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Report on the digital readiness and on the use of visual methods in Higher Education in Hungary, Uk, Greece, Italy, Sweden and South Africa

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Abstract:	The following report results from the research activities carried out by Melting Pro Learning (IT) together with La Sapienza University of Rome (IT), Loughborough University (UK) Digitales (UK) Cape Peninsula University of Technology (SA) Panepistimio Patron University (GR) Research Innovation And Development Lab (GR) Linneuniversitetet (SE) Magyar Tudomanyos Akademia (HU) It offers an overview of the teaching skills needed to face digital readiness during the pandemy, offering details about the pedagogical approach and methodologies to use with a focus on visual methods

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CHAPTER 1

INTRODUCTION TO THE RESEARCH

1.1 Introduction to the Research

The following report is based on the European-wide research carried out from June to December 2021 within FutureAbility - Digital and transversal skills for online teachers (Project Number: 2020- -1- -IT02- -KA226- -HE- -095365), a two-year European funded project under the Erasmus Plus Strategic Partnership. FutureAbility involves 9 organizations from five EU countries[1] and 2 Extra EU countries working together, with the aim of investigating, producing and sharing open educational resources (OER) to make online teaching for higher education more attractive and accessible.

During the first wave of the current pandemic, all countries experienced forms of lockdown that limited or changed how people lived and worked. It is evident that different sectors have been affected by these new conditions; in particular, educational pedagogies and methodologies have been the object of structural questioning and changes, which enhanced the need for new reflections and analysis from professionals and experts.

In the light of this consideration, the strategic partnership created within FutureAbility wanted to investigate how distance learning was carried out in the HE sector during Covid-19, with the ultimate aim of understanding how visual methods can improve online teaching and learning outcomes.

To this end, the investigation was conducted on a national basis in Italy, United Kingdom, South Africa, Greece, Sweden and Hungary, by partners grouped in national clusters.

The approach to the research was mainly qualitative, using a variety of investigative tools, chosen according to the specific aim and target group. These included:

Surveys: Online questionnaires addressed to teachers and learners, investigating the skills and competencies required by the new learning scenario. A total of 305 respondents filled in the questionnaire.

1. La Sapienza University of Rome (IT) (Lead Partner), Melting Pro Learning (IT) , Loughborough University (UK) Digitales (UK) Cape Peninsula University of Technology (SA) Panepistimio Patron University (GR) Research Innovation And Development Lab (GR) Linneuniversitetet (SE) Magyar Tudomanyos Akademia (HU)

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Focus Groups: Online and face-to-face focus groups, involving academics, teachers and learners coming from Universities and other higher education Institutions. 9 focus groups were organized around Europe, South Africa and the UK, involving a total of 57 participants.
Desk Research on the training offer: Analysis of the state of the art of the digital readiness for learning environments of each country involved. 4

The following table gives an at-a-glance overview of the indicators of the research

TYPE OF RESEARCH ACTIVITY	EU Indicators	Female	Male	Other	Italy	UK	SA	GR	HU	SE	OTHER
Survey		152	151	2	69	61	34	44	24	69	4
Focus /People		27	17	8	11	13	9	10	8	6	

Table 1 - Impact of the research

The research was performed within the first Intellectual Output (IO) of the 'FutureAbility' project which explored the digital readiness of HE in each partner country and investigated opportunities, challenges, and best practice in distance learning and visual methods during and after the outbreak of the Covid-19 pandemic.

This intellectual output had three outcomes:

1. Desk research, whose aim is to provide a general overview on partners' higher education systems and how they faced the shift to (partial or total) distance learning in terms of policies, management, opportunities, and challenges;
2. Focus Groups, which provide an in-depth and specific analysis on teaching practices, changes and obstacles;
3. Surveys, which investigate how professionals in the higher education sector have used and will use visual methods in their teaching modules before, during and after Covid-19.

CHAPTER 2

NATIONAL REPORTS OVERVIEW

2. National Report Overview

The purpose of the national research activities was to collect information on various distance learning practices while contextualizing them with specific political, historical and social conditions. All reports were conducted autonomously at national level, following a common structure based on three macro sections:

1. The first collects information on the nation's digital readiness within higher education, revealing different **levels of digital readiness** within various higher education institutions;

2.The second investigates the changes that occurred after the breakout of Covid-19, collecting data on national policies and higher education institutions and the impact of distance learning and visual methods in terms of roles, opportunities and difficulties;

3.The third reflects on the future of distance learning and visual methods, in terms of best practice and considerations.

In the elaboration of national reports, some partners chose to stick precisely to structured proposals (section and paragraph) while others preferred to collect several paragraphs under a single heading; however, in both cases, the division of data into three major sections was followed by each cluster and the resulting deliberations can be compared between the different nations.

The structure proposed is:

National scenario before Covid (Part I)
the level of digital readiness in the Higher Education sector;

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National scenario during Covid-19 (Part II)
the changes and transformation after the outbreak of Covid-19 within:

1. Public national policy;
2. Distance learning in terms of opportunities and difficulties;
3. the Role and use of visual methods in online/distance lear ning;
4. the impact of distance learning on the performance of stu dents and teachers;
5. the Constitution of the supporting body/committee for te achers and professionals.

National scenario 'after' Covid-19 (Part III)
What to take and what to leave from the experience of using distance learning during the outbreak of Covid-19.

