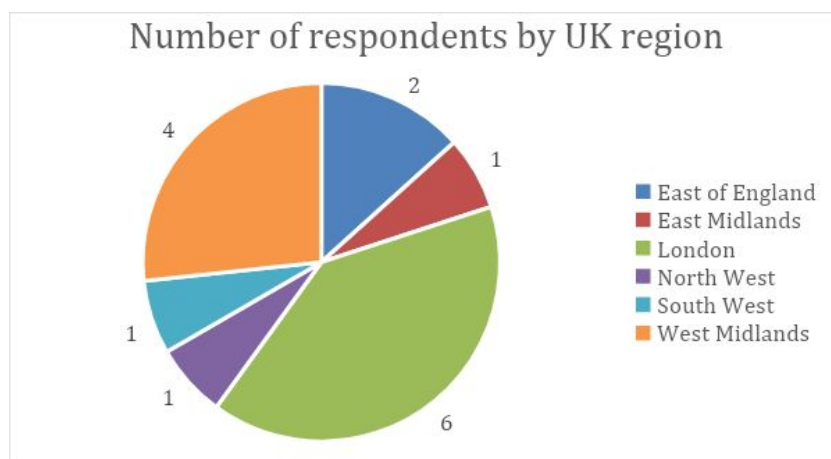


Figure 1 - Number of respondents from UK

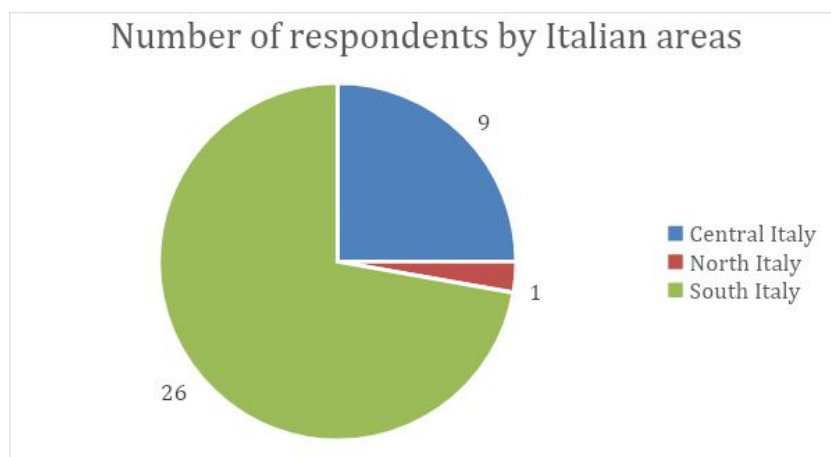
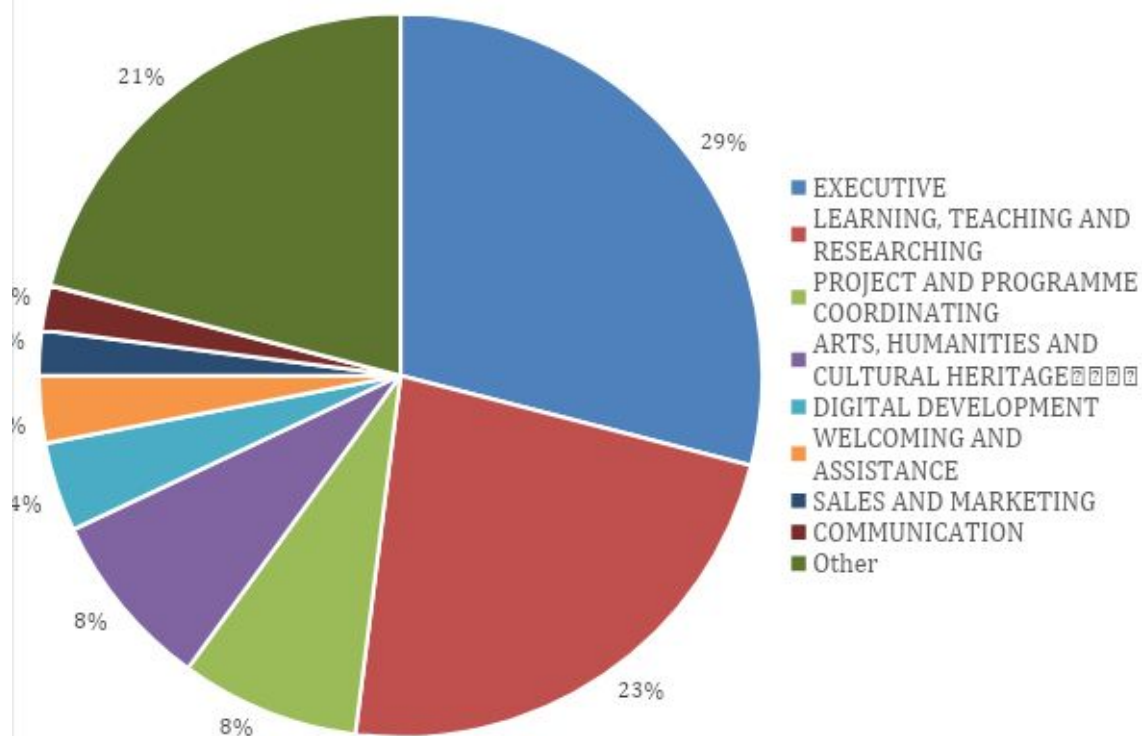


Figure 2 - Number of respondents from Italy

As regards to the occupation and the role of the interviewees, the chart illustrates that the highest percentage of respondents work in Museums, galleries and libraries (42%). 35% of them hold an executive position [Manager (21%), CEO (9%), Deputy Director (4%) and Founder (2%)], whereas 23% of Museums, galleries and libraries' workers have a role in the Learning department [Museum Educators (18%), followed by Project Managers].

