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● INTRODUCTION

In recent years, the cultural sector has become increasingly important, both for the economic growth of countries with a turnover of 497 billion euros per year equal to 3% of the EU's GDP (Research for CULT Committee-Best practices in sustainable management and safeguarding of Cultural Heritage in the EU, 2018), and for employment, especially of young people, with more than 8.7ML jobs, i.e. 3.8% of EU employment (Eurostat 2019). The digital revolution is having a strong impact on the way in which cultural contents are produced and used, as well as on the way in which the public interacts with culture, increasing the importance of making the territorial cultural system knowable and captivating. Therefore, in terms of the Higher Education offer, there is a need to focus on the development of digital skills applicable to the cultural sector and on their potential for the economic and sustainable growth of the EU (2018/2019 Annual work program for the implementation of the Creative Europe Program). This aspect takes on relevance in the light of the OECD "Education at a glance 2019" Report, which highlights how only 4% of graduates possess adequate digital skills and about 30% of humanities graduates have difficulties in finding employment. The fields of study prevalent above all in Italy, Spain, Greece, Romania, Czech Republic concern humanities, arts and social sciences with much lower employment rates than those achieved by graduates in technical subjects. Although new technologies are one of the strongest drivers of our society, women continue to have limited access to the digital sector in terms of education, career and opportunities, with consequences not only in terms of gender equality but also in terms of productivity and financial loss. The EC study "Women in the digital age" shows that in the EU only 24 out of 1000 graduates have a specialization related to ICT - of which only 6 find work in the digital



sector. In the EU, there are 4 times more men than women who complete ICT-related studies, and the share of men who work in.

The digital sector is 3.1 times larger than that of women. It is estimated that for the EU economy, the annual loss of production linked to the abandonment by women of jobs in the digital sector is approximately 16.2 billion euros. A study conducted in Spain by PLAN INTERNATIONAL and the PWC FOUNDATION highlights that, although females are the most numerous users in new technologies, the perception is that it is males who are more involved. The study also reveals that the majority of girls receive less training for IT careers in their educational setting and that their learning is "self-taught". From the "EUROPEAN GIRLS IN STEM" research conducted by MICROSOFT with the LONDON SCHOOL OF ECONOMICS, it is important to offer girls opportunities for debate with professionals in the sector and training experiences to seize the concrete opportunities deriving from technological innovation. These are the reasons that led the partners to propose themselves as a transnational cooperation network for co-elaborating the "Digital Womanist" University Curriculum for the development of digital hard skills in humanistic students.



✓ A. DESK RESEARCH LITERATURE

1. DIGITAL HUMANITIES CURRENT SCENARIO

Today, we are witnessing the co-evolution of technology and people. As global competition rapidly intensifies, ensuring sustainable economic growth is becoming increasingly difficult. To foster future growth, it is critical to prevent rising unemployment and ensure a high quality of life for citizens. We must make decisions on important educational issues. Due to the impact of digital technology, the living environment of future generations is undergoing fundamental changes, and this change will also affect the educational environment of future generations.

Storms of data, algorithms and computing power are disrupting the fabric of society, changing human interactions, social institutions, economics and political structures. The sciences and humanities are no exception.

As recent publications have shown, what digital humanities are and how to define them is the subject of intense debate.

Digital humanities is a broad field of research and scholarship that includes not only the use of digital methods by arts scholars and the collaboration of digital humanities professionals with computing and scientific disciplines, but also how arts and humanities can provide unique insights to solve problems in society. Cultural issues arising from the use of digital technology are very important.

Historically, digital humanities grew out of the humanities and linked it to other fields such as humanities informatics, social informatics, and media studies. Digital Humanities in particular covers a wide range of topics, from managing



online collections of primary sources (mostly text) to extracting data from large cultural datasets using topic models

Digital humanities have a long and vibrant history in various branches of the humanities that focus on studying evidence with and without computer assistance

The humanities, as historical and interpretive, deal with the present in relation to tradition and human experience; the study of the role of digital tools in changing writing, thinking, and teaching in the humanities falls under the umbrella of digital humanities (Dalbello, 2011: 480).

As described in the Digital Humanities Network, digital humanities include digitization and production of digital materials and combine methods from traditional humanities (such as history, philosophy, linguistics, literature, art, archaeology, musicology, and cultural studies) and social sciences. Electronic tools (e.g., hypertext, hypermedia, data visualization, data visualization, information retrieval, data mining, statistics, text mining, digital cartography) and digital publishing.

In the context of the development of the EU Digital Humanities Strategy, the EU Strategy aims to promote innovative learning programmes through new technologies and digital content in national education systems, using new technologies and open educational resources as means of innovative teaching and learning. In EU Member States (Czech Republic, Romania, Greece), well-known and reform-minded universities have launched initiatives focused on the field of digital humanities.

Its aim is to create a more open learning environment - aimed at delivering higher quality and more effective education - thereby contributing to the EU's



2020 strategic objective of increasing the EU's competitiveness by providing a more qualified workforce and promoting employment growth and growth. In particular, she proposes some key transformational actions at EU and national level:

- Support educational institutions, teachers and students in acquiring digital skills and learning strategies.
- Promote the development and availability of open educational resources.
- Connect digital technologies to deliver classroom content.
- Activate all stakeholders (teachers, students, families, social and economic partners) to change the role of digital technologies in educational institutions.

Curricula that combine humanities and social sciences with digital literacy therefore require a new vision. In an age of automated decision-making and artificial intelligence, creativity and a focus on humanity are critical to educating the engineers and technologists of the future. IT training and its societal impact must start early. Students and scientists must learn to combine IT competencies with ethical and social awareness.

1.1 Brief description to the current situation: strengths & weaknesses, main challenges and barriers

Digital humanities are a discipline that has emerged in recent years, and it is an interdisciplinary field that combines humanities and digital sciences. As a term, it has several interpretations. For example, the term <http://whatisdigitalhumanities.com/> has over 800 definitions, not all of which are compatible with each other. This suggests that stakeholders are more



interested in creating a scientific framework for one of their interests than defining the field of science between digital technologies and humanities research. Many interpretations have led to the misuse of the term, especially in education, where many confuse it with digital literacy, the acquisition of basic digital skills (Stefaneas et al., 2022).

To describe the digital humanities more accurately, it can be said to be an interdisciplinary subject that involves the use of computational tools from related disciplines such as traditional humanities, philosophy, history, literature, etc. Examples include archaeology and museology (Stefaneas et al. 2022).

Critical research in the digital humanities involves the application of algorithms to facilitate the search and retrieval of humanities data. Thus, analytical theory and critical research, along with digital representations of archival materials, enable users to access, process, and visualize information quickly and efficiently (Berry, 2011).

Thus, traditional archives are combined with innovative digital methods and the creation of metadata (Morgan et al., 2013:208).

In the universities of European countries, while digital humanities itself is gaining momentum, it is observed that the main weakness is the lack or even mention of government strategies related to introduction and training at all levels of the education system. For digital humanities, the importance of digitization in the humanities and arts and its relevance to 21st century society. One of the barriers is weekly support for the humanities, including underfunding and a depiction of the humanities as a political and economic approach less relevant to a “modern” society focused on economic production, sustained growth and technical skills. This blind approach ignores not only the social relevance of the humanities, but also their broader social relevance, which can be further developed through



digital skills and digitization itself. Great positive potential can be seen in the current political situation, where digital humanities, digital skills and related education can play an important role in raising public awareness, such as political propaganda, fake news and other phenomena that exist in virtual public spaces and Endangering European values and democracy.

As can be seen from the above, significant efforts have been made in recent years in the field of digitization and preservation of cultural heritage, with a particular focus on the digital representation of cultural artworks and the creation of associated metadata. As a result of these efforts, humanities scholars can obtain rich content in textual or graphic form (Hampson et al., 2012:228).

1.2 The impact of COVID -19 on the digital skills of women

The COVID-19 pandemic has highlighted how digital skills have become essential skills. They are needed to improve the use of communications technology, empower women and improve their employment.

Traditional gender norms still prevail in Europe. The situation in neighboring countries in Europe is unstable. According to EU countries, gender inequalities in employment exist in all regions and are particularly pronounced in the southern Mediterranean.

Despite the increase in female employment, the distribution of unpaid work remained in line with the cultural patterns of the time. However, COVID-19 has also brought some idiosyncratic improvements that at least partially offset these negative trends.



These include a number of women's increased visibility and undervalued careers, as well as the rapid expansion of telecommuting opportunities, which could reshape the work-life balance for men and women in the future.

Focusing on some truly digital jobs that involve the use of technology can shed new light on how the gender digital skills gap affects EU neighbours and access to the EU's internal labour market.

Some research actually shows that despite the difficult situation of women during the Covid pandemic, the women's use of digital has increased. The newly adopted skills also changed the way they live their lives, "but also the way they view themselves and the world around them". (AXA Report on Women and Digital) According to the AXA research 86% of women in Europe went online to learn new skills, 68% of women in Europe worked from home during the lockdowns + helped with online education of their children. This fact has imposed a great deal of stress onto many women.

The field of digital skills is developing. The starting point is getting the necessary equipment and internet access, which most of the EU's neighbouring countries already do by providing schools with PCs and internet access.

Positive steps have been taken, but more needs to be done to ensure that women enjoy an equal society. The EIE is actively involved in the EU's external relations, supporting EU countries to reform their education systems and labour markets to create an inclusive digital society for all.



1.3 Digital Humanism and its impact on the economy: new opportunities for women

According to ENTREPRENEURSHIP AND SUSTAINABILITY ISSUES (ISSN 2345-0282 (online) <http://jssidoi.org/jesi/> 2021 Volume 8 Number 4 (June)); Digital transformation of society offers a great opportunity for the growth of economies and societies across countries around the world. This digital transformation is leading to very rapid growth in the information and communication technology (ICT) sector. ICT currently faces two main challenges. The first problem is the lack of ICT professionals and the second significant problem is the under-representation of women among them.

Today, the spirit of humanism must inspire the development of our society, which is heavily dependent on digital technology. Digital Humanism is therefore distinguished from Digital Humanities, which studies human society and culture through digital media. Digital Humanities, by contrast, seeks to rethink current digital practices, including research, development, and innovation in the digital space. As such, technology adheres to the positivist goal of creating social progress, rather than merely innovation for economic growth (Werthner et al.m 2022).