2.1 Desk Research - National reports

This section briefly describes the national reports that are collected in their full form in the "Annex" section at the end of this report.

In general it is possible to affirm that, with the exception of Sweden, all countries were unready for the rapid shift to distance learning. Countries such as the UK and Italy had structures and technologies for distance learning in place but these weren't necessarily used for widespread online learning; and in general the current pandemic has posed many challenges for many universities and higher education institutions both in terms of material and intellectual assets.

Concerning the role of States, it is possible to say that despite the presence of different forms of government (more or less centralized), higher education institutions have been quite autonomous in the management of distance learning, while the role of States has impacted greatly in terms of previous investment in ICT. The reports that most reported this aspect are those from Sweden, South Africa and Hungary.

Another analogy shared by most countries is the prolonged lockdowns experienced by most countries since, with the exception of Sweden, most partner nations experienced lasting limitations in mobility which resulted in a greater amount of distance learning.

Each report highlights different aspects depending on specific context, however all reports were unanimous in considering the exclusive performance of distance learning negatively and in demanding further reflections on distance learning didactics and pedagogies.

The most shared concerns and issues were related to the performance of more practical lessons, the quality of relationships between peers and teachers, and to the impossibility of undertaking activities which greatly rely on international travel (eg on field research).

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Moreover, many reports reported an increase in the workload for teachers and concerns related to mental health and accessibility for students with lower income or poor access to ICT.

Among positive aspects, reports reveal greater flexibility in terms of the format for learning and in accessibility for working students and for students living in other countries or cities. Furthermore, all countries reported a willingness to retain forms of distance learning if developed in a blended form, and all reports state the need to investigate distance learning practice further in order to uncover its dual aspects (positive and negative) and devise new effective pedagogies.

2.1.1. Greece

According to the Greek national report, before the outbreak of Covid-19 there was only one higher education institution in the country that provided full online courses for undergraduate and graduate students (Hellenic Open University); other institutions had established Open eClass platforms during the same period but these digital tools only allowed students to have access to learning materials in digital format.

In addition, according to the Center for European Policy Studies, Greece was amongst those EU countries with the lowest levels of digital readiness due to relatively low national investment in the digitalization of the education sector. This latest condition has had an important impact on the challenges that higher education institutions faced with the outbreak of Covid-19.

Despite this negative starting position, it seems that at an organizational level most Greek universities have succeeded in the shift towards distance learning, whilst at a teaching level, major lessons were simply adapted to distance learning without developing new pedagogies, with major challenges posed by practical disciplines and by assessment procedures.

In addition, the Greek national report reveals that teachers have never received proper training in using distance learning, and new technologies were adapted without awareness and specific preparatory courses. On the other hand, the shift to distance learning has provided a positive influence on the internationalization of teaching modules and the digital acceleration of higher education institutions.

In conclusion, according to the Greek national report, higher education institutions consider the changes that have occurred as an opportunity to shift to a more digital hybrid form of teaching and this shift should be taken into account by the national government.

2.1.2. Hungary

The higher education sector in Hungary was not prepared for the rapid shift to distance learning imposed by the outbreak of Covid-19 since there was little experience in the use of internet-based video platforms.

During the first wave of Covid, Hungary's higher education institutions had to find autonomous and rapid solutions to distance learning without the support and guidance of the central government. In the first lockdown period, universities and other institutions struggled to find the best platforms and to adapt their existing teaching methodology (asynchronous/ synchronous) but things changed a little during the second wave when the higher education institutions organized themselves and established guidelines and tools to support teachers in this shift.

In general, forced distance learning has had a positive impact on the acceptance of digital technologies and methodologies, as well as on accessibility for those students living abroad. However, it has posed many concerns relating to the workload of students and teachers, and the effectiveness of the learning environment when teaching is performed without interaction or personal contact, or by professors who lack digital skills.

n conclusion, according to the Hungarian report, this hybrid form of teaching will last but must be supported by progressive development of digital readiness of both institutions and professionals.

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2.1.3. Italy

Before the outbreak of Covid-19, many higher education institutions in Italy had adopted some digital tools and platforms, but the majority of professors and lecturers hadn't had experience of distance learning or used e-learning tools in their teaching.

During the first wave of Covid, universities were declared autonomous in respect of the policies and learning guidelines within each institution, and generally the shift towards distance learning was managed by the rector or by an ad hoc commission established for this purpose. Furthermore, institutions were left to select the teaching tools and practices they used independently, resulting in differences of approach between the universities.

Distance learning was generally perceived positively by professors and students in as much as it increased accessibility for distant and working students and generated new teaching practices; however, the impact it had on the workload of teachers was considered a negative, as was the fact it worsened the quality of interaction between students and professors and also between peers. Furthermore, the quality and interactivity of courses and curricula related very strongly to the digital capability of individual professors, and in many cases, there was a return to more traditional teaching (more teacher-led/lecture-based? and less interactive) .

Italian students and professors also faced technical difficulties but it is important to mention that in most cases, universities and other higher education institutions in italy established training and support bodies to help professionals overcome major issues related to distance learning.

After the first wave of Covid-19, the perception of distance learning is varied; however the vast majority of students and professors believe that a mixed form of teaching could produce a positive impact in the future.