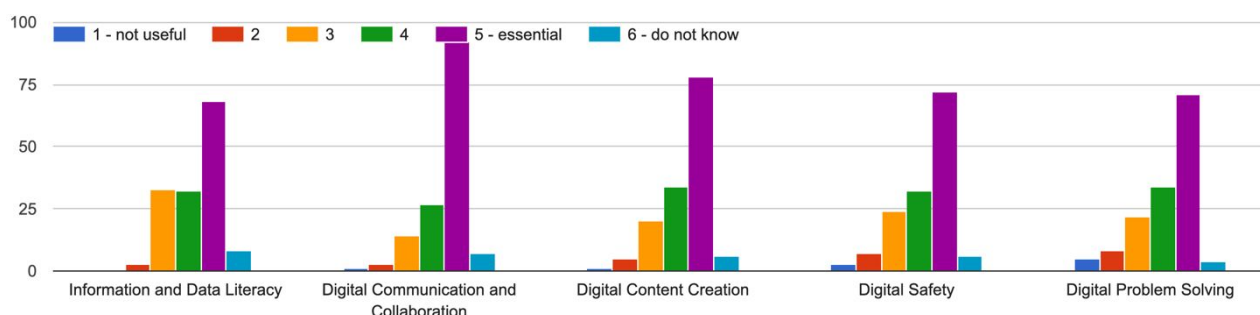
As illustrated below, 30% out of 148 interviewees are in Executive level roles in their organizations, followed by 13% of respondents who hold other roles in the Learning sector with 11% holding a Teaching or Researching position. A further 9% are in Project or Programme coordinator positions, whilst 8% self-categorised as Arts, Humanities and Cultural Heritage professional (i.e. Artists, Graphic Designers, Archaeologists, Librarians, Curators, Cataloguers).

Role in the organization



Digital competences are in general considered essential by the great majority of respondents of the survey. In particular, *Digital communication and collaboration skills* were considered extremely important for 64% of respondents whilst 54% of respondents felt that *Digital content creation* skill was also very important. Moreover, the *Digital communication and collaboration* dimension obtained the highest number of scores given by respondents, 612 out of a maximum of 715 points, followed by *Digital content creation* (587 points), *Digital problem solving* (573 points), *Digital safety* (572 points) and *Information and Data Literacy* (568 points). These results highlight the importance of stimulating all digital competences dimensions, with particular attention to the domain of creativity, an essential element extremely connected to the working area of CI. As regards the working areas, the *Digital communication and collaboration* dimension is considered the most important one by Museums, galleries and libraries employees (35 respondents out of 59) and IT and computer services software and web/mobile development employees (4 out of 6 respondents); the respondents in the field of Film, TV, video, radio and photography highlights also the necessity of *Digital safety* dimension (4 out of 5 respondents). Most Music, performing and visual arts employees respondents do not assign high scores to *Information and data literacy* and *Digital problem solving* dimensions.

#### Q1. To what extent do you think the following skills are useful in Creative Industries today?

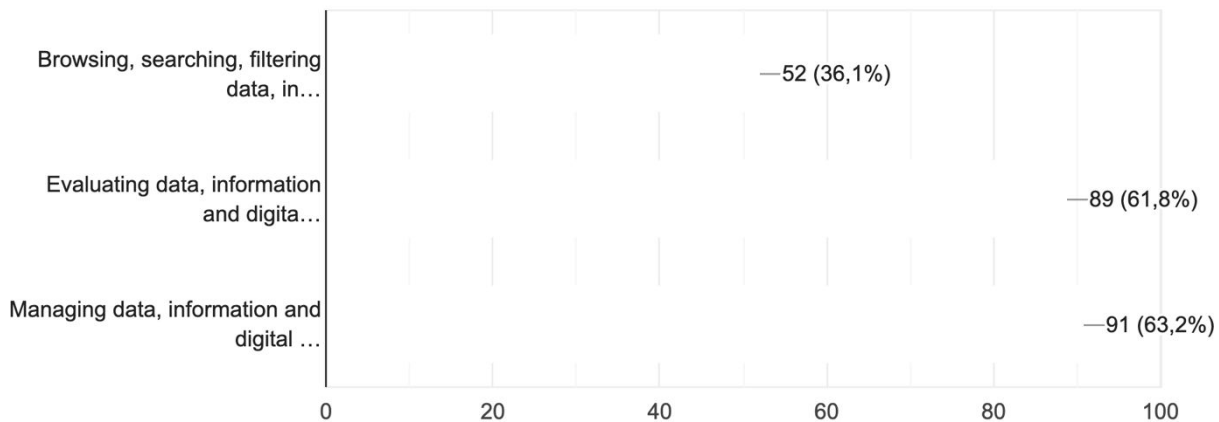


In the next 10 years digital skills are considered by respondents to be much more important than now: the highest scores assigned to digital skills dimensions increase from 12 (*Digital Communication and Collaboration*) to 18 percentage points (*Digital Safety*). The *Digital Communication and Collaboration* dimension is still considered the most required one in the CI working context.

As regards to the improvement of digital skills amongst CI employees (Q3), the *Information and digital literacy* dimensions should be promoted most according to the respondents: in particular, *Managing and Evaluating data, information and digital content* needs to be improved and/or trained for more than 61% of respondents, especially in Museums, galleries and libraries sector (24 respondents out of 81), IT and computer services software and web/mobile development sector (4 respondents out of 6) and Music, performing and visual arts (6 respondents out of 8). The respondents from the Tourism sector seek to be trained in Browsing, searching, filtering data, information and digital content (4 respondents out of 7). Also *Protecting personal data and privacy* should be improved by 77.8% of respondents. Regarding the *Digital content creation* dimension, employees in CI field should be trained more in *Developing digital content* and *Integrating and re-elaborating digital content* skills (respectively for 57.6% and 54.2% of respondents). As regards to the *Digital Problem Solving* dimension, *Creatively using digital technologies* was considered the skill most needing to developed in CI employees by 59.7% of respondents.

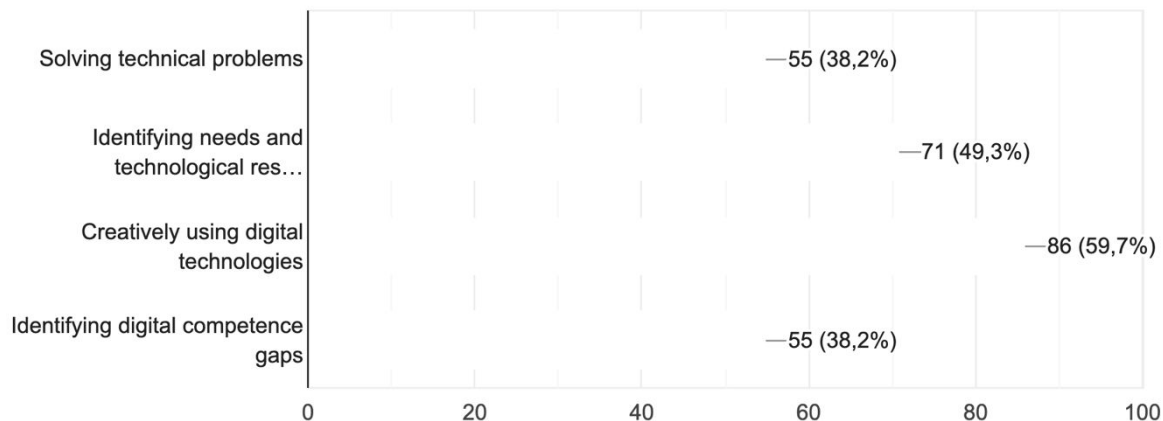
## Information and Data Literacy

144 risposte



## Digital Problem Solving

144 risposte



The necessary digital content areas to be included in a learning path for CI employees was considered by more than half of respondents as:

- Online and Mobile Digital Media Tools (57% of respondents);
- Social Media for Culture (57% of respondents);
- Digital Communication & Presentations (56% of respondents);
- The internet, World Wide Web and introduction to the digital world (56% of respondents);
- Data Protection and Open Licenses (51% of respondents);
- Digital Management in Culture (51% of respondents).