Today, digital technology can support women-led and managed businesses. Unfortunately, there are significant barriers to using technology in business for women entrepreneurs, including: B.: Lack of participation and prevalence of stereotypes. However, digital opportunities can be a way for working women to bypass some of the traditional cultural and economic barriers in their careers.

Statistics show that the basic barrier is the lack of internet access or devices for women, meaning there is a gender gap in digital learning.



Andreea Paul, president of the NGO INACO (Initiative for Competitiveness), spoke about the impact of digitalization on the workforce, saying that many of today's "rare" jobs rely on human creativity, science, technological research, engineering, and augmentation. emphasized that it is related to the need to bigger math. The job market needs experts in mobile internet, cloud computing, databases, artificial intelligence, advanced manufacturing and 3D printing.

The duality of the digital economy amplifies the barriers facing women entrepreneurs and offers innovative ways to overcome them. If we can close the digital her gender gap, female entrepreneurs will benefit greatly from entering new markets, learning new digital skills, and making business finance easier for her.

Digital Humanism is a fundamental concept that affects not only our digital world, but our future as humans and as a society. So, this is not only an academic undertaking, but also a political issue. Different target groups need to be addressed, such as science, politics, and business. Civil society organizations and NGOs (Werthner et al.m 2022).

1.4 Digital gender inequalities. Brief introduction, considerations and indicators

Digital transformation – the impact of digitisation on the economy and society and the use of connected digital technologies and data – offers new opportunities on a global scale and promises to increase productivity and improve the well-being of all citizens. However, in many G20 economies and beyond, there are



significant gender differences in access to, use and ownership of digital technologies, limiting the equitable sharing of the benefits of digital transformation. Furthermore, transformation is fundamentally changing the content and nature of jobs and the skills required to perform them. This uncertainty masks the potential impact of digitalization on the female labor market: new and more flexible jobs can encourage greater labor force participation and better, more formal jobs, but automation and ICT constrain sectors and occupations. The spread of policies, which may erode the existing workforce, is the emergence of new challenges and models. New knowledge and evidence are needed so that governments can accurately diagnose problems and act to empower everyone in our increasingly digital world.

Worldwide, women face a significant digital gender gap. According to the OECD, women are 10% less likely to own a mobile phone than men – and 26% less likely to use the internet on their phones. Generally, figures are higher in developing countries where affordability is the biggest barrier for most women. (OECD, 2018) The AXA survey shows that “68% of women worked from home during the pandemic – at least part of the time. Women appreciate the flexibility that home- working offers, particularly when it comes to child-minding. But that doesn’t mean there aren’t other problems: 82% of those surveyed said they’d been forced to work after their regular working hours. Nearly three quarters (73%) said they’d found it hard to maintain a healthy work-life balance, mainly because they’d taken on additional household chores, including cooking, grocery, shopping or looking after children – further evidence that the pandemic is eroding recent progress in gender equality.” (AXA Report on Women and Digital, p. 8–9). When it comes to digital, many women still feel at a disadvantage compared to men. It’s affecting younger women in particular. There are still gender barriers to online finance, to jobs in the tech sector and,



in some countries, simply to access the internet. In all, young women seem more aware of the “digital gender divide” in everything from careers to digital skills, access to online finance and creating their own digital business. There are also signs of a widening digital divide among women, regardless of age.

Other than gender, namely being a female, research confirms that obstacles to obtaining digital skills are disability, socioeconomic background, race, age and poverty (OECD/ILO, 2017; Raja, 2016; World Bank, 2016; House of Commons 2016; Warschauer, 2003). According to the November 2017 joint OECD and ILO report, poverty is the major obstacle to obtaining digital skills, followed by social stratification, family structure, socialization, income and educational levels, as well as demographic elements (rural vs. urban areas), i.e. urban areas continue capturing the majority of the gains for economic growth (OECD/ILO, 2017).

Digital education is almost as important as traditional education. Over 90% of jobs worldwide already have a digital component*, and most jobs will soon require sophisticated digital skills. When governments empower girls with digital skills by prioritizing ICT education, they will help girls thrive in economies that automate routine tasks and value digital skills.

Changing needs may create new gender gaps in education and labor markets. Tasks performed by humans using digital technologies that require higher visuospatial skills (Lee, 2007). This may also increase the demand for advanced ICT-related skills in businesses. Some studies show Women are not as good as men at solving digital technology problems, navigation skills, and may be less interested in ICT-related skills than men (Zhou, 2014).

Therefore, we must harness the power of technology and employ innovative solutions to expand its reach and reach. As the world around us changes, we



need to focus on the rights of girls who are more likely to be left behind. “We have a responsibility to ensure that technology and the Internet do not become barriers, but help girls and women achieve gender equality in the labor market.”

1.5 Digitization from a factor of exclusion and gender discrimination to a lever for inclusion, integration and equal opportunities

Gender inequality is a global problem. Gender equality and women's empowerment is a key objective of EU external action. The EU promotes gender equality and women's empowerment in its international partnerships, political dialogue and human rights dialogue. The Gender Equality and Women's External Relations Action Plan (2016-2020) (GAP II)⁸³ focuses on ending violence against women and girls, promoting women's economic and social empowerment, and women's empowerment and citizenship. In this context, digital transformation is very important, especially today with the rapid transformation and digitization of the economy and labor market. Women are still too few in leadership positions, whether in politics or state institutions, whether on the Supreme Court or on corporate boards. These positions must be filled by both women and men, which is critical to successful leadership.

Technologies have the potential to be an effective tool for achieving equality between women and men. This sector offers highly qualified and well-paid jobs. If it is fully open to both halves of the population, it can help close the persistent



gender pay gap. ICT sector has created new opportunities for education and the labor market and presented new solutions for more flexible and diverse use of time and space at work. In many aspects, ICT work, in general, offers favorable working conditions, in terms of quality of work and timing that promote work-life balance. Compared to other occupations, several differences between men and women in terms of working arrangements in ICT jobs have narrowed. For example, compared to women in the health professions and other occupations, women in ICT jobs have a better physical and social environment and a better quality of working time. Atypical hours, such as working in the evening, at night and on weekends, are less common in ICT than in other jobs. Women and men in the field of ICT have more autonomy in deciding on working hours, and most of them feel that their working hours complement their family or social commitments. (EIGE, 2018)

The unequal sharing of caring roles between women and men is another serious obstacle to work-life balance. Although gaps in the care of women in ICT are smaller than in other professions, inequalities persist. It is expressed in the different length and structure of working time between women and men in ICT jobs and in different ways to keep up with work pressure and responsibilities at home. On average, men specialize in ICT specialists longer than their colleagues. Although part-time work is relatively less common among ICT professionals, childcare, and other family or personal reasons are among the most common reasons why women work part-time in ICT. Longer working hours among men lead to lower acceptance of family responsibilities or, conversely, more active contribution of men to family and caring responsibilities is hampered by longer working hours and greater commitment to working. In addition, more women



than men in ICT jobs feel that their work prevents them from devoting time or most of their time to their families. It reflects gender stereotypes and expectations regarding parenting by different standards for good mothers and good fathers. (EIGE, 2018)

Digitization will fundamentally change our lives and our children's lives, it's a transition, it's vital that women help build this future, and an increase in girls gaining IT skills so they can embrace the digital world and be able to proactively help shape tomorrow.

Despite progress towards the Millennium Development Goals of particular relevance to women and girls, and despite Millennium Development Goal 3 identifying gender equality and women's empowerment as a universal priority, overall progress on the Millennium Development Goals for women and girls remains slow and uneven, both within and between countries. In fact, the lack of progress on gender equality hinders progress on all MDGs, with particular concern for poor areas and areas, marginalized, disadvantaged and disadvantaged women and girls, and women and girls who suffer from multiple forms of discrimination and inequality Various people.

1.6 Available resources and organisations dedicated to research and track the role of women in digital transformation and the digital gender gap: role models and best practices

The new National Action Plan for Gender Equality 2021-2025 comes at a time when the coronavirus COVID-19 pandemic is affecting all European countries. While the nation immediately responded and fought the spread of the virus, it is clear that the environment around us is changing, and in this changing



environment, we must design coherent and meaningful policies to ensure the conditions of stability and development for everyone. The unprecedented situation we are witnessing reinforces the need to achieve substantive gender equality and make it a horizontal policy that can and must be put into practice.

According to 2018 data, Greece ranks last in the EU in terms of the gender equality index in 2020, and although the index improved slightly compared to 2010 and 2017, it has remained at the same position since 2010. Our nation's best relative performance is record health and finances, while the worst performers, so the greatest potential for improvement is recorded in power and representation, time spent on care and activities, and work. Incarceration due to the COVID-19 pandemic exposes women already in abusive relationships to chronic exposure to their abusers, putting them at greater risk of domestic violence. Therefore, the country must meet requirements such as measuring the extent and trends in the spread of all forms of violence within the scope of the Convention, organizing educational and technical workshops, educating the public about gender-based violence and domestic violence, and how to respond to it informing and addressing this nature event. The focus of multiple support and strengthening for victims of violence and abused women is the Structural Network, which consists of 43 counselling centres, 19 women's shelters and a 24-hour hotline SOS 15900.

Romania has a National coalition for digital skills and jobs led by APDETIC- Association of Producers and Dealers of ICT equipment. Its targets are: to develop digital skills of young people and students, to upgrade the skills and qualifications of trainers, teachers, and training providers, to strengthen the cooperation between the education sector and the IT industry, to generate public awareness of the need for digital upskilling and reskilling and increase overall



trust in digital technologies, to increase awareness amongst employers of the urgent need to train and upskill employees, to upskill and reskill the labour force. Partners of the NC are: University of Bucharest, the Ministry of National Education, Scoala Informala de IT (The Informal School for IT), UPIR (Union of IT Teachers of Romania), ANOSR (National Alliance of Students' Organisations of Romania), HP Romania, IBM Romania, Maguay, ANBPR (The National Public Libraries Association), eCivis, Junior Achievement (JA Romania), ARIES Transilvania, ECDL, EOS Romania Foundation (Educating for an Open Society), AsociatiaIT.