2.1.4. Sweden

In contrast to the countries already analyzed, Sweden was amongst those European countries with the highest levels of digital readiness in their education and higher education sectors. Institutions were already equipped with e-learning tools and professors were generally trained in using them.

In addition, the form and the typologies of lockdown experience were different since policy-makers in Sweden did not impose any general lockdowns, mandatory facemasks, or any of the other measures that characterized the response of most EU nations; however, the mobility of the Swedish people was equally affected, and the Swedish government recommended a shift to distance learning.

As a consequence of this recommendation, higher education institutions moved as many courses as possible online and, despite having had a more relaxed form of lockdown, Swedish students and professors have therefore experienced a form of total or partial distance learning in the last two years.

Distance learning was considered positively in Sweden because it improved the flexibility and accessibility of teaching environments. However, it increased teacher workload and worsened the quality of interaction between peers and between professors and students. It has also had a detrimental effect on curricula that rely mostly on practice and mobility and on learning weaker assets, and it has posed concerns related to the mental health of students and professionals.

In conclusion, the forced shift to digital and distance teaching tools and modalities created a positive impact in terms of digitalization, enrichment of human capital and the flexibility of the teaching environment; however, it also posed much concern about human interactions, mental health, and quality of certain courses and curricula.

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2.1.5. South Africa

Despite research, policies and recommendations, before the outbreak of Covid-19 there was a high level of digital divide and digital inequalities among the population of South Africa and, while all South African Universities have an online presence, a full form of online teaching was something new.

Distance learning was perceived as positive in respect of flexibility and the acquisition of skills; however, many students and professionals reported problems related to internet connection and technological problems, and in some cases (especially in rural areas) a complete inability to attend courses as they were exclusively performed online.

Other negative impacts were the increase in workload and mental health problems related to a sense of isolation and alienation, which was detrimental to the quality of the learning environment for both students and professors.

The general point reported by students and professors was that hybrid mobility has the potential to produce some positive effects but that it is essential to solve limitations and problems that currently result in negative effects for distance learning.

2.1.6 The United Kingdom

According to the UK report, economic recession and travel limitations imposed by Brexit worsened the capacity for higher education institutions to react to the first wave of Covid-19. The economic recession reduced the possibility of investment in new technologies that would have facilitated the shift to full distance learning, and Brexit lowered the income to higher education from students' fees. This situation influenced the performance of distance learning and the perceptions that students and professors had of it during this period.

Workload and the negative impact on mental health were the most commonly reported negative aspects of distance learning, whilst flexibility and (in some cases) the accessibility to teaching materials were the most frequently-cited positives. In its final consideration about the future of distance learning, the report reveals the continuance of a chaotic situation characterized by the restricted implementation of effective pedagogies.

2.2. Conclusions of national desk research

The form of lockdowns experienced by each state have greatly influenced how didactics were performed during this current pandemic, while the role of the state had an effect on the extent of public investment in digital technologies or the level of harmonization in tools and practices. Digital readiness and literacy have impacted the accessibility and the effectiveness of curricula and it is interesting to note that all the reports documented reflections and concerns about distance learning.

Generally speaking, it is possible to affirm that the shift towards distance learning has imposed new thinking on the role of technologies in education and it has generally produced the digital upskilling and reskilling of teachers, lecturers and students. It seems also that according to the vast majority of partners, distance learning has enhanced teaching in terms of flexibility, typologies of means, and accessibility for working and distant students.

However, the majority of partners have also reported that practical laboratories and trans-national research have been negatively affected by the limitations imposed during the pandemic, and it seems that the quality of interaction has generally worsened between peers, and between students and professors. In most cases, this lower level of interaction was linked to a general sense of isolation, aggravating concerns over the mental health of professionals and scholars, especially when associated with an increase in workload and stress. Among the negative effects reported, it is important to mention the limits that distance learning has posed for students with lower income or lower accessibility to digital devices and connections, exacerbating the impact of privileges.

Conclusions and consideration on the future of distance learning depend greatly on the report; some researchers reflect largely on the need to elaborate new pedagogies for distance learning, while others display concerns related to distance learning when it is linked to low investment or weak working guardianship. However, the general perception is that after the emergence phase, blended forms of teaching will remain stable in the future and hopefully they will be linked to tailored pedagogies and tools.

CHAPTER 3

FOCUS GROUPS

3. Focus Groups

The second means of inquiry for the FutureAbility research is the focus group. Each country organized one or more focus groups with professionals (teachers, lectures, assistants) of universities and other higher education institutions, with the aim of revealing the major challenges of distance learning and producing detailed information of visual methods and tools used in their curricula.

As for the desk research, all partners shared guidelines in the conduction of focus groups but they were also free to perform more than one focus group, to add specific topics in the focus groups' research and in selecting criteria for attendees (number/provenience etc.)

Generally speaking the focus groups replicate the reflections arising from the national research, affirming that online teaching has several issues when it is performed exclusively and in conjunction with lockdowns.

Common issues are related to various fields:

Educational, which refers to limits in interactions and the efficiency of courses and in the performance of assessment and exams;

Working and professional levels, which describe the increase in workload;

Technical and accessibility, which concern issues related to digital tools and digital accessibility;

Side effects, which are related to concerns about mental and digital burnout

Common positive aspects are generally related to the variety of teaching materials and formats and to the general digital upskilling of teaching. Furthermore, most focus groups reported positively on the use of live and recorded lessons and the employment of digital tools (eg. white board, online polls, Moodle, scanner, digital microscope.)