Other suggested areas for learning include: Co-working, Digital tools for productivity, E-platforms for developing artists' digital skills, Mobile App and Seminars, webinars and mentoring.

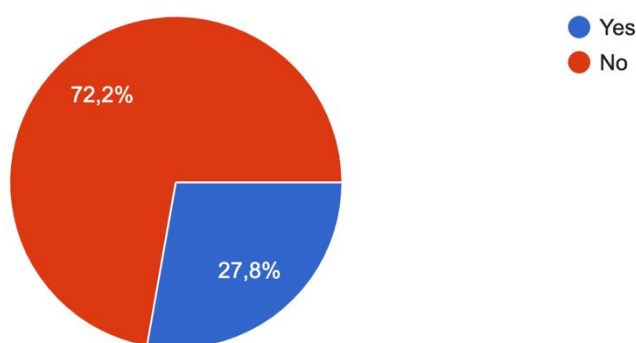


*Digital Communication and presentation* and *Social Media for Culture* obtained the highest amount of overall score assigned by respondents.

Only 27.8% of respondents took part in an online course on a MOOC platform: 9 respondents out of 40 used the Coursera Platform (<https://www.coursera.org>), 6 respondents attended the Mu.SA MOOC (<http://www.project-musa.eu/blog/2018/07/13/mu-sa-project-mooc/>) and 5 used FutureLearn (<https://www.futurelearn.com>).

### Q5. Have you ever taken part in an online course on a MOOC Platform (eg. Coursera, FutureLearn, edX, Udemy, Udacity, iversity, EMMA, etc.)?

144 risposte



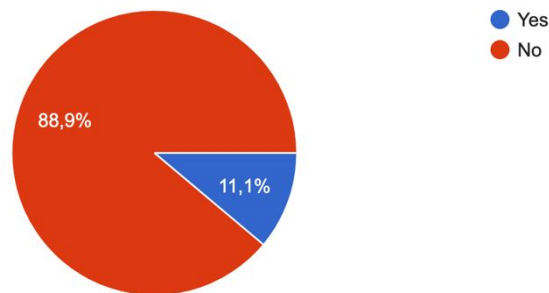
The most popular course areas include: programming (10 respondents out of 40), museums exhibition, education and digital skills (8 respondents out of 40), 3D animation (4 respondents out of 40), the internet, World Wide Web and an introduction to the digital world (3 respondents out of 40), Language, History and Culture (3 respondents out of 40) and Teaching and Learning strategies (3 respondents out of 40). Only 2 respondents took part in an online course on Digital Storytelling although this topic is considered to be interesting in terms of training by 48% of respondents to the survey. Similarly, only one respondent took part in an online course on Digital Management in Culture and Digital Communication and Presentations. 12 respondents out of 40 who took part in a MOOC did not finish the online course for the following reasons:

- Lack of self-motivation (4 respondents);
- Not good enough content and quality of learning (3 respondents);
- Certificates of completion unavailable to them (3 respondents);
- Lack of interaction (2 respondents);
- Lack of personal support from tutors or teachers (2 respondents).

The majority or 88.9% of respondents were not aware of specific national online courses for CI employees or of online courses designed to improve general digital competencies or to develop digital topics.

### Q7. Do you know any online courses designed to improve general digital competencies (or in any of the previous topics) in your country?

144 risposte

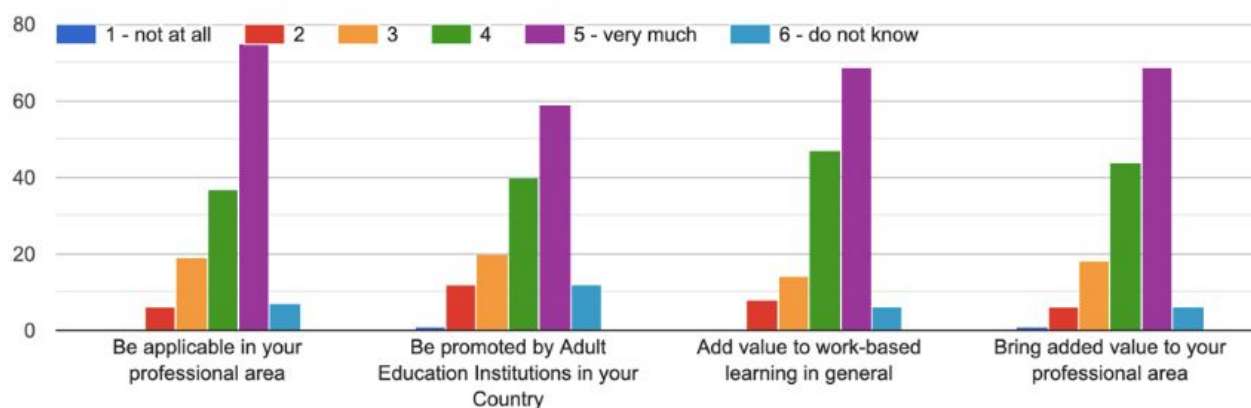


18.1% of respondents attended courses on digital topic or digital skills development. The most common areas include:

- Data Protection and Open Licenses (2 out of 26 respondents);
- Essential Skills for Museum Professional (2 out of 26 respondents);
- Digital Communication & Presentations (2 out of 26 respondents).

43.4% of respondents felt that online courses can really improve digital skills for Creative Industry professionals and only 11 respondents did not consider them useful in terms of digital skills and content promotion. For 48.3% of respondents considered that the promotion of digital skills for workers in the Creative Industries would bring added value to specific their professional area. These were notably from those representing Museums, galleries and libraries (30 out of 59 respondents), Music, performing and visual arts (4 out of 8 respondents) and Tourism (4 out of 7 respondents). For almost all the Film, TV, video, radio and photography employees (4 out of 5 respondents), they considered that digital skills should be promoted by national Adult Education Institutions and also that these could be applied to their professional area.