Good practices in the field of regional skills: successful strategies and improvement initiatives, but also projects with a strong local impact and with a great potential for applicability at national or European level. Such initiatives are: the Informal IT-School, The Mentoring Campus Teach for Future in the ITC, Erasmus Internship for Digital Opportunities, Cyber Security Month.

All EU countries therefore need to make significant efforts in terms of motivation, awareness and support to increase women's participation in positions of power, responsibility and leadership, to close gaps in male participation and performance at EU level, and to effectively implement existing legal provisions quota.



2 DESK RESEARCH OF PROFESSIONAL PROFILES

2.1 Digital Womanist education review (by levels: primary, secondary and university): The training offer in digital skills for women studying humanities-based subjects

In today's academic life, digital tools can bring new dimensions to the humanities and provide important opportunities for research, education, and public understanding of this field of knowledge. With digital transformation at the societal and national level, especially for women as young scientists, new fields of research and new employment opportunities have emerged.

For female students in particular, digital humanities exist internationally at the bachelor's level, requiring the simultaneous development of skills in one or more of the humanities combined with knowledge of computer science.

However, the Commission's study "Women in the Digital Age" (2018) confirms the trend that fewer women are interested in entering higher education or employment in digital fields. Only 24 out of 1,000 female graduates in the EU have studied ICT-related subjects.

In order to create meaningful learning, a teaching method must be found that enables female students to become familiar with digital transformation topics that they did not choose during their secondary education.

To encourage women to study and pursue careers in science, technology, engineering and mathematics (STEM), and to ensure greater female



participation in the digital economy, the EU is supporting young female students to develop digital and entrepreneurial skills.

In addition, women’s participation in research and careers related to digital technology and science, engineering and mathematics will be increased through the following measures:

- Training in digital and sustainable entrepreneurship for secondary school students through a dedicated online learning platform (European Community College for Innovation and Technology Knowledge and Innovation)
- E-STEAM festivals for girls and women in different EU Member States to improve digital and entrepreneurial skills of girls and women
- New higher education courses in engineering, information and communication technology based on an interdisciplinary STEAM approach.

The Commission’s Women in Digital focuses on encouraging and empowering women to take a more active role in the digital age. The strategy focuses on three areas:

Promoting digital skills and education	Challenging digital gender stereotypes	Advocating for more women entrepreneurs
Digital Opportunity Traineeships	Digital Skills Awards	Startup Europe
Codeweek	No Women No Panel Campaign	WE Hubs
Scoreboard on Women in Digital	Cooperation with Audiovisual regulators	EU prize for women innovators



European Network of Women in Digital		CEO Declaration on closing the digital gender gap in high-tech companies
Digital Skills and Jobs Coalition		

The main goal of the above actions is to attract 40,000 new female students to participate in circular economy and digital skills education by the end of 2027.

There is no specialized curriculum in the Czech education system at all levels, specialized on the digital skills training targeting women. In fact, the digital training at the primary level is focused on the basic computer skills, at the secondary level developed into the learning the basic programming skills, however, at the tertiary education there is not a specialized study program within the Czech universities specialized in the digital humanities at all. There is only an individual course dealing with digital humanities in general. The only general course (one semester) in digital humanities is offered by the Masaryk University in Brno (<https://www.czadh.cz/evropsky-registr-vyuky-digitalnich-humanitnich-ved/>)

We couldn't find precise information related to women, just general one, as follows. Romania has a National coalition for digital skills and jobs led by APDETIC-Association of Producers and Dealers of ICT equipment. ¹ Its targets are: to develop digital skills of young people and students, to upgrade the skills

¹ [Romania Digital Skills and Jobs Coalition | Digital Skills and Jobs Platform \(europa.eu\)](#)



and qualifications of trainers, teachers, and training providers, to strengthen the cooperation between the education sector and the IT industry, to generate public awareness of the need for digital upskilling and reskilling and increase overall trust in digital technologies, to increase awareness amongst employers of the urgent need to train and upskill employees, to upskill and reskill the labour force. Partners of the NC are: University of Bucharest, the Ministry of National Education, Scoala Informala de IT (The Informal School for IT), UPIR (Union of IT Teachers of Romania), ANOSR (National Alliance of Students' Organisations of Romania), HP Romania, IBM Romania, Maguay, ANBPR (The National Public Libraries Association), eCivis, Junior Achievement (JA Romania), ARIES Transilvania, ECDL, EOS Romania Foundation (Educating for an Open Society), AsociatiaIT².

Good practices in the field of regional skills: successful strategies and improvement initiatives, but also projects with a strong local impact and with a great potential for applicability at national or European level. Such initiatives are: The Informal IT-School, The Mentoring Campus Teach for Future in the ITC, Erasmus Internship for Digital Opportunities, Cyber Security Month.

Finally, in Greece there are no specific curricula or courses in them for the development of digital skills for women at all educational levels. In particular, in primary and secondary education students learn basic computer skills. Robotics courses for students at both levels to develop relevant skills have been reported in parallel. Similarly, in higher education, and in particular in the humanities,

² [AsociatiaIT](#)



individual digital literacy courses appear, but do not aim to provide students with comprehensive training to develop their digital skills.

2.2 Learning methods to develop Digital skills in humanities-based courses

The main objective of laboratory-based educational activities is to improve students' academic qualifications at the level of human-machine digital skills.

It is recommended to choose a range of different laboratory training cycles, each of which includes a set of practical exercises that, when completed, are expected to provide the skills to respond satisfactorily and effectively through digital ICT tools and services.

The training takes place in parallel iterative cycles, adapted to the European Digital Competency Framework "Digcomp".

The basic training cycle includes introductory exercises in ICT and Applied Computer Science, or H. Use of computer functions and their basic tools, such as operating systems and office applications (word processing, spreadsheets, presentations) and use of the Internet (web browsers, email, search engines); also pay special attention to protection and safe use practices implementation and recognition and respect for intellectual property rights

The next cycle is a continuation and deepening of the foundational cycle, involving expanding the use of ICT applications and harnessing the potential of advanced digital tools in a more professional manner. Therefore, efforts are made to develop skills not only in the creation and development of digital content, but also in the development and use of databases, image editors and



new Internet services such as multimedia applications. Emphasis is also placed on the design, production and critical review of digital content, finding information to solve problems, collaborating and communicating, exchanging information, developing attitudes and ways of thinking about the use and utilization of ICT in students' daily life and beyond. in an active environment.

The third educational cycle targets students who already have basic ICT skills but are interested in new technologies, including the use of ICT applications and tools to develop digital content for science and research. Its purpose is to find, critically evaluate, select and use appropriate digital resources and tools to create digital learning content. More specifically, they acquire skills to create digital content (websites, blogs, etc.), so they are not only simple users of that content, but also have the ability to use ICT applications (mainly open source software). At the same time, the basic properties and functions of information are analyzed. Online distance learning and exposure to a variety of modern digital media, such as interactive and virtual environments, web and/or multimedia applications, and digital games.

Finally, we consider the introductory skills of the Geographic Information System (GIS) and Computer Aided Design (CAD) application training courses to be responsive and designed to provide students with basic knowledge and practice of Geographic Information System (GIS) principles. As well as computer-aided design, and an in-depth study of the latest methods and use of digital technologies in the earth humanities, GIS maps, metadata, data management, open data, data visualization and digitization.



2.3 Skills and capabilities of Digital Womanists: from mere digital literacy to digital maturity; from consumer to prosumer of technologies

In today's world, characterised by instant access to information, by changes and innovations in technology tools, but also by the possibility of collaboration and personal contribution at an individual level, going beyond what was previously possible, people need a wide range of skills to access a wealth of information, services, products and opportunities (Battelle for Kids, 2019).

The future is about digitally powering European economies and the world. Women represent more than half of the European population, but only around 17% of ICT specialists are women. The active participation of women is crucial to shaping a sustainable, fair and just digital economy and society. To properly assess the level of skills, the European Qualification Framework (E.Q.F.), created the eight levels of skills so that every citizen knows what job requirements they can meet, but also identifies their weaknesses so that they can improve (European Commission, 2018). <https://europa.eu/europass/en/description-eight-efq-levels>

EPI LEVELS	FEATURES
1	basic skills necessary for the performance of simple tasks
2	basic cognitive and practical skills (solving simple problems and tasks).



3	cognitive and practical skills necessary to carry out tasks and solve problems using basic techniques and tools.
4	cognitive and practical skills necessary to solve specific problems.
5	integrated cognitive and practical skills useful in dealing with problems through finding creative solutions.
6	advanced skills needed to solve complex and specialised problems.
7	the specialised skills needed in research and in the development of the new knowledge that results from it.
8	more specialised skills, capable of solving important problems that arise in research, helping to extend new knowledge

A very important subset of skills is digital skills. The acquisition of these skills requires sufficient knowledge of the use of the applications in everyday life, the cultivation of understanding, creativity, cooperation, innovation, the ability to evaluate the information available in terms of its validity and the ability to use the media wisely (European Union, 2006).

According to the European Classification of Skills, Competences, Qualifications and Occupations - ESCO, the Joint Research Centre, and the Confederation of Business and Industry (2020), a total of 137 digital skills, both technological and soft skills, are listed in five categories - digital data processing, digital



communication and collaboration, digital content creation, security and problem-solving - which indicate exactly what they are. These are:

<p>digital processing data</p>	<ul style="list-style-type: none"> - Searching, filtering and collecting information from digital web applications - Developing personalised search strategies - Managing the collected information - Critically evaluating digital material, through analysis and comparison, in order to search for the validity of the data
<p>communication and cooperation</p>	<ul style="list-style-type: none"> - Communicating and interacting through digital platforms - Sharing digital material with other users - Participation in the community through digital portals - Developing cooperation through collaborative technological methods - Proper application of the code of conduct online - Creating a digital identity for the purpose of personal protection



digital content development	<ul style="list-style-type: none"> - Editing and converting material into different types - Integrating digital material into existing material in order to create new material - Understanding the application of copyright and intellectual property rights to digital content - Programming, using technical procedures, software development and editing
Security	<ul style="list-style-type: none"> - Protecting technological devices from digital risks - Protecting personal data - Protecting health - Protecting the environment from the effects of the extensive use of new technologies
troubleshooting	<ul style="list-style-type: none"> - Solving technical problems - Finding methods and tools to address technological requirements - Introducing innovations through the application of digital technologies - Identifying digital skills gaps, identifying weak points and finding opportunities to improve them





2.4 Emerging profiles in Digital Humanities: Select 3-4 professional profiles of jobs in the field of Digital Humanities defined by subjects/institutions within the EU framework from national/regional databases.