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3.1. National focus groups

3.1.1. Greece

The Greek cluster conducted two focus groups, the first investigated general difficulties and opportunities which arose from distance learning while the second dealt with the positive and negative aspects of virtual classrooms.

Eleven people participated in total in the two focus groups, the first involving 6 people (three professors from the Athens School of Fine Arts, one from the Agricultural University of Athens, one from the University of Patras and Associate Lecturer from the School of Pedagogical and Technological Education) while the second worked with five professors teaching at the Department of Electrical & Computer Engineering at the University of Patras.

The first focus group reported two main positive aspects of distance learning:

1. the potential to participate in different forms of learning (eg. online workshop with artist, virtual 3D painting);

2. the potential to rewatch the lessons;

whilst highlighting three major negative aspects:

1. the inability to perform practical activities;

2. Difficulties with on-line assessment;

3. The lack of infrastructure.

The second focus group confirmed the inability to have effective practical activities using online tools despite some digital platforms having been useful for teaching purposes.

Regarding visual methods, both groups reported on the use of online platforms for live and recorded lessons, but in addition the first group also noted the use of whiteboards, online pools and presentations.

3.1.2. Hungary

The Hungarian focus group investigated the performance of distance learning in terms of its opportunities and challenges, dealing also with distance learning methods commonly used by professors and lecturers. The focus group was composed of 8 participants working in various faculties (IT, ethnography, sociology, marketing) and holding different offices (professors, lecturers, assistants).
The focus group confirmed the perception described in the national reports regarding the absence of guidance from the central government and the impression that universities had not been not prepared to face the shift toward distance learning. Students and professionals frequently change platforms for the delivery of real-time lessons and many professors reported an increased burden linked to the unpredictability of online learning devices and platforms (eg. problem in connection/presentation etc.)

This concern also linked to issues related to the difficulties of monitoring the engagement of students during lessons and the ability to effectively measure attendance. However, generally speaking hybrid forms of teaching were perceived as consistent in the future.

3.1.3. Italy

The Italian focus group was conducted with 11 participants from different universities and other higher education institutions; 6 from universities (the University of Rome La Sapienza, the Mercatorum Telematic University, the Catholic University of the Sacred Heart and the Link Campus University of Rome) and 5 from other institutions (Academy of Fine Arts of Macerata , IED and the Isia of Urbino and Isia or Rome).

The focus group was conducted virtually through an online platform and was divided into two parts; the first, where each participant shared his/her experience of the challenges and opportunities of distance learning, and a second, interactive, session to share opinions about the skills needed for online teaching.

Both positive and negative experiences were expressed during the first section, with some of the positives mentioned being:

- The flexibility of teaching;
- The ability to collaborate more frequently with external experts;
- The positive use of digital tools;

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while some of the negatives discussed were:

- The difficulty faced in the preparation of dissertations and in management of exams;
- The challenges distance learning posed for creating connections with students;
- The lower rate of participation and concentration in the absence of active lessons;
- The reduction in quality of interactions with professors given the limits placed on non-verbal communication and the discomfort related to moments of silence during distance learning.

Among the changes adopted in respect of visual methods, participants reported the use of online platforms and social media as the main tools for participation and sharing materials. Moreover, they reported that slides and teaching materials were commonly adapted to distance learning through the frequent addition of visual context in the writing.

In response to the lack of physical and non verbal interaction, some professionals have developed new revision methodologies and the use of specific tools such as vertical scanners and virtual whiteboards.

3.1.4. Sweden

The Swedish focus group discussed the problems and benefits linked to online teaching, and collected suggestions about the skills needed to carry out online teaching efficiently through visual and other methods.

The focus group was made up of 6 participants who all work at Linnaeus University as ICT lecturers/educators and was conducted through online meetings using the Zoom platform.

Among the positive aspects mentioned by the Swedish focus group were:

- Their rapid adaptation to distance learning and pedagogies due to their previous general experience and the equipment already in place at the university;
- The support received from the university and from peers in facin and solving technical issues and digital upskilling;
- The general upskilling of professionals.

In contrast, the negative aspects raised were linked to:

- Digital exams, since these raised concerns about Zoom surveillance, with the elaboration of guidelines perceived as necessary by the professors;
- The difficulties of conducting practical lessons;
- The difficulties related to hybrid teaching, especially for teachers with less experience.

In relation to visual methods, the focus group discussed the use of video and real-time lessons as well as the myMoodle platform, and the use of digital tools and platforms such as Mentimeter, Padlet, digital microscopes and GoPro cameras.

3.1.5. South Africa

In South Africa the Cape Peninsula University of Technology conducted two focus group discussions with nine academics from different faculties across the university. Collectively, the group reported on the challenges posed by Covid-19 in terms of the rapid shift to distance learning given that prior to the lockdown, all classes had been delivered face-to-face.