**Q10. The DigiCulture project aims to create a sustainable and efficient education program devoted to adult learners with low digital skills and under-qualified adults involved in the creative industries sector. To what extent do you think that the promotion of digital skills for workers in the creative Industries can...**



Some respondents provide suggestions to the project partners in order to help the design and creation of DigiCulture MOOC and activities.



The use of innovative teaching and learning strategies should be promoted in order to support collaboration among professionals and to increase students' self-confidence. Case studies should be included in MOOC, as well as specific activities and tasks addressed to different CI sectors and to provide specific use cases and to let learners build their learning experience according to their specific individual professional and personal needs. DigiCulture partners should be aware of digital exclusion and design the online course by taking into consideration learners' difficulties.

## DigiCulture O1 interviews: aims and methodology

The main objective of the interviews with CI stakeholders and employees was to collect detailed data related to digital tools and content for workers' professional development.

The main topics of the interviews were defined by DigiCulture partners during the transnational meeting held in Rome (May 2019). In June 2019, Roma TRE University, as partner leader of the activity, designed and shared with the other partners the Final interview scheme composed of 10 main questions organised as explained in the following paragraph. General Guidelines for conducting DigiCulture interviews were drawn up in the same month by Roma TRE University in order to define the common methodology of the activity to be used by all partners.

General Guidelines for conducting DigiCulture interviews:

1. translate the questions into the language of the interview;
2. select 2 stakeholders or employees from the field of Creative Industries from different sectors (Museums, galleries and libraries; Music, performing and visual arts; Advertising and marketing; Architecture; Crafts; Design; Product, graphic and fashion design; Film, TV, video, radio and photography; IT and computer services software and web/mobile development; Publishing; Tourism);
3. schedule the interviews;
4. ask questions to the respondent;
5. record the interviews;
6. fill in the interview content assessment tool for each person interviewed;
7. upload the tools for interview content evaluation to the shared folder;
8. upload the recording of the interview to the shared folder.

## DigiCulture O1 interviews questions

1. Which industry are you involved in and what is your role? Can you briefly describe your job and your main responsibilities?
2. Can you describe any situations where you are required to use digital tools in your professional practice and/or during the creative process?
  - a. Can you describe how you used digital tools to support your last project? i.e. software, programmes, internet etc. Please give details...
  - b. What were the challenges you faced (if any) when using these digital tools? Please give us an example of a typical day in which you used digital tools.
3. How would you define digital competencies? What do digital competencies mean to you, if anything?
4. What digital tools to support communication and collaboration are you familiar with? Which of them do you use in your professional practice? (e.g. Skype, email, etc)
  - a. Are there digital tools to support communication and collaboration which you would like to know how to use and why?
5. What digital tools that help to make creative products are you familiar with? (e.g. Cameras, digital photographs, audio and video recordings). Which of them, if any, do you use? Please give an example.
  - a. What digital tools that help to make creative products would you like to know how to use? Why?

6. What are the core digital competencies needed by those who work/want to work in your field?

OR

Which digital media and tools do you think are essential in your field of work?

Which digital media and tools are in your opinion important for employees in your field?

7. Have you ever undertaken online course? (for example, a Massive Open Online Course/ MOOC)? If so, can you briefly describe the content of the course?\*

8. Have you ever attended an online course specifically aimed at those employed in your professional field? If so, can you briefly describe the content of the course?\*

9. Do you think that online courses could help to develop digital competencies/abilities/skills?

OR

In your opinion which digital competencies can be best learned through online courses? Please list digital media which you think could promote the development of digital competencies when learning online.

10. Which topics and/or tools would you regard as essential or desirable in a course aimed at developing digital competencies for those who work in your professional sector?

a. Why? Why would these tools be desirable of use to you?

b. To what end?

\*The interviewer can decide whether to ask the questions marked with an asterisk according to the development of the interview and the answers to the previous questions.

## DigiCulture O1 interviews evaluation tools

The following content evaluation tool was used by partners to start the evaluation data analysis.

Question No.	Form filling instructions	No. words or other instructions
1	Please indicate the CI sector (Museums, galleries and libraries; Music, performing and visual arts; Advertising and marketing; Architecture; Crafts; Design; Product, graphic and fashion design; Film, TV, video, radio and photography; IT and computer services software and web/mobile development; Publishing; Tourism) and the role of the interview	
2	Please indicate the digital tools used in the professional practice	Name of the tools
3	Please indicate the definition of digital competences	Max 40 words
4	Please indicate the digital tools for <u>communication and collaboration</u>	Name or type of digital tools
4A	Please indicate digital tools for <u>communication and collaboration</u> which the interviewee would like to know	Name or type of digital tools
5	Please indicate the digital tools used in the <u>creative process</u>	Name or type of digital tools

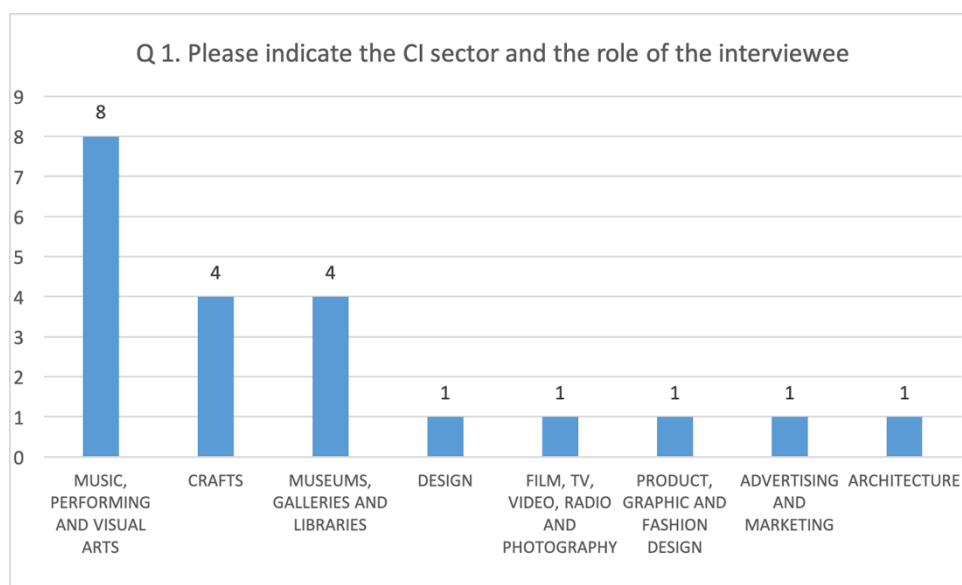
5A	Please indicate digital tools useful for the <u>creative process</u> which the interviewee would like to know	Name or type of digital tools
6	Please indicate the core digital competencies <u>or</u> the digital media and tools defined as essential in the field of work of the interviewee	Max 40 words
7	Please indicate possible MOOCs undertaken by the interviewee	Title of the MOOC or content Max 40 words
8	Please indicate which contents, if any, are considered important in an online course for CI employee	Max 40 words
9	Please indicate competencies/abilities/skills that should be promoted through online courses.	Max 40 words
10	Please indicate topics and/or tools defined as essential or useful in the online course for digital competencies promotion	Max 40 words
10A	Please indicate <u>why</u> the interviewee selected specific topic and/or tools	Max 50 words
10B	Please indicate to what end the interviewee selected specific topic and/or tools	Max 50 words