Digital humanities specialists can be employed in areas such as digital tourism or the wider digital cultural space, but they can also use their knowledge to drive much of the digital economy by creating innovative services.

We estimate that combining the proposed educational process with production through organized internships will yield results that go beyond the simple employment of students in areas such as digital content creation, digital archives and libraries, distance learning, and more.

We believe that understanding the digital world from a humanities perspective will be an employment asset in many other disciplines, such as communications, innovation management and socioeconomics.



Name of the professional profile: **Museum/Gallery Curator**

General profile description

As a museum or gallery curator, you'll manage collections of artefacts or works of art. This includes dealing with the acquisition, care, display and interpretation of items with the aim of informing and educating the public.

It can be a varied job and often includes other activities, such as managing public relations, marketing, fundraising and running education programmes. Curators are also expected to prepare budgets, manage staff and build relationships with both internal and external partners and stakeholders.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Excellent written and verbal communication skills ● Ability to organise, present and communicate messages effectively through design ● Excellent project management and organisational skills ● Knowledge of fundraising for cultural projects 	<p>This area of work is open to all graduates and although subjects such as history and history of art may be the most obvious choices, curators can come from a range of academic backgrounds including languages, literature and science. Curators will often have qualifications in their area of expertise.</p>





<ul style="list-style-type: none"> ● Knowledge of working with museum databases and IT issues ● web design skills ● Good teamworking skills ● Excellent research and IT skills. 	<p>A good honours degree is generally the minimum academic entry requirement, and a pre-entry postgraduate qualification is also usually required - either a PhD or a Masters or diploma in museum and/or gallery studies.</p>
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<p>Name of the professional profile : (Digital) Project Manager</p>
<p>General profile description</p>

Digital project managers are responsible for a company's online marketing strategies. They work within budgets to develop digital marketing campaigns and web applications, identify risks and draw up support documents, and write up detailed plans and reports. Digital project managers work alongside other teams to deliver quality products on time.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Collaborative 	<p>Typical requirements generally include at least three years of experience in a related role, the ability to communicate,</p>



<ul style="list-style-type: none"> ● Strong communication skills ● Problem solver ● Attention to detail ● Strong organizational skills ● Ability to multi-task and prioritize ● Goal- and results-driven ● Get things done ● Manage cross-functional teams ● Coordinate and facilitate meetings and reviews ● Simplify complex workflows ● Tech-savvy ● Data-driven ● Negotiation Skills ● Reporting and Analytics ● Understanding formal Project Management Methodologies ● Content Management Systems Knowledge ● Presentation Skills ● Excellent research and IT skills. 	<p>formal training, and a PMP certification. The minimum requirements are a bachelor's degree. Beyond that, it's a matter of proving your knowledge, experience, and fit for the job.</p> <p>Certifications, past experience in PM roles, and technical skills will certainly help</p> <p>Certification can be acquired through a professional association, a university or college, or through a specially focused online learning program</p>
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Name of the professional profile :**Video Game Developer**

General profile description

Video game developers, also known as game developers, are responsible for designing and developing video games for PC, console, and mobile applications. Their job is to code the base engine from the ideas of the design team. They may also be involved in character design, level design, animation, and unit testing.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Meeting with the design team to discuss game concepts. ● Contributing to the overall game concept and storyline. ● Generating game scripts and storyboards. ● Translating design ideas into a functional game code. ● Coding the base engine of the game. 	<ul style="list-style-type: none"> ● Bachelor’s degree in software engineering or computer science. ● Experience with full-cycle game design. ● Proficient with programming languages, including C++, Java, and C. ● Experience building libraries and APIs.





<ul style="list-style-type: none">● Contributing to audio and animation design.● Animating characters and creating levels.● Developing game milestones and checkpoints.● Troubleshooting code and fixing bugs.● Creating game specifications and designing expansion packs.	<ul style="list-style-type: none">● Knowledge of the latest gaming trends.● Strong artistic and technical skills.● Ability to work as part of a team.● Ability to solve complex software and coding issues.
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Name of the professional profile : **(Digital or Research) Librarian**

General profile description

A **digital librarian** is an archivist responsible for the selection, acquisition, organization, accessibility and preservation of a digital library. A digital library exists in many different variations from the online local public library to an extensive collection of genealogy records. These new digital libraries allow the public access to materials and collections otherwise not available with the click of the mouse or the invention of the Internet. The digital librarian oversees all aspects of managing the library or collection website.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Computer and web literacy ● digital communication ● digital information management ● knowledge of research ● marketing skills ● creating and managing space ● reorganizing space ● managing digital resources ● cooperation ● customer service 	<p>Digital librarians must know how to share data, inform of ideas and knowledge, must have knowledge in developing multimedia in the form of text, audio and video for the Web environment, knowledge in cataloguing digital materials and must have knowledge about computer-based work surroundings.</p> <p>A master's of library science (MLS) is required to work in a public or academic library</p>



<ul style="list-style-type: none"> ● thrive with ongoing change, ● be a constant self-educator, ● remain open to varying degrees of experimentation, ● take risks, ● learn from experience and ● have a sense of optimism of the potential in technology. 	
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Name of the professional profile : Heritage Manager
General profile description

Heritage managers conserve, manage and provide access to heritage sites such as historic buildings, landscapes, museums and ancient monuments.

Abilities	Knowledge
<ul style="list-style-type: none"> ● managing budgets ● financial/project planning ● recruiting, training and supervising staff and volunteers ● liaising with council departments, funding agencies, community organisations, voluntary and local history groups, tourist bodies and private companies ● generating income via fundraising activities, 	<p>A degree, often in a subject such as heritage, archive or museum studies, archaeology, history, art conservation, history of art, fine art, visual art, marketing or business studies. A postgraduate qualification in heritage/museum management is beneficial and may be a requirement for some positions.</p> <p>Prior relevant voluntary and/or paid work experience is essential.</p>



<p>membership, grants and retail activities</p> <ul style="list-style-type: none"> ● ensuring artefacts are cared for ● managing restoration and conservation projects developing heritage attractions to enhance and increase visitor access ● attracting customers through marketing and using IT ● devising outreach activities ● writing reports ● undertaking customer surveys and assessing the results. 	
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Name of the professional profile : Digital Marketing Specialist
General profile description

A **Digital Marketing Specialist**, or Digital Marketer, is responsible for helping maintain a brand by working on marketing campaigns. Their duties include performing market research, strategizing with other marketing professionals and creating content to aid in the success of marketing campaigns.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Research advertising trends ● Research competitors' pricing and products ● Decide on appropriate placement of ads 	<p>Digital Marketing Specialists should have a bachelor's degree in Marketing, Business or other fields that enhance their ability to create original content relevant to promoting your business's products and services</p>



<ul style="list-style-type: none"> ● Determine what content will reach customers ● Develop projects to create content ● Publish digital marketing content online ● Implement email marketing campaigns ● Measure digital traffic ● Monitor social media and Google Analytics ● Optimize paid advertising campaigns using SEO and other tools ● Report on the growth and analytics of campaigns to stakeholders ● Scale campaigns to maximize ROI ● Monitor project status and budget ● Conduct market research to inform campaigns ● Brainstorm and implement experiments and conversion tests 	<p>They should have experience navigating social media such as Facebook and Instagram and understand how keywords boost marketing effectiveness.</p>
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Name of the professional profile: Humanities Data Curator
General profile description





The [Humanities Data Curator](#) has primary responsibility for the planning, implementation, and ongoing production of digital collections and scholarly initiatives in support of digital humanities scholarship and artistic production on campus to ensure their high functionality and discoverability through the flow and lifecycle of digital research data. As part of an evolving team of Data Curators, the candidate will be expected to make substantial contributions to his/her primary area of responsibility as well as to collaborate with other members of this team.

The Humanities Data Curator is responsible for collecting, managing, curating, preserving, and providing access to digital humanities datasets and other digital collections in the Library.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Demonstrated knowledge of issues and technical challenges related to data curation, including format migration, preservation, metadata, data access (including open access). ● Working Knowledge or advanced training with XML metadata. ● Familiarity with common content-management-system platforms used by humanities data creators such as WordPress and Omeka. ● An understanding of the humanities research process as 	<ul style="list-style-type: none"> ● ALA accredited MLS or equivalent experience in one or more fields relevant to library services in data curation. ● significant relevant experience working with digital humanities projects. ● expertise in humanities subject disciplines ● expertise in library and information science ● expertise in archival science ● expertise in computer science ● expertise in systems/records management ● Advanced degree in humanities or related field.



<p>demonstrated by academic or work experience.</p> <ul style="list-style-type: none"> ● Ability to work independently and collaboratively, prioritizing work to ensure that departmental and library goals are realized. ● Excellent organizational skills, proven problem-solving ability, and flexibility. ● Demonstrated initiative in fostering new ideas and in implementing change. ● Excellent oral, written, and interpersonal communication skills. 	<ul style="list-style-type: none"> ● Experience with digital preservation standards and best practices, and digital rights management. ● Experience with scholarly repository platforms and relevant data manipulation tools. ● Prior experience in data visualization and/or data-mining. ● Working knowledge in intellectual property issues (including Creative Commons licensing). ● Working knowledge of Linked Data principles and scripting languages, such as Perl, PHP, and XSLT, and APIs. ● Knowledge of metadata standards, such as TEI and EAD, and data management practices in humanities.
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Name of the professional profile: **3D printing technician**

General profile description

3D Printing technicians assist in the designing and programming of products, ranging from prosthetic products to 3D miniatures. They may also provide 3D printing maintenance, check 3D renders for customers and run 3D printing tests. 3D printing technicians can also repair, maintain and clean 3D printers.