This situation resulted a series of issues that can be reported in five groups:

- Reflections on the impact of distance learning on subjects such as drawing or film production which rely heavily on practice
and interactivity;
- The challenges posed by the redefinition of curricula and courses for distance learning which, in some cases, led to the decision to suspend the delivery of certain courses.
- The lack of emotional engagement with students and the sense of isolation and separation.
- Limited access to digital devices and mobile data and inadequate devices (mobile phone) or working environment (eg. home.)
- Reduced engagement and participation during real-time lessons

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3.1.6. United Kingdom

The partners from the UK conducted two focus groups that were organized on an online conference platform with the participation of 12 professionals plus two moderators. The various attendees covered a range of disciplines and taught across different levels, from first year undergraduate to doctorate.

The focus group investigated the opportunities and challenges posed by distance learning and reported on visual methods that were used. Digital burnout and the lack of human connection was the most shared problem reported by the groups and in addition, concerns were raised relating to mental well-being and accessibility to digital devices for the students.

The educators reported an increase in workload due to the redefinition of courses and curricula, but they considered the use of live demonstrations and recorded training videos (eg. a video on how to use video editing apps) as positive assets in the shift toward online learning.

The attendees reported on the use of various online platforms and tools such as: Miro, Padlet, Jamboard, Zoom, Chatroom and Miro Boards.

3.2. Conclusion

The points raised in the focus groups generally reflect the concerns and opportunities reported in the national desk research, revealing both common trends and specific concerns related to environmental and contextual situations around distance learning.

However, it is interesting to note that in contrast to the national research, the focus groups broadly reported challenges and difficulties related to distance learning which are both perceived as structural or as consistent with the exceptional situation experienced within the last two years.

These points make the argument that the systematic use of digital technologies in the higher education sector is far from being achieved, and institutions and experts should therefore work to collect best practices and to reflect on the possible counter-effects of these pedagogies and tools. Answers are rarely clear-cut and are frequently nuanced and blurred, and the establishment of effective distance learning tools needs to be matched with actual accessibility to digital devices and data and to successful redefinition of the teaching curricula. Furthermore, whilst it seems that distance learning is something that is likely to continue into the future, exclusively delivering curricula online is perceived to be negative and inefficient. Consequently, in order to increase the quality of distance learning, further deliberations should be undertaken in order to balance the negative outcomes and enhance the positive aspects of online pedagogies (both total and blended), and methodologies.

CHAPTER 4

SURVEY

4.1. Introduction

The third means of investigation was the survey, whose purpose was to analyse how educators in the higher education sector used visual methods in their teaching curricula before and during the Covid-19 emergency.

The survey was developed within the project consortium and translated into 5 different languages (English, Italian, Hungarian, Greek and Swedish) to ensure it was disseminated broadly. Questions were formulated from the digital and general level skills identified at European level (LifeCompEdu e DigiComp) and were structured into three main sections. The first of these collected general information on the survey taker, the second grouped information on the use of visual methods in higher education's curricula, while the third explored respondents' perceptions of distance learning in terms of challenges and satisfaction.

4.2. Description and Consideration

The survey was completed by 305 respondents ranging in age from 35 to 64 years old, with a slightly higher number in the age range 45-55 (Fig.1). Respondents were equally represented in relation to gender balance, and 77% of them were professors/lecturers at a University (Fig.2

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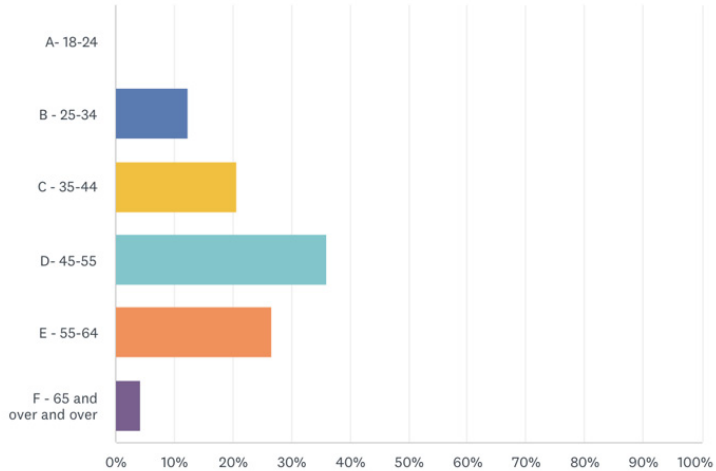

Fig. 1 - Age of participants

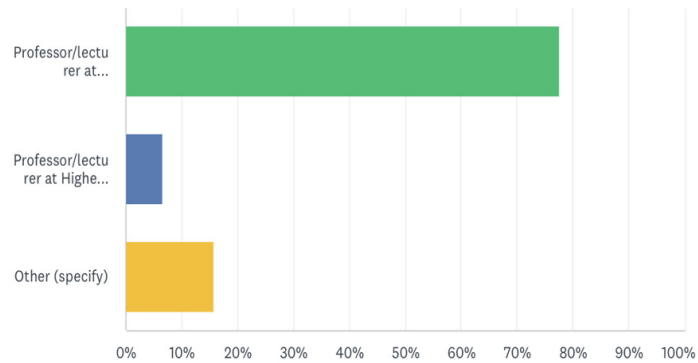

Fig.2. Type of institution

These professionals teach mainly to undergraduate (EQF Level 6) and post-graduate (EQF Level 7) students and work mostly in the fields of Education and Social Science (30,82%), Design and Technology (20,66%), Humanities and Arts (16,07%). (Fig.3)