## DigiCulture O1 interviews: analysis and findings

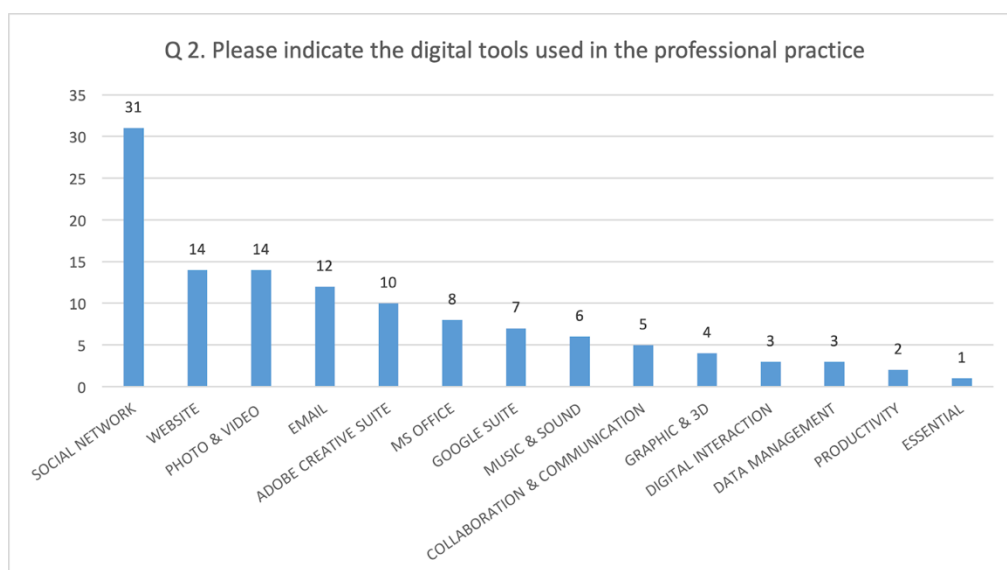
21 interviews were carried out by DigiCulture Partners.

No. of interviewees	Country
2	Denmark
10	Ireland
2	United Kingdom
2	Lithuania
2	Italy
3	Austria

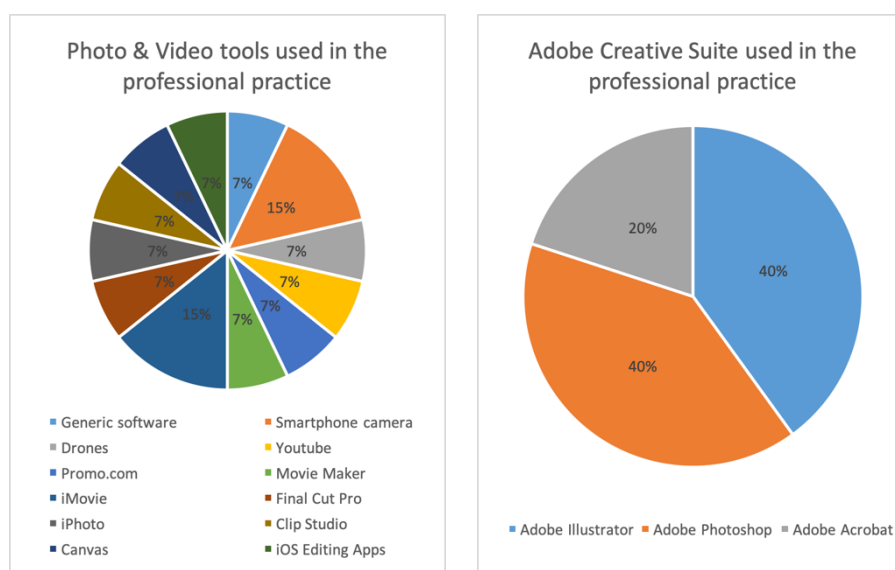
Most of the 21 CI employees interviewed work in Music, performing and visual arts sector (9), followed by Crafts (4) and Museum, galleries and libraries (4) sectors. Other CI areas are: Design (1), Film, TV, radio and photography (1), Product, graphic and fashion design (1), Advertising and Marketing (1), Architecture (1). The roles of those who work in the Music, performing and visual arts sector include mostly music professions (3) and management positions (2), followed by visual artist (1) and teacher (1).



The interviewees were asked to identify which digital tools they are required to use in their professional practice to support their work or creative process (Q2).



As the above diagram shows, the most used digital tool comes from Social Network/Media (31), with no significant difference reported among Facebook, Twitter and Instagram, as illustrated below. 13 out of 21 respondents underline the use of Website builder platform, such as Wordpress (2) and Adobe Dreamweaver (1), the diagram shows a moderate use of Website builder platforms by the interviewees. These data highlighted the importance of interfacing with audience through digital tools within the CI sector also during the creative process. 9 respondents use Photo & Video software, platforms, PC/mobile apps and also Adobe Creative Suite software (6). These results show the relevance of creating visual contents.

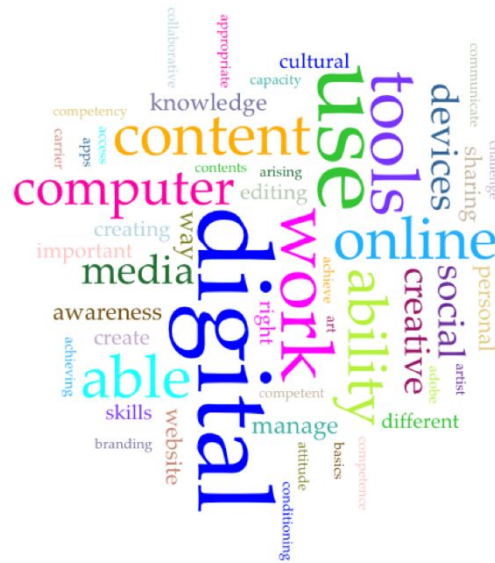


Also email is frequently reported by the CI professionals' digital practice (12), followed by MS Office (8) Google Suite (7) Music & Sound software, platforms, PC/mobile apps (6), Collaboration and communication (5) Graphs & 3D (4). The specific tools mentioned by the interviewees are the following:

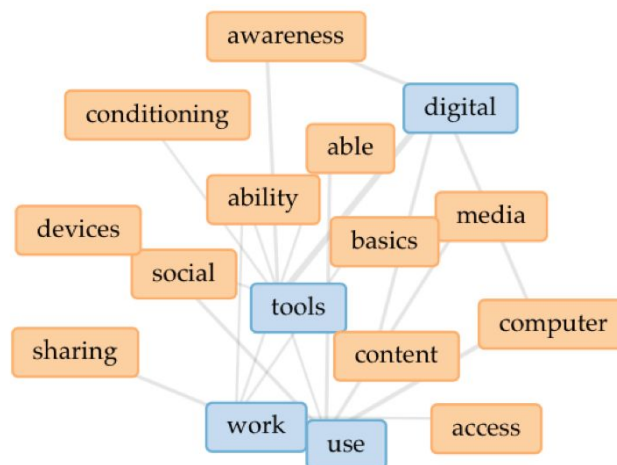
Field of work or type of activities	Tools or types of tools
Email	MailChimp, Mailing list
Microsoft Office	Word, Excel, Publisher
Music & Sound	GarageBand, Sibelius, Spotify, BandCamp, Google Suite, Google Drive, Google Analytics
Collaboration and communication	Trello, BlueJeans and Slack
Graphs and 3D	AutoCad, SketchUp, Cam2, PhotoScan
Digital interactions	Touchscreen technologies, Gaming, Augmented Reality
Data Management	Database management software, accounting software, TMS collection Management software
Productivity tools used in the professional practice	Online banking app, Brand24

In Q3, the interviewees were asked to give their personal definition of digital competence. 5 out of 21 interviewees did not give a comprehensive response and showed a lack of awareness about the matter, whilst the majority gave fuller answers. A content analysis was carried out to bring out the most relevant aspects underlined by the respondents.





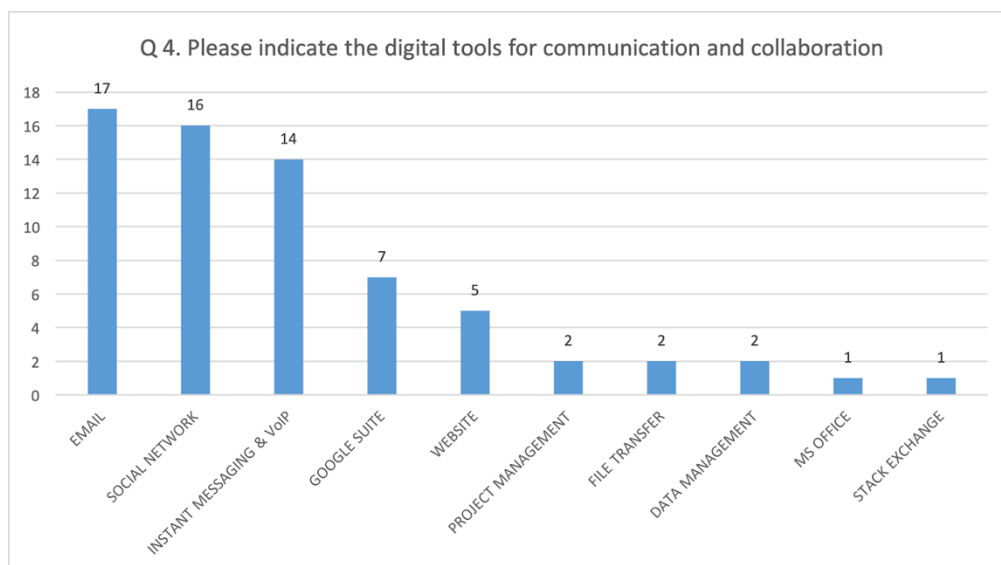
The analysis highlighted that the most used words in the responses are “digital” (13 times), “use” (9 times), “tools” (6 times) and “work” (6 times), as the tag cloud above shows. The keywords are mostly linked to words related to the ability to use digital devices and to create content in a work context, as the below diagram shows.



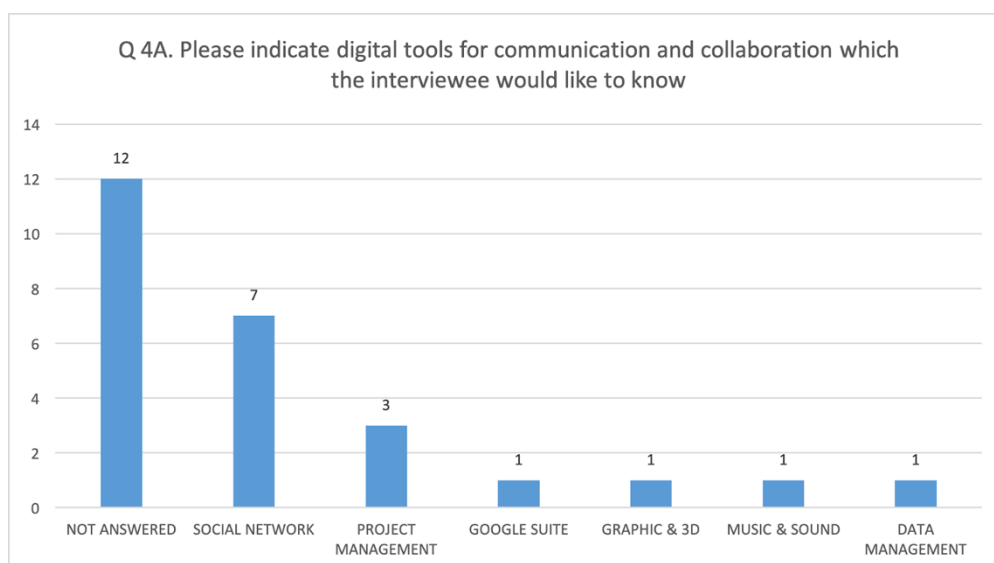
The interviewees considered the development of digital competences essential for professional practice, as some of them stated:

- *Having digital competence means that you're able to share your work and build credibility online.*
- *It is a tool for seeking and exploring new career opportunities.*
- *Being able to use social media platforms to manage work relationships.*
- *Being aware that the deep knowledge of content is crucial for a right manipulation of the cultural product.*

Q4 asks CI professionals interviewed what digital tools supporting communication and collaboration they are familiar with. The results, charted below, show no significant difference in the use of Email (17), Social Network (16) and Instant Messaging & VoIP (14) tools to communicate and collaborate in professional practice. Also the chart shows lower percentages in the use of Google Suite (7), Website (5), Project Management tools (2), File Transfer (2), Data Management (2), MS Office (1), Stack Exchange (1).