Abilities	Knowledge
<ul style="list-style-type: none"> ● Operate 3D computer graphics software Use graphical ICT tools, such as Autodesk Maya, Blender which enable digital editing, modelling, rendering and composition of graphics. These tools are based in mathematical representation of three-dimensional objects. ● Use CAD software Use computer-aided design (CAD) systems to assist in the creation, modification, analysis, or optimisation of a design. ● Adjust engineering designs Adjust designs of products or parts of products so that they meet requirements. ● Advise client on technical possibilities Recommend technical solutions, including systems, to the client within the framework of a project. ● Draft design specifications List the design specifications such as materials and parts to be used and a cost estimate. ● Operate printing machinery Operate machinery for various types of printed documents, adjusting the font, paper size, and weight. This allows 	<ul style="list-style-type: none"> ● Printing on large scale machines ● 3D modelling ● Maintenance and repair ● 3D printing process ● ICT software specifications ● CAD software ● Maintenance of printing machines ● Printing materials ● Printing techniques





<p>ascenders and descenders to be correctly placed.</p> <ul style="list-style-type: none"> ● Identify customer's needs Use appropriate questions and active listening in order to identify customer expectations, desires and requirements according to product and services. ● Use technical drawing software Create technical designs and technical drawings using specialised software. ● Create solutions to problems Solve problems which arise in planning, prioritising, organising, directing/facilitating action and evaluating performance. Use systematic processes of collecting, analysing, and synthesising information to evaluate current practice and generate new understandings about practice. 	
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Name of the professional profile: Drone pilot/operator
General profile description

A **drone pilot** is responsible for operating a drone, which is sometimes called an unmanned aerial system (UAS). Drones are operated remotely, which is why





drone pilots are also known as remote pilots. A drone pilot controls a drone, causing it to take off, stay on course, and land safely. Also, drone pilots conduct safety tests, oversee vehicle performance, and assess drone system’s capabilities. They may also operate cameras or other equipment the drone carries.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Strong Communication Skills ● Professional Demeanor ● Ability to work well with a team ● Strong understanding of safety, hazard identification, and risk management best practices ● Attention to detail ● Extremely literate with iOS and PC software and computers ● Must be experienced with data uploading and transfer methodologies ● Ability to regularly perform all job functions at Company’s office or work site ● Ability to withstand environmental conditions (e.g., extreme heat or cold, grass, wind, sand, fumes, odors, gases, extreme noise, etc.) 	<ul style="list-style-type: none"> ● Strong knowledge of 14 CFR Part 107 regulations, airspace, and LAANC system ● Experience with a variety of UAS platforms is a plus ● Experience with one or more of the following: ArduPilot, ArduPilot Mission Planner, MAVlink protocol, QGround Control, Mavlink, RFD Tools, Radio Telemetry, or DJI Go ● Familiarity with Google Earth, Google apps, and UAV piloting apps

Name of the professional profile: **CGI Artist**



General profile description

CGI stands for “computer-generated imagery.” **CGI Artists** create still and moving images and visual effects using computers. These images could be anything from characters to environments to special effects.

Although CGI includes many specialties in computer graphics like 2-D and 3-D animation or special effects, CGI is most often a term used to refer to 3-D animations created for things like film, TV, or video games.

Abilities	Knowledge
<ul style="list-style-type: none"> ● a creative mind and a strong visual imagination ● an eye for detail ● the ability to draw, make models and/or use computer graphics software ● good communication skills, if you have contact with clients ● IT skills and knowledge of using software packages such as Flash and Cinema 4D ● to be flexible as you may be switching between different projects ● 	<p>They need to have proficiency in 3D modeling software such as:</p> <ul style="list-style-type: none"> ● 3ds Max, ● V-Ray, ● Adobe Creative Suite <p>And working knowledge in tools such as:</p> <ul style="list-style-type: none"> ● Rhinoceros ● Autodesk Revit Architecture ● Maya ● SketchUp ● Marvelous Designer



Name of the professional profile: **Game Designer**

General profile description

Game designers create the rules, characters, settings, stories, and props for new games, and use computer programming languages to write the required code. They may also manage project teams and test early versions of the games.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Collaboration ● Time management ● Critical thinking ● Effective communication ● Creativity ● Storytelling ability ● Knowledge of multimedia development software ● Programming knowledge ● Adaptability ● Persistence 	<ul style="list-style-type: none"> ● Bachelor's degree in game design, computer science or computer engineering. ● Enthusiasm and knowledge of the industry. ● Relevant certification in programming languages. ● Portfolio of sample projects.



Name of the professional profile: **Graphic Designer**

General profile description

A **Graphic Designer**, or Graphic Artist, is responsible for creating aesthetically pleasing images that accompany written text. Their duties include meeting with clients to establish their needs, using design software to complete projects and revising projects based on client feedback.

Abilities	Knowledge
<ul style="list-style-type: none"> ● Design principles ● Ideation ● Branding ● Typography ● Designing for print ● UX and UI design ● Technology ● Creativity ● Communication ● Strategy ● Problem solving ● Time management 	<p>Most Graphic Designers have a bachelor's degree in art, graphic design or a related field, and you'll probably come across applicants with master's degrees.</p>



3 DESK RESEARCH DISCUSSION

This study aims to highlight the need for workshop training and learning best practices to develop, improve, and deepen digital skills and competencies for the effective use of ICT among liberal arts undergraduates and the benefits they derive from it.

Its purpose is to enable them to fulfil their educational obligations and to meet their scientific, professional and social needs arising from the continuing development and broad integration of digital technologies and media in various fields of activity.

In particular, we would like to highlight the need, importance and role of specific educational workshops to develop, improve and deepen digital skills and competencies for the effective use of ICT, such as:

Augmented and Virtual Reality (AR and VR)

Virtual (VR).

Application

User experience design

Digital storytelling

In addition to implementing best practices for female liberal arts (humanities) students in higher education, benefit from the digital empowerment of participants.





Finally, the importance of integrating education with a common frame of reference for digital proficiency and evaluating its outcomes is highlighted.

4 CONCLUSIONS

Historically, digital humanities have evolved from the humanities and is linked to other fields such as the humanities, social computing, and media studies. Digital Humanities in particular covers a wide range of topics, from managing online collections of primary sources (mostly text) to data mining of large cultural datasets using topic modeling. As described in the Digital Humanities Network, digital humanities combine digitization and productive digital materials with traditional humanities (such as history, philosophy, linguistics, literature, art, archaeology, musicology, and cultural studies) and social science methods. Computerized tools (e.g., hypertext, hypermedia, data visualization, data visualization, information retrieval, data mining, statistics, text mining, digital cartography) and digital publishing.

Digital technologies have enormous potential to improve people's economic and social outcomes in many ways. But while roughly half of the world's population is now connected, and it seems almost impossible for businesses to operate without some ICT, not everyone enjoys this enhanced connectivity equally. The digital gender gap occurs for many reasons.

Foremost among them are barriers to entry, affordability, education (or lack thereof), lack of technological literacy, and inherent biases and sociocultural norms that contribute to gender-based digital exclusion.



In this study, we address gender differences in women's access to, acceptance and use of technological tools, ICT use and digital skills.

At the same time, digital technologies can offer everyone the opportunity to leapfrog and can be a particularly valuable lever for women's economic empowerment.

Given the existing digital gender divide, not every woman can take advantage of these leapfrog opportunities.

The way forward will depend heavily on political support to ensure access, adoption and use of technological tools, especially by women, to reduce and ultimately close the digital gender gap.

All of this requires policies that help address many of the underlying causes of the digital gender gap, especially the accessibility and affordability of digital tools and media. Policies related to accessibility and affordability must also be coupled with education-related initiatives aimed at increasing digital literacy and addressing the many biases and stereotypes that often limit women's participation in the digital environment.

Provides seminar training to develop, enhance and deepen digital skills and competencies for the effective use of ICT, digital literacy training for humanities students in higher education so that they can further adapt to their educational needs, and academic programs. The aim is to prepare these studies for the rapid evolution of the digital environment and to improve their digital skills in broader areas such as making the most of online services, collaboration and content creation, while also being tailored to their educational needs to meet their educational needs. future occupational and social needs. Therefore, developing their competencies and skills can be an important additional resource, both to



improve their academic performance and to engage them more actively in the increasingly digital educational process, as well as a potential resource for them. Also have a lucrative career, better prospects. Finally, it is important that education be adapted on the one hand to a common frame of reference for digital competence, such as that of European citizens, and on the other hand to assess its outcomes.

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B. FOCUS GROUP

1. Results Summary

The expected skill level of female humanities students and the gap between the supply and demand of hard digital skills in the creative and cultural context are captured through data analysis according to the procedures outlined in the methodological guide.

For the Likert scale questions, the frequency of the top two contexts was analyzed, while for the open-ended questions a qualitative content analysis was followed.

We note that students were asked 15 questions. These questions were common to all focus groups. Teachers were asked 16 questions. The differentiation is in the first question and concerns the depiction of the situation in the humanities faculties. 17 questions were asked to cultural workers. The difference is in the first two open-ended questions and they concern their views on necessary conditions for participation in digital transformation and the difficulties that a CCI/SME representative is going to face.



The findings reveal students' perceptions and needs for developing digital skills of female humanities students. They also demonstrate their knowledge of digital humanities skills and how these enhance their position in the labour market and finally how all of the above converge in creating a learning environment that will lead them to develop hard digital skills.

As far as teachers are concerned, the findings reveal the current situation in humanities schools, the degree of integration of digital courses in the curriculum, areas for improvement, and their perception of the development of an ideal virtual learning environment.

Finally, representatives of cultural workers provide insights into the necessity of digital transformation and the hard skills required of female working graduates of humanities schools. They present the challenges women face as workers in cultural organizations and the factors related to hard digital skills that facilitate their employment in cultural organizations.

QUESTION 1 (FOR TEACHERS ONLY) - The current situation in humanities schools

Professors: Professors from various universities in the partner countries of the project refer to the current situation in humanities faculties as regards the educational tools offered to female students and related to digital transformation. Professors point out the advantages of including digital courses in the curriculum but also the disadvantages of over-digitising people's lives from very early childhood. Humanities schools are trying to broaden their fields of activity by introducing subjects with interdisciplinary content to adapt to the demands of the labour market by providing a wide range of knowledge to students, especially female students.



Although the methodological approaches in these schools are not technologically oriented in practice, an effort is being made to innovate and renew them so that they tend towards digitalisation and to integrate the benefits of the world of technology and information into the curricula at bachelor and master levels.