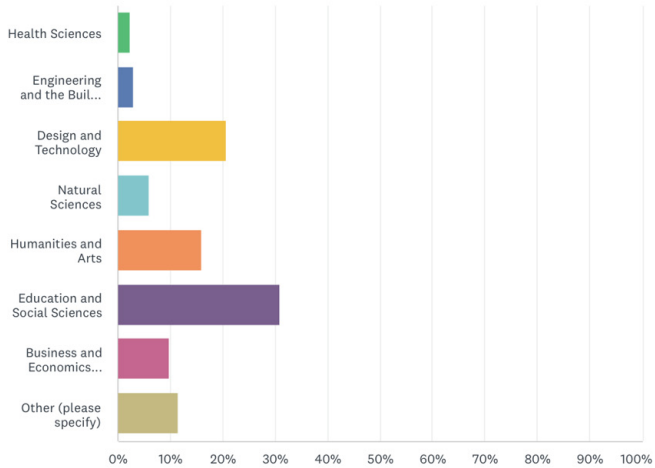

Fig.3. Faculties

Among the respondents, 77,23% use visual methods in their teaching curricula and modules, and generally use methods related to multimedia, video production, photoproduction, drawing and data visualization, while a good amount of respondents rely on practice and equipment associated with photovoice, digital storytelling and graphic design, and a small number adopt 3D/VR, visual mapping, participatory video, comics and fine arts (Fig.4).

For each visual method, the survey analyzed the number and the form (face-to-face teaching, blended, online, hybrid) of their use before, during and after the spread of Covid-19.

The visual methods most often used before the outbreak of Covid-19 (multimedia, video production, photo production, data visualization and drawing) were mostly used in face-to-face or blended learning, specifically as a supportive tool during class presentations, projections, project work or practical sessions, with the hybrid form of teaching (some students in class and others online) was rarely used by teachers and lecturers.

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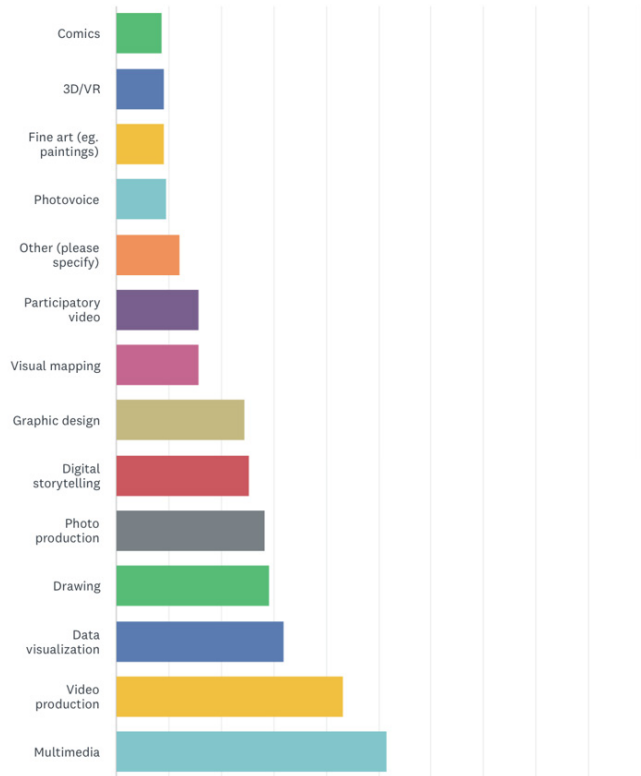

Fig.4 Curricula

During the pandemic there was an obvious shift toward the predominant use of online visual methods that were generally in the form of the virtual whiteboard, dedicated software and platforms and online workshops and classes (real-time and recorded lessons).

In this period the use of visual methods in blended or physical forms were quite low, while the online and hybrid forms of teaching were much more widespread. In particular, the hybrid modality shift - for example, for photo production - rose from 2,7 % to 10,38 during Covid-19.

It is important to mention that, as seen also with the focus groups, the use of drawing consistently decreased, whilst in contrast there was a small increase in the use of multimedia, photo production and

video production.

According to respondents, the use of visual methods will continue into the future and teaching will mainly return to face-to-face or blended forms. However, it is important to note that visual methods are now considered slightly more important to the facilitation of learning and the hybrid form of teaching considered more possible to undertake in comparison to the situation prior to Covid-19.

In the last part of the survey, respondents were asked about their perception of various aspects and challenges of distance learning. Regarding the challenges, most of the respondents argued that they faced a lack of student motivation and various technical problems, therefore supporting some of the conclusions reported in the desk research and focus groups, specifically in relation to the critical aspect of distance learning in terms of engagement (emotional and curricular) and accessibility of courses and curricula. (Fig.5)