Compared to Q2, Q4 sets out a new range of digital tools classified as Instant Messaging & VoIP: Slack, Messenger, GoToMeeting, WhatsApp, Facetime, ProofHub and Skype. File Transfer cloud platforms (WeTransfer; Dropbox) and Stack Exchange Network of Q&A website (Stack Overflow) are also regarded by 2 out of 21 interviewees as digital communication and collaboration tools used in collaborative activities. The interviewees were also asked to indicate other digital communication and collaboration tools they would like to learn to use (Q4A).



A significant number of interviewees (12) did not answer this question which indicates potentially a lack of awareness to the professional opportunities provided by digital tools for communication and collaboration.

If we compare the data to the CI sectors of the interviewees, we can assume that communication and collaboration activities are not considered as a crucial part of their professional practice because of the individualistic nature of some of their roles. The response illustrate that most of the participants think that a better understanding of Social Networks (7; Instagram above all, Facebook, Twitter, YouTube) would benefit their professional practice in this context.

The interviewees were also asked to give an example of which digital tools support their creative production and their familiarity with the sameh (Q5). As the diagram below illustrates, both Social Networks and Adobe Creative Suite figured highly amongst the responses followed by Music & Sound and Photo & Video software, platforms and PC/mobile apps. Other digital tools classified as Website, Graphs & 3D, Instant Messaging & VoIP and IT-Security have been considered. 2 interviewees did not answer the question.

A comparison with the previous results shows that new digital tools are not reported. The digital tools commonly used in professional practice (Q2) were also mentioned in Q5. Q5A asked interviewees if there were any further digital tools they would like to learn to improve their creative process: most of them thought that a better use of Website tools (9) could help to make creative products. The analysis of Website digital tools mentioned by the interviewees underlines that visual and text contents play a major role in the CI creative process: Website content creator tools were mentioned by 10 interviewees, followed by Social Media Content Creator (7 respondents), Webflow (2) and Blog (2)

In Q6 the interviewees were asked to indicate the core digital competencies or the digital media/tools defined as essential in their working sector. Only 2 out of 21 respondents did not reply to this question. As illustrated by the content analysis, the most frequent words are “knowledge” (6 times), “digital” (5 times), “website” (5 times), “camera” (4 times), “media” (4 times), “social” (4 times). We can assume that the respondents consider creating and sharing content tools essential to work in the CI sector.

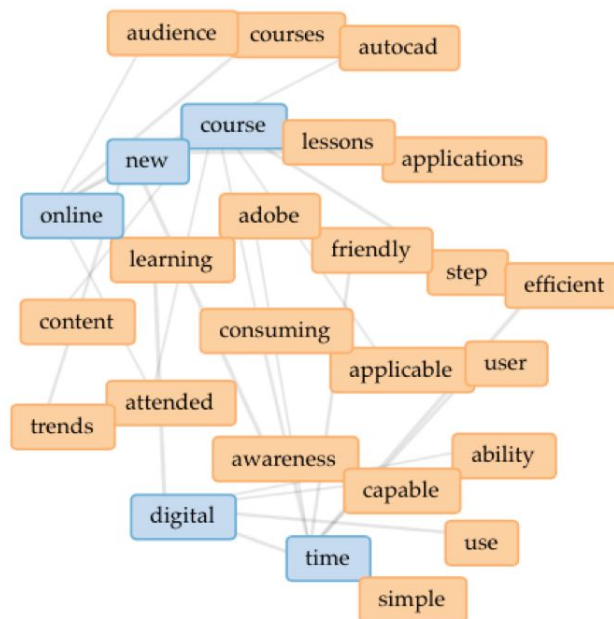
As illustrated in the chart below, the keywords are linked both to a business/advertising and to a creativity/communicating context. The CI workers believed that digital tools are necessary to support the creative process as well as to reach the audience and to build up working relationships, as one interviewee stated:

*“Knowing how to manage online content and communicate them through social networks in an appropriately and creatively way, without eclipsing the cultural value of the product you want to promote”.*



When considering Q7, it is significant that most of the CI workers interviewed never attended an online course (17 out of 21). When questioned to indicate possible MOOC's undertaken, only 4 out of 21 interviewees answered "Yes". Most of the MOOC mentioned are related to the interviewee's work sector (legalities in entertainment; accounting software/management; semantic web).

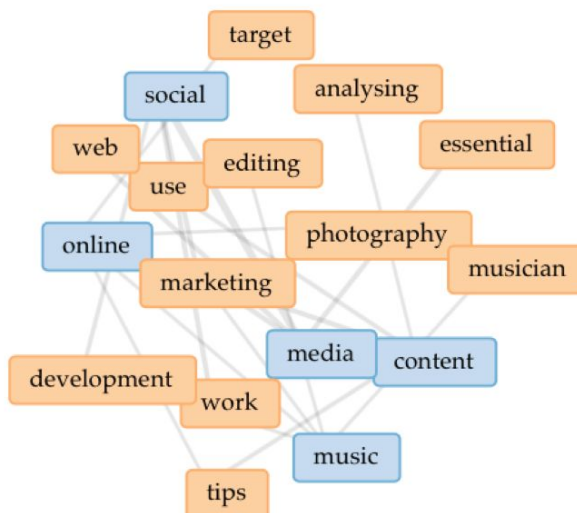
Q8 focused on which areas of online content material the interviewees consider important in an online course for CI employees. This question received 4 non-responses, while 2 out of 21 interviewees were not interested in the topic. A content analysis was carried out to bring out the most relevant aspects underlined by the respondents. The analysis highlighted that the most used words in the responses are "course" (5 times), "new" (5 times), "time" (5 times), "digital" (4 times) and "online" (4 times), as the tag cloud shows above. The keywords are mostly related to learning opportunities in a cost-effective and time-saving environment.



It can be concluded from this that respondents are focused mainly on how the online courses are designed, rather than the underlying course content. The interviewees stated that an online course must be: time-saving, easy-to-use, focused on new trends and specific topics, possibly relevant and applicable to their work (Adobe Suite, social media marketing, cloud, communication and collaboration, photo and video software). Overuse of text content was also considered a weakness.

The interviewees were also asked to indicate competencies, abilities and skills that should be promoted through online courses (Q9). This question received 5 non-responses, while most interviewees thought that online courses could help to develop an in-depth knowledge of digital tools. In particular, to promote the ability to create content for website and social networks was considered important by half of this question's respondents.