QUESTION 1 (FOR CCIs) - What a CCI/SME representative should do

CCI/SME representatives: In their experience, CCI/SME representatives suggest that in order for someone to engage in the digital transformation process, they must take into account the importance of data protection to keep it safe from any unauthorized access, theft or loss and be aware of how important it is to protect people's privacy.

At the same time, it must challenge previous approaches and stereotypes and be willing to align itself with new innovative approaches to the necessity of digital transformation

QUESTION 2 (FOR CCIs) - Challenges - Difficulties

CCI/SME representatives: The biggest challenges a CCI/SME representative faces in their first steps towards digital transformation are the digital skills gap, increased data security risks and data confidentiality for privacy, stereotypical mindset and culture that hinder any new approach and innovation. At the same time, they point to the lack of appropriate training and information on how to make the most of digital transformation in order to avoid difficulties and inconvenience.

Point 1 – Issues of cultural environment

Students: In their responses on what they consider to be important issues facing the global cultural environment today, students refer to gender discrimination and unequal treatment of men and women, the treatment of the media and the way they reflect the cultural environment, and the role of globalization in the economy and culture. Equally important issues for students are climate change, overpopulation and political will. They also mention the rapid development of technology and the need for digital transformation, support for diversity in professional fields and the challenge for the cultural ecosystem to adapt to today's demands. In particular, digital transformation presents both opportunities and challenges for the cultural and creative sector, and those active in the sector need to be prepared to adapt to the changing landscape. Students believe that digital transformation is enhanced by artificial intelligence, data analytics, data protection and issues related to environmental protection, the circular economy and globalization.

Professors: Professors mention as major issues of the global cultural environment on the one hand the adaptation of teaching to new teaching modes (digital, blended learning, inverted classroom) and in tune with everyday life in order to design courses that are more modern and attractive for students, and on the other hand the lack of patience and short attention span of the new generation. The accelerating pace of technological development, climate change, conflict and political instability, difficulties in generating resources, sustainability, lack of funding/digitalization/technological knowledge, lack of knowledge of cultural heritage and uncontrolled urbanization are major challenges. Professors believe that digital transformation presents both benefits



and challenges in the cultural and creative sector. They also state that artificial intelligence, data analysis, environmental protection and data collection are considered important issues in order to keep pace with the rapid development of technology.

CCI/SME representatives: The issues of the global cultural environment lie in digital transformation and digital privacy but also in the available financial resources. Cultural representatives also point to ethical investments and ecological transition that need to be addressed. It is considered necessary to support diversity in professional sectors, and to address cultural pressures to adapt to **changing times**.

Students	Professors	CCI's
<ul style="list-style-type: none"> ● Gender discrimination ● Globalization ● Climate change ● Overpopulation ● Political will ● Technology ● Digital transformation ● Diversity ● Challenge for adaption ● artificial intelligence ● data analytics, ● data protection 	<ul style="list-style-type: none"> ● Way of teaching ● Lack of patience ● Short attention ● Technological development ● Climate change ● Conflict/political instability ● Resources ● Sustainability ● Lack of funding/digitalization/technological knowledge ● Knowledge of cultural heritage ● urbanization 	<ul style="list-style-type: none"> ● digital transformation ● digital privacy ● financial resources ● ethical investments ● ecological transition



<ul style="list-style-type: none"> ● environmental protection ● circular economy ● globalization 		
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Point 2 – Profile of the Digital Womanist

Students: The elements that make up the profile of the digital womanist are dynamism, efficiency, adaptability, persistence and sensitivity to cultural heritage issues. The digital womanist must also have digital knowledge to be able to use modern technologies and apply them in her work as well as knowledge of handling social media. Courage, creativity, diligence, strong will and boldness should be elements of her personality. The digital woman is characterized by the fact that they have borderless skills and attitudes and a global reach towards innovation. Studies have shown that digital woman's profiles and competencies are linked to entrepreneurship and the ability to manage digital transformation. Therefore, the digital woman's profile should include a focus on the effectiveness of the risk-taking attitude and the ability to manage digital transformation.

Professors: Professors argue that a digital woman should be digitally literate, fluent in at least one foreign language, skilled in the humanities, knowledgeable in the use of online platforms. She must also be adaptable, have a willingness to learn, be able to design digitally, create and design digitally, manage human resources, know about heritage marketing and have knowledge of theory and methodology.



In particular, the profile of a digital woman includes creativity, the ability to think creatively, solve problems and develop innovative solutions. Digital women need to be independent, competent and able to make quick decisions in order to take advantage of opportunities as they arise.

CCI/SME representatives: the digital woman must be passionate about her work, love culture, have imagination and present topics attractively. She must also have leadership skills, be an easy team participant, be able to collaborate, design and create digital objects. Digital women should be able to effectively lead and motivate their team members in order to ensure the success of their projects. They should have fluency in at least one foreign language, knowledge of the humanities, proficiency in online platforms, adaptability, knowledge of heritage marketing and digital design skills. All of these elements are essential to the profile of a successful digital woman

Students	Professors	CCI's
<ul style="list-style-type: none"> ● Dynamism ● Efficiency ● Adaptability ● Persistence ● Sensitivity ● Digital knowledge ● Courage ● Creativity ● Diligence ● Strong will ● boldness 	<ul style="list-style-type: none"> ● digital literacy ● foreign language ● specialization in the humanities ● use of online platforms ● versatile ● willingness to learn ● digital design ● human resources management ● marketing 	<ul style="list-style-type: none"> ● passionate ● love culture ● imagination ● leadership skills ● team participant ● collaborate ● design/create digital objects



	<ul style="list-style-type: none"> ● knowledge of theory/methodology 	
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Point 3 – Topics of the Digital Womanist Curriculum

Students: Courses that should be included in the digital woman's curriculum guide in the view of students are courses in computer science and communication technology, augmented and virtual reality courses and applications related to the exploitation of cultural heritage. They must also take courses in computer use and programming. Other courses that could be included in the curriculum are psychology, sociology, history, philosophy, business administration, digital photography, digital storytelling, digital photogrammetry, 3D printing, marketing strategies and techniques. The topics covered in the curriculum seem to be extremely relevant for those wishing to work in the digital transformation of the creative and cultural sector. It is an important foundational topic that will help students understand the current state of the sector and the changes that are driving digital transformation. In summary, students should learn how to collect, analyze and interpret data to inform their work. They should also have knowledge of trends and challenges in the digital transition of the creative and cultural sector, IT skills, knowledge of software applications, programming, big data analytics, data governance and data security.

Professors: Professors believe that the courses that should be included in the curriculum guide are: introduction to digital humanities, basic principles of computer and data science, digital techniques, digital photography/photogrammetry, 3D modelling/printing, marketing, English, programming, history/culture, linguistics, sociology, philosophy, art, law.



Particularly important are courses related to the creative and cultural sector in the digital age. This area of knowledge is vital for students to acquire practical skills and knowledge in the technical aspects of digital innovation. Students need to understand the tools and technologies used in the field and be able to apply them in practical contexts.

CCI/SME representatives: The most important courses mentioned by cultural representatives are computer science and digital thinking, data security and digital privacy courses, history, archaeology, coding, digital ethics, psychology, marketing and sociology. Students who develop expertise in these areas will be well equipped to navigate the opportunities and challenges of this rapidly evolving sector.

Students	Professors	CCI's
<ul style="list-style-type: none"> ● computer science ● communication technology ● augmented reality ● virtual reality ● programming ● psychology ● sociology ● history ● philosophy ● business administration ● digital photography 	<ul style="list-style-type: none"> ● computer science ● communication technology ● augmented/virtual reality ● cultural heritage ● data science ● digital techniques ● digital photography/photogrammetry ● 3D modelling/printing ● Marketing ● English ● Programming ● History ● Linguistics ● Sociology 	<ul style="list-style-type: none"> ● computer science ● digital thinking ● data security ● digital privacy ● history ● archaeology ● coding ● digital ethics ● psychology ● marketing ● sociology



Students	Professors	CCI's
<ul style="list-style-type: none"> ● digital storytelling ● digital photogrammetry ● 3D printing ● marketing 	<ul style="list-style-type: none"> ● Philosophy ● Art ● law 	

Point 4 – Knowledge a digital womanist should possess

Students: The knowledge that the digital woman should have, according to the students' opinions, is knowledge of computer science, social networks and modern software. They also need to know psychology and proper ways of communication. Knowledge of cultural heritage and global environmental problems is considered indispensable. The digital woman must have a more specific knowledge of artificial intelligence, understanding of the digital cultural world, scientific methodology, digital and virtual environments. Understanding the potential of digital media, virtual reality and interactive media in the creative and cultural sector can be particularly beneficial. It can also help to understand the impact of new technologies and their effects on the environment. Understanding the various applications of artificial intelligence, robotics, computer vision, natural language processing and data mining is important for understanding the creative and cultural world. The principles of data analysis, data management and networked systems can help people in the creative and cultural sector to make informed decisions about their work.

Professors: the professors argue that the digital woman must have both basic and complex knowledge of computers and software applications, and be familiar with the theories and basic concepts of digital worlds. She must also be able to process online resources, search for information and interact with online databases, understand cultural objects and convert them digitally, and be familiar with digital library applications. Furthermore, he/she should have knowledge of history, art and culture and have knowledge of humanities and cultural heritage.

The digital creative and cultural world is constantly growing and evolving, with new technologies and understandings of the world arriving almost daily. Therefore, it is essential that we as a society stay ahead of developments. We need to understand the implications of this new digital world, from the opportunities and challenges of rapid technological development to the nature of human-technology interactions. In addition, we also need to understand the scientific methodology and the interconnected human-environmental issues that arise from our interactions with the world around us. In this way, we can ensure that our actions are informed, responsible and consistent with our collective values.

CCI/SME representatives: The knowledge that the digital woman must have is mainly computer/digital and humanities knowledge. They need to know what the theory involves and relate it to practice and experience. The digital woman must be able to turn knowledge into action.

Artificial Intelligence (AI) is the study of how to create machines that can perform tasks that normally require human intelligence, such as understanding natural language, recognizing objects and making decisions. Rule-based



systems are a form of AI that use a set of predefined rules to make decisions. Machine learning is a subset of AI that uses statistical algorithms to learn from data and improve performance.