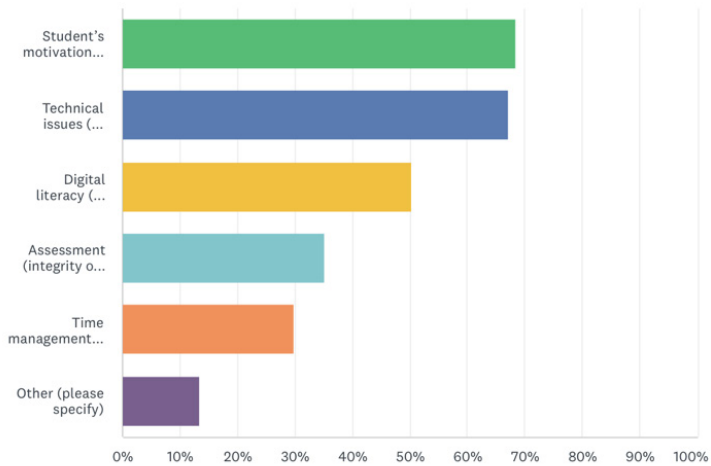

Fig.5 - Challenges

Furthermore, the survey also supports the assertion that distance learning has increased the workload of professionals in curricular (Fig. 6) and extracurricular activities (Fig. 7)

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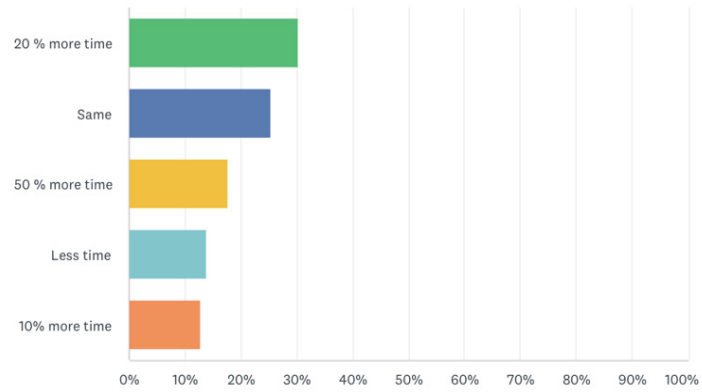

Fig.6 - Time dedicated to course delivery and assessment

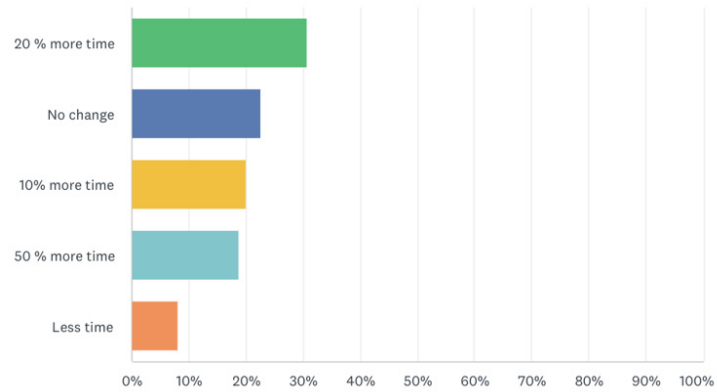

Fig.7 - Time dedicated to extracurricular activities

The survey reveals that the percentage use of visual methods remained quite stable across time (before, during and after Covid-19) but that the way those visual methods have been used has changed considerably between the periods before and after Covid, both in terms of approaches (on-line, face-to-face, hybred or blended) and modalities.

Before Covid-19, visual methods were mainly used in face-to-face or blended forms of teaching and utilised for specific disciplines or to support teaching. During the pandemic, visual methods were mainly used online and became essential for the delivery of interactive lessons and for the achievement of essential learning outcomes.

The difficulties caused by the pandemic prompted an intense drive for the re-thinking of on-line teaching, but it also posed many challenges and concerns over the effectiveness of teaching modules which should be investigated further, taking into consideration the different contexts, limits and problems generated by distance learning.

What it is possible to argue is that there is a big difference between an emergency phase characterized by an unprepared and prevalent imposition of distance learning and a phase characterized by a re-elaboration and adaptation of learning outcomes for distance learning, which [now?] presents as an option in higher education curricula.
In the light of this transition, visual methods remain essential in the development of innovative distance learning didactics and while the light and the shadows of online learnings should be further investigated, the fundamental role that visual tools and methods have in the establishment of more interactive, emotional and dynamic lessons is undeniable.

CHAPTER 5

CONCLUSIONS

5.Conclusions

This preliminary research was based on three inquiry modalities and it reveals different facets of distance learning and visual methods practice and pedagogies. The desk research reflects the phenomenon at a broader and official level, while the focus group and the survey display considerations in a more precise and personal way. Despite differences in their methodologies, all the research approaches reached similar conclusions in terms of trends and concerns related to distance learning in higher education sectors.

The common trends highlighted by the research sustain and strengthen the consortium in the elaboration of future project outputs and, lastly, in the development of learning modules for teachers and professionals working in higher education institutions.
In this regard the three research methods have highlighted six main positive and negative trends related to distance learning and the use of visual methods:

- The accessibility of distance learning is highly influenced by digital readiness in terms of infrastructure and skills. This variant therefore can produce a simultaneously positive and negative impact based on the social, economic and logistic conditions of students and teachers;
- The potential to engage people through different teaching modalities and the feasibility of connecting them for a lower financial expenditure is counterbalanced by an increased workload on many teaching professionals;
- The delivery of learning exclusively online is detrimental for those courses and research which relies mostly on practical activities, and worsens the quality of interaction between teachers and students. However, blended forms of teaching are seen by many professionals and students as likely to continue in future.
- The rapid shift to distance learning has generally resulted in the digital upskilling and reskilling of professionals, but additional research and studies should be conducted in order to create an effective distance/blended form of teaching;
- Distance learning has raised concerns over the mental he-