Q10 asked interviewees to indicate topics and/or tools defined as essential or useful in the online course aimed at developing digital competencies for those who work in CI sector. Whereas 4 interviewees did not reply to this question, a content analysis of 17 responses has been carried out. The analysis highlighted that the most used words in the responses are "content" (10 times), "online" (6 times), "social" (6 times), "media" (5 times) and "music" (4 times). The main keyword "content" is widely used by 10 out of 17 respondents and it is mostly linked to the words "analysing", "use" and "tips", as illustrated below. The other words are related to the type of content they consider essential for their professional digital practice (photography, music) and which digital tool they are created for (social media, web, online).



It is clear that, once again, creating and editing online content is widely considered as the most essential topic that CI employees are required to learn. The interviewees were also questioned why specific topics or tools mentioned in Q10 are regarded as useful (Q10A) and to what end (Q10B). Besides 2 non-responses on Q10A, most of the interviewees (11 out of 19) state that the tools reported are considered essential in respondents' career development as CI employee and simply refer to their practical professional experience. Q10B received a significant number of non-responses (11 out of 21). A content analysis shows that the most used words in defining the aim of learning digital tools are: "promote" (3), "audience" (2), "develop" (2), "reach" (2), as the tag cloud below shows.



As it has been proved by the previous responses, reaching a wider audience through digital online content and being able to promote their work using digital tools is considered as essential or useful by CI sector employees in order to develop their professional practice and career.

## 4 Results

### Pedagogical materials and tools useful for the design of a MOOC addressed to CI professionals

The research conducted within the DigiCulture project identified the following tools to be inserted within a MOOC addressed to CI employees:

- Online and Mobile Digital Media Tools;
- Social Media for Culture and Creative Sector;
- Digital Communication & Presentations tools;
- Digital Management tools in Culture.

In general, tools related to creating and editing online content are widely considered the most needed by CI professionals. Learning materials defined as useful for a MOOC addressed to CI professionals should have the following characteristics:

- Supporting self-motivation;
- High quality;
- Promoting interaction between professionals of the same CI sector and MOOC students.

The MOOC for CI professionals should also provide a certificate at the end of the course in order to provide recognition for the participants and to be used more widely for them to access the labour market. The need for a continuous support from tutors or teachers during the course was highlighted by CI stakeholders and employees involved in the research. The use of innovative teaching and learning strategies should be promoted and case studies inserted in the MOOC, as well as specific activities and tasks assigned to different CI sectors, to cater for the multiple areas and also to let learners build their learning experience according to specific professional and personal needs. The use of inclusive tools should be integrated in the DigiCulture MOOC: too strict technical requirements and too difficult evaluation activities should be avoided in order to promote participants' social inclusion and to take into consideration learners' difficulties. The clear structure and objectives of the MOOC are essential conditions for the learners' performance.

### Digital content and topic for CI professional training

The necessary digital content to be developed in a learning path for CI employees are defined by research results as follows:

- Social Media for Culture;
- Digital Communication & Presentations;
- The internet, World Wide Web and introduction to the digital world;
- Data Protection and Open Licenses;
- Digital Management in Culture;
- Digital Audiences, Digital Analytics;
- Digital Storytelling.



Other suggestions in terms of learning topics are Augmented and Virtual Reality, Mobile Apps and Mobile User Experience, Co-working, Digital tools for productivity, E-platforms for developing artists' digital skills, Mobile App for Seminars, webinars and mentoring.

## Digital tools aimed at supporting the creative process and communication and collaboration activities in CI sector;

The most important tools to be used in CI professional practice to support the **creative process** are the following:

Area of work or type of activities	Tools or types of tools
Digital content creation through social media	Instagram, Facebook, Twitter
Digital content creation through website	Wordpress and Adobe Dreamweaver
Visual content creation	Adobe Photoshop, Smartphone camera, Drones, Promo.com video making tool, iMovie, iPhoto, Canvas, Windows Movie Maker, Final Cut Pro, Clip Studio.
Visual content managing	Adobe Creative Suites, Adobe Photoshop, Adobe Acrobat.
Digital content creation	Microsoft Office (Word, Excel, Publisher), Google Drive, Google Drive
Graphs and 3D	AutoCad, SketchUp, Cam2, PhotoScan
Music & Sound content managing and creation	GarageBand, Sibelius, Spotify, BandCamp, Google Suite, Google Analytics

As regards digital tools for supporting **communication and collaboration** activities, the research defined the following instruments:

Area of work or type of activities	Tools or types of tools
File sharing and transferring	Google Drive, Dropbox, WeTransfer
Digital communication	Instant Messaging & VoIP: Slack, Messenger, GoToMeeting, WhatsApp, Facetime, ProofHub and Skype
Email	MailChimp, Mailing list
Microsoft Office	Word, Excel, Publisher
Collaboration and communication	Trello, BlueJeans and Slack
Digital interactions	Touchscreen technologies, Gaming, Augmented Reality
Data Management	Database management software, accounting software, TMS collection Management software
Productivity tools used in the professional practice	Online banking app, Brand24

## Digital competences needed in CI sector

This research shows that all the 5 dimensions of Digital competences defined by DigComp 2.1 are generally considered essential by the CI professionals and stakeholders:



- Information and data literacy
- Digital communication and collaboration
- Digital content creation
- Digital safety
- Digital problem solving

The research results underline the importance of promoting digital competences together with creativity skills, which represent an important domain within the field of work under consideration.

In the next 10 years, digital skills should be considered to be much more important than now: *Digital Communication and Collaboration*, *Digital Safety* and *Digital Communication and Collaboration* skills in particular. With respect to digital skills to be improved by CI employees (Q3), the *Information and digital literacy* dimensions are considered by respondents to be the one which should be promoted most: in particular, *Managing and Evaluating data, information and digital content*. As regards *Digital Safety*, *Protecting personal data and privacy* skills should be improved in ad hoc learning paths.

Regarding the *Digital content creation* dimension, employees in the CI field should be more trained in *Developing digital content* and *Integrating and re-elaborating digital content* skills. As regards the *Digital Problem Solving* dimension, *Creatively using digital technologies* is defined to be developed in CI employees by the most of research participants. Developing digital competences is considered essential for CI professional practice, as some of the research participants point out:

- *Having digital competence means that you're able to share your work and build credibility online.*
- *Is a tool for seeking and exploring new opportunities in a career.*
- *Being able to use social media platforms to manage work relationships.*
- *Being aware that the deep knowledge of contents is crucial for a right manipulation of the cultural product.*

## 5 Conclusions

The project partners should take into consideration the results of this research for the design and creation of the DigiCulture MOOC.

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