Students	Professors	CCI's
<ul style="list-style-type: none"> • computer science • social networks • software • psychology • communication • cultural heritage • environmental problems • artificial intelligence • digital cultural • scientific methodology • digital/virtual environment 	<ul style="list-style-type: none"> • computer knowledge • software application • theories/concepts of digital world • process online resources/databases • search information • understand cultural objects • convert digitally cultural objects • digital library application • history • art • culture/cultural heritage • humanities 	<ul style="list-style-type: none"> • computer science • digital transformation • humanities

Point 5 – Skills a digital womanist should possess

Students: The digital womanist must have a variety of skills. Students mentioned human resource management, patience, organization and increased emotional intelligence as important skills. Essential skills for the digital womanist, students believe, are leadership and understanding of human nature,



adaptability, communication and team spirit. Students believe that the digital womanist should have enhanced digital skills, data analysis and processing skills and complex problem-solving skills. Searching for information can be a difficult task, but with the use of computers and data processing, it is much easier to analyze and draw conclusions from the data. Effective communication and collaboration can help the process run more smoothly, as well as help to reduce the stress that accompanies it. Change management is also essential for successful results, as is the identification and management of sustainability issues. Strong organizational skills are also important for effective management in order to achieve the desired results.

Professors: the digital woman must have communication and digital skills, be able to handle the internet and interpret/evaluate results. She must also have people and relationship management skills and be able to collaborate and respond to new trends and approaches. The ability to speak in different languages, actively participate in different projects, take initiative and solve problems is essential.

Searching for information has become easier over the years as technology has evolved. Computers have made data processing much faster and simpler, allowing us to analyse data and draw conclusions more quickly. With the advent of the internet, effective communication is now possible at the speed of light. We can access data from all over the world, compare and contrast it, and arrive at the right answers more quickly. With all this power at our fingertips, the possibilities are endless; the internet has changed the way we do business, allowing us to reach customers in ways that weren't possible before. We can



provide better customer service and get more immediate feedback on our services. We can also use automation to increase efficiency and reduce costs.

CCI/SME representatives: The skills that the digital woman should have according to the representatives of cultural institutions are: to be a communicator, to have leadership skills, to have commitment, to have experience in history, culture, archaeology and the digital world. Also, to be able to properly evaluate the potential of technology and use digital tools.

Students	Professors	CCI's
<ul style="list-style-type: none"> • management • patience • organization • emotional intelligence • leadership skills • adaptability • communication skills • digital skills • data analysis/processing skills • problem-solving skills 	<ul style="list-style-type: none"> • communication skills • digital skills • management skills • collaboration skills • responding to new trends and approaches • ability to speak in different languages • participation in different projects • take initiative • problem-solving skills 	<ul style="list-style-type: none"> • communication skills • leadership skills • commitment • digital skills

Point 6 – Competences a digital womanist should possess

Students: Students report that the most important competencies that digital womanist should have are communication, crowd management, resource management and social media skills. In addition, she must have a well-



developed computational thinking, know how to use and manage digital technology, be able to anticipate needs and problems and provide effective solutions. Must be intelligent and have developed critical thinking competencies. Digital creativity and the identification of relevant data and information for the proactive and predictive interpretation of cultural trends are considered essential skills.

Professors: Digital woman needs to be assertive, confident in herself, creative and analytical thinking and creativity. She must also be able to collect/analyze/process data, perform digital tasks, use digitization creatively, and be able to connect the technological and socio-cultural worlds. Must have skills required to design and create cultural content, record problems, preserve/enhance/utilise cultural assets. At the same time, it must be able to use advanced technological solutions such as artificial intelligence, IoT and BlockChain in the creative and cultural economy. The production of cultural content in the digital universe, the management of new digital augmented reality technologies to communicate and promote locations, assets, products and services are considered important competences for the digital woman.

Developing computational thinking and digital creativity is essential for any organisation to remain competitive in today's digital world. By leveraging digital technologies, organizations can create powerful, interactive experiences that will not only help promote their products and services, but also engage customers and create a more meaningful connection. In addition, organizations can identify relevant data and information to proactively interpret and predict future cultural trends and develop innovative strategies tailored to the changing landscape. In addition, augmented and virtual reality technologies can be used to create



immersive experiences, allowing users to explore different locations, assets, products and services from around the world in a whole new way. By taking advantage of the ever-expanding digital universe, organizations can stay on top of the latest technologies and use them to their advantage

CCI/SME representatives: As required competences, representatives mention digital problem solving, storytelling, communication, passion for work, collaboration as well as skills in history, culture, archaeology and IT. They also believe that digital women must have the capacity to manage the environmental variable in the design, development and dissemination of cultural content and activities.

Advanced technological solutions such as artificial intelligence, IoT and Blockchain have revolutionised the creative and cultural economy. These technologies have enabled the design, development and dissemination of cultural content and activities to be conducted in a more efficient and effective manner. They are also used to regulate the environmental variable in the design, development and dissemination of cultural content and activities. By using artificial intelligence and IoT, organizations can monitor and analyze the environment in real time and optimize their processes accordingly. BlockChain technology has also enabled organisations to store and share data securely and with increased transparency. This has resulted in increased trust between stakeholders, improved security and increased efficiency.

Students	Professors	CCI's
<ul style="list-style-type: none"> • communication • crowd management 	<ul style="list-style-type: none"> • assertion • confidence 	<ul style="list-style-type: none"> • digital problem solving • storytelling



<ul style="list-style-type: none"> ● resource/social media management ● computational thinking ● use/manage digital technology ● anticipate needs/problems ● provide effective solutions ● intelligence ● critical thinking 	<ul style="list-style-type: none"> ● creative/analytical thinking ● use digital resources ● connect technological and socio-cultural world ● design/create cultural content ● record problems ● preserve/enhance/utlize cultural assets 	<ul style="list-style-type: none"> ● communication ● passion for work ● collaboration
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Point 9 – Prerequisites

Students: The prerequisites for effective introduction to a digital womanist programme, according to students' views, are willingness, interest, determination, ambition, attitude, emotional intelligence, commitment, readiness and basic computer knowledge. They must also be aware of the impact of digitalization on gender equality, technological developments (e.g. Artificial Intelligence) and have high digital skills. Prerequisites include a bachelor's or master's degree in humanities and digital technology and the redesign of programmes for women's economic and digital inclusion.

Professors: Professors believe that the prerequisites for effective admission to a digital woman's program are: proficiency in English, computer literacy and



cultural knowledge. The candidate should be characterized by curiosity, willingness, openness and interest. She should have an academic or professional background related to cultural heritage and a strong familiarity with digital technology terms and current trends and developments in technology.

CCI/SME representatives: The requirements for admission to a digital women's programme are: courses must be interactive and creative to enhance the desire and interest in learning. There must also be a digital approach and most importantly a willingness to learn on the part of the students.

Students	Professors	CCI's
<ul style="list-style-type: none"> ● willingness/interest ● determination/ambition ● attitude/commitment ● emotional intelligence ● readiness ● computer knowledge ● technological developments ● digital skills ● bachelor/master degree 	<ul style="list-style-type: none"> ● English language ● Computer literacy ● Cultural knowledge ● Curiosity ● Willingness ● Openness ● Interest ● Academic/professional background ● Familiarity with digital technology 	<ul style="list-style-type: none"> ● Interactive/creative courses ● Digital approach ● Willingness to learn

2. Focus Group Discussion



The particular importance of the cultural sector for the economic development of countries and the digital revolution of recent years are leading to a transformation of the educational landscape and the way cultural content is produced and reproduced. Digital transformation affects the way the public interacts with culture and increases the importance of making the cultural ecosystem understandable and interesting.

New technologies provide access to information and educational material from countless and diverse sources as well as tools that are useful in the learning process. These allow a higher level of personalized teaching and greater flexibility in the choice of educational content and the characteristics of educational formats. It is therefore necessary to take account of new environments and conditions associated with the digitalization of learning and teaching processes.

The objectives of the team's research are, on the one hand, to map the expected level of hard skills of female humanities students and the gap between supply and demand of hard digital skills needed in the labor market in order to formulate the framework for the development of the educational content. The analysis of the responses from the focus groups reveals the following picture:

From students' standpoint: Female students of humanities support the rise of digital transformation because of the challenges for the cultural ecosystem to adapt to today's demands. They believe that today's digital woman must be digitally literate so that she can use modern technologies and apply them to her work. At the same time, she must be dynamic, efficient, creative and strong-willed and bold. Her skills and competences must be diverse, both in terms of human resource management, communication and leadership, and in terms of digital transformation, data analysis and processing and complex problem-



solving skills. In order to achieve this, the digital woman as a student should have studied subjects in computer science and technology, but also courses in psychology, communication, sociology and history. In this way she will have general and specific digital knowledge, but also knowledge of humanities and cultural heritage. Finally, female students argue that the gap in the current learning environment is found both in the teaching methods and in the courses included in the study guides. Therefore, the integration of digital courses in humanities studies at degree or postgraduate level is a prerequisite for the inclusion of digital women in a curriculum.

From professors' standpoint: According to the teachers, all aspects of cultural promotion and the development of hard digital skills should be included in the curricula. The teachers point out the advantages of including digital courses and the necessity of broadening the fields of activity of humanities studies. They believe that adapting teaching to new teaching methods in tune with everyday life is necessary in order to design courses that are more modern and attractive to students.

For the digital woman, they argue that she should be digitally literate, know at least one foreign language and be specialized in humanities studies. Digital creativity and digital design are seen as essential prerequisites for her integration into the labour market. This is why they propose including courses in computer science, digital techniques, but also history, culture, philosophy and art in the curriculum guides. In this way, the digital woman will acquire basic and complex knowledge of computers and software applications and the concepts of the digital world so that she will be able to process online resources, search for information and understand cultural objects and transform them digitally. As a result of this knowledge, the digital woman will have



communication and digital skills, but also be able to manage human resources and relationships, to collaborate and respond to new trends and approaches.

As for the gap observed in the learning environment, teachers argue that this is found in both teaching methods and curricula. Important factors are stereotypes and reservations, few jobs for women and the lack of flexible working hours.