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alth of students and professionals, both during and after the lockdown.
These findings endorse the need for new and effective learning modules which would help professionals to overcome the main problems/considerations related to distance learning, to foster the competences and skills considered essential by the cc[2] and develop digital competences[3]. Concerning this last point, the pedagogical outcome of the teaching module should be linked to the six personal, social and learning areas of the Lifecomp and to the five main areas included in the DigiComp.
Using these frameworks and linking them to the research results, the competences identified are:

Life competences

- Awareness and expression of emotions, thoughts, values and behavior (Self-regulation)
- Understanding and regulating personal emotions, thoughts, and behaviour, including stress responses (Self-regulation)
- Readiness to review opinions and courses of action in the face of new evidence (Flexibility)
- Understanding and adopting new ideas, approaches, tools, and actions in response to changing contexts (Flexibility)
- Managing transitions in personal life, social participation, work and learning pathways, while
making conscious choices and setting goals (Flexibility)
- Awareness that individual behaviour, personal characteristics and social and environmental factors influence health and wellbeing (Wellbeing)
- Understanding another person's emotions and experiences, and the ability to proactively take their perspective (Empathy)
- Responsiveness to another person's emotions and experiences, being conscious that group belonging influences one's attitude (Empathy)
- Awareness of the need for a variety of communication strategies, language registers, and tools that are adapted to context and content (Communication)
- Understanding and managing interactions and conversations in different socio-cultural contexts and domain-specific situations (Communication)
- Listening to others and engaging in conversations with confidence, assertiveness, clarity and reciprocity, both in personal and social contexts (Communication)

2. Sala, A., Punie, Y., Garkov, V. and Cabrera Giraldez, M., LifeComp: The European Framework for Personal, Social and Learning to Learn Key Competence, EUR 30246 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-19417-0, doi:10.2760/922681, JRC120911. Link;
3. Carretero Gomez, S., Vuorikari, R. and Punie, Y., DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, EUR 28558 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-68006-9 (pdf),978-92-79-68005-2 (print),978-92-79-74173-9 (ePub), doi:10.2760/38842 (online),10.2760/836968 (print),10.2760/00963 (ePub), JRC106281. Link

- Intention to contribute to the common good and awareness that others may have different cultural affiliations, backgrounds, beliefs, values, opinions or personal circumstances (Collaboration)
- Understanding the importance of trust, respect for human dignity and equality, coping with conflicts and negotiating disagreements to build and sustain fair and respectful relationships (Collaboration)
- Awareness of and confidence in one's own and others' abilities to learn, improve and achieve with work and dedication (Growth Mindset)
- Understanding that learning is a lifelong process that requires openness, curiosity and determination (Growth Mindset)
- Reflecting on other people's feedback as well as on successful and unsuccessful experiences to continue developing one's potential (Growth Mindset)
- Awareness of potential biases in the data and one's personal limitations, while collecting valid and reliable information and ideas from diverse and reputable sources (Critical Thinking)
- Comparing, analysing, assessing, and synthesizing data, information, ideas, and media messages in order to draw logical conclusions (Critical Thinking)
- Developing creative ideas, synthesising and combining concepts and information from different sources in view of solving problems (Critical Thinking)
- Planning and implementing learning goals, strategies, resources and processes (Managing Learning)
- Reflecting on and assessing purposes, processes and outcomes of learning and knowledge construction, establishing relationships across domains (Managing Learning)

Digital competences

- To use digital technologies to enhance organizational communication with learners, parents and third parties (Professional Engagement)
- To individually and collectively reflect on critically assess and actively develop one's own digital pedagogical practice and that of one's educational community (Professional Engagement)
- To identify, assess and select digital resources for teaching and learning (Digital Resources)
- Creating and modifying digital resources (Digital Resources)
- Managing, protecting and sharing digital resources (Digi-

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tal Resources)

- To experiment with and develop new formats and pedagogical methods for instruction (Teaching and Learning)
- To use digital technologies and services to enhance interaction with learners, individually and collectively, within and outside the learning session (Teaching and Learning)
- To use digital technologies to foster and enhance learner collaboration (Teaching and Learning)
- To use digital technologies for formative and summative assessment (Assessment)
- To generate, select, critically analyse and interpret digital evidence on learner activity (Assessment)
- To ensure accessibility to learning resources and activities for all learners, including those with special needs (Empowering Learners)
- To use digital technologies to address learners' diverse learning needs (Empowering Learners)
- To use digital technologies to foster learners' active and creative engagement with a subject matter (Empowering Learners)
- To teach learners how copyright and licenses apply to digital content, how to reference sources and attribute licenses (Facilitating Learners' Digital Competence)
- To empower learners to manage risks and use digital technologies safely and responsibly (Facilitating Learners' Digital Competence)
- To incorporate learning activities, assignments and assessments which require learners to identify and solve technical problems, or to transfer technological knowledge creatively to new situations (Facilitating Learners' Digital Competence)

In conclusion, the three outcomes (national report/survey/focus groups) of this first intellectual output are going to be used as a basis for reflection for the development of teaching modules which would help and foster the capacity of professionals to develop effective responses to problems and concerns raised during this current Covid-19 pandemic. In particular, they are going to investigate and to elaborate on teaching materials which attempt to overcome major problems thanks to the use of innovative pedagogies and visual methods in the higher education sector.

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