CCI/SME representatives: CCI/SME representatives consider digital transformation very important and believe that in order to employ a woman in the cultural sector labour market she must be involved in the digital knowledge process. It is considered important to challenge previous approaches that lead to stereotypes and prejudices in order to directly align with new innovative practices. Digital privacy and knowledge of digital privacy is highlighted as an important aspect for the digital woman to be able to recognise the increased risks of data security and confidentiality for privacy protection. The available financial resources as well as the ethical investments and ecological transition that need to be addressed are considered an important issue.

A love of culture, a passion for work, imagination, leadership skills, ease of team participation, collaboration combined with digital skills to be developed through courses in IT, digital privacy, ethics, psychology, marketing and sociology are seen as prerequisites for the digital woman. Experience is also very important so that knowledge can be easily translated into action. Therefore, including courses in the curriculum guides in this direction will bridge the gap in the current learning environment and attract interest in working in the cultural sector.



C. CURRICULUM DESIGN

1. Methodology for training curriculum development

A study of the literature on curriculum theory and models shows that the concept of "curriculum" has been defined in many different ways. In the early 20th century Dewey (1902) defined curriculum as a synthesis of planned experiences. Later, in 1932 Taba defined it as the set of experiences in school and in 1975 Tyler supplemented Taba's definition by specifying "the set of planned and unplanned experiences in school". Olivia (1988) adds that the curriculum is a set of experiences that the student encounters in school, the discipline, the subject matter and the material taught, that is, it is everything that is planned by the school. In the 21st century, Ornstein & Hunkins (2016) consider the curriculum as a system and explain that the curriculum is a structure in which objectives, subject area, learning experiences and assessment techniques are designed. Looking, collectively, at the various definitions given in the literature, we can say that the concept of curriculum is treated as what is taught, a subject area, content, a set of materials, that is, everything that is planned and a set of experiences that students acquire (Marzooghi, 2016).

The constant elements that make up the curriculum are four (4):

- Purpose (goals and objectives)
- Content or subject matter
- Methods or learning experiences
- Evaluation

The diagram below shows the interaction between these elements

Elements of the Curriculum

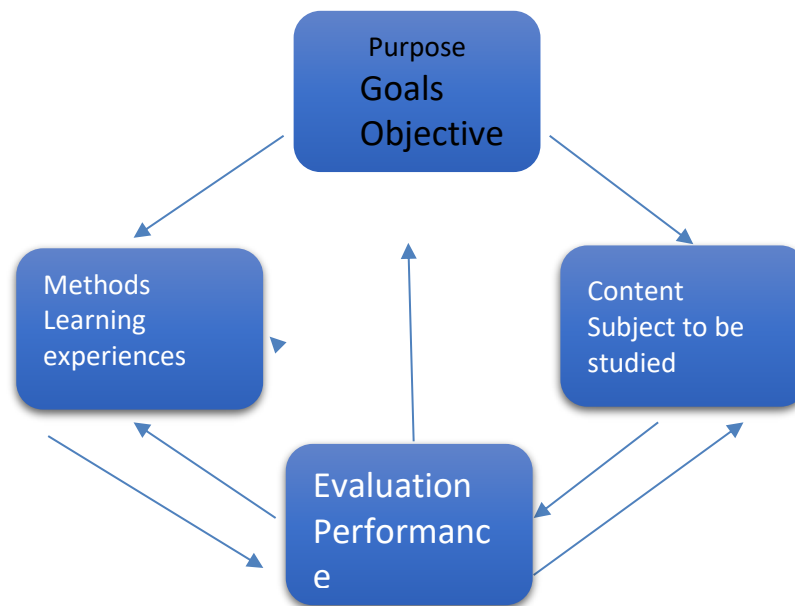


Figure 1: Elements of the Curriculum. Adapted from Gatawa, B. S. M. (1990: 11). *The Politics of the School Curriculum: An Introduction*. Harare: Jongwe Press

The various definitions feed the field of curricula with theories and models. The methodology for developing the curriculum model is based on the development of a prototype from which a different national curriculum will be constructed. The purpose is to establish and define a set of courses with theoretical and practical aspects that will help teachers to acquire necessary and appropriate knowledge and skills to achieve the objectives.

In this project, the methodology is based on 4 theoretical models for curriculum creation:

- a) Tyler Model
- b) Taba Model
- c) Oliva Model
- d) Hunkins Model



Tyler Model: The Tyler Model, developed by Ralph Tyler in the 1940's, is the quintessential prototype of curriculum development in the scientific approach. It is focused on the idea that the purpose of education is to uplift learning that is useful as well as meaningful to learners. Ralph Tyler's model gives the impression that the curriculum process simply starts with defining the objectives of the learning experience and ends with evaluating and assessing the learning experience. It was one of the first models and it was and still is a highly simple model consisting of four steps.

1. Determine the school's purposes (aka objectives)
2. Identify educational experiences related to purpose
3. Organize the experiences
4. Evaluate the purposes

Tyler's Objective Model

Tyler's model is a linear model and the 'ends-means' model.

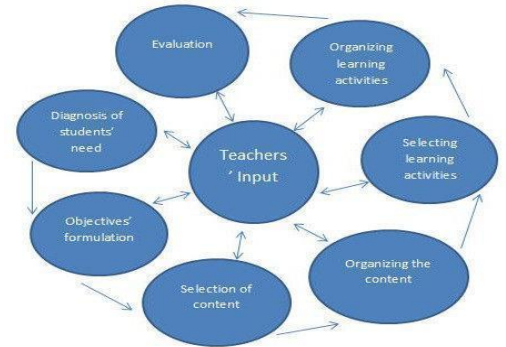


Taba Model: Hilda Taba (7 December 1902 – 6 July 1967) was an architect, a curriculum theorist, a curriculum reformer, and a teacher educator. Taba defines a "curriculum" as a document containing a statement of objectives and specific objectives; it signifies some selection and organization of content; and it implies or demonstrates certain modes of learning and teaching. It includes a procedure for evaluating results due to objective requirements or content organization requires it. She created a multipurpose teaching model that utilizes the use of multiple process i.e. Listing, grouping, re-grouping, labelling, and synthesizing. She promotes the "Down-Top model" or Grassroots approach which is modified



version of Tyler's model. Taba's grassroots model has seven steps as listed below.

1. Diagnosis of Learners' Needs
2. Formulation of Objectives
3. Selection of the Content
4. Organization of the Content
5. Selection of Learning Experiences
6. Organization of Learning Activities
7. Evaluation



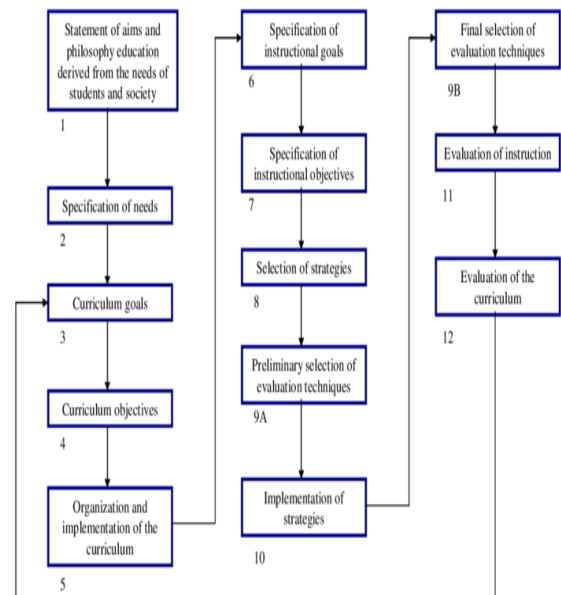
Oliva Model: Peter Oliva's (2005) model provides a way for teachers to accomplish development of school curriculum. According to Oliva (1988), a curriculum model should be simple, comprehensive and systematic. This model offers interdisciplinary, interdisciplinary projects that transcend faculties. It illustrates a step-by-step process of curriculum development, from identifying general and social needs of students, to evaluating the curriculum. Oliva said he wanted to develop a simple, comprehensive and systematic model. This model integrates two sub-models: curriculum sub-model and teaching sub-model. The curriculum sub model mainly includes the planning phase, which is not completed unless transformed into the instructional sub model (Oliva, 1992)³. Oliva's model echoes the limitations of Taba's model in only diagnosing student needs before setting goals. He considers society and subject matter in establishing educational goals and his philosophical and psychological principles,

³ Oliva, Peter. (1992). *Developing the curriculum*. 3rd ed. NY: Harper Collins Publishers, Inc



similar to Taylor's reasoning about goal selection (Oliva, 1992). Oliva describes the curriculum development model in the 12 components in which one another inter-related. The components are as follows.

1. General students and community Needs
2. Special students' needs, the community needs, needs of discipline.
3. The purpose of general curriculum.
4. Specific goal curriculum.
5. Specific curriculum organization.
6. The broad objective of learning.
7. The specific purpose learning.
8. The selection of learning strategies.
9. Selection of preliminary technical evaluation and selection to techniques of final evaluation.
10. Implementation of the strategy.
11. Evaluation of learning.
12. Evaluating the curriculum.



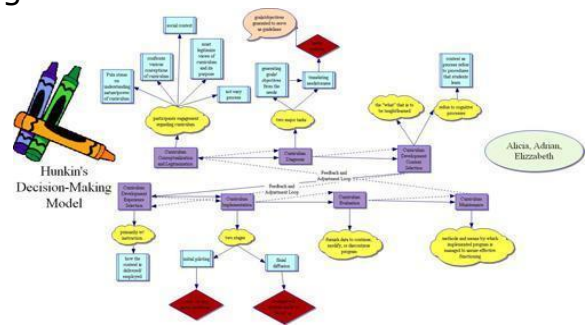
Hunkins Model: The Hunkins⁴ model is accepted as a decision model. It has a unique feature called the feedback and adjustment loop. This loop allows decision makers to refer back to previous stages to make changes and any

⁴ Ornstein, A. C., & Hunkins, F. (2004). Curriculum foundations: Principles and theory (4th ed). Boston: Allyn and Bacon.



modifications. This loop contextualizes the process of creating and implementing curriculum. The model has 7 steps as listed below:

- Curriculum conceptualization and legitimization
- Diagnosis
- Content selection
- Experience selection
- Implementation
- Evaluation
- Maintenance



Using the aforementioned models we seek to create the mapping of the curriculum's lessons by applying cognitive, affective and psychomotor methods of teaching and learning. The exploratory and experiential learning through student experience will follow the linear approach from simple to complex, from general to specific while the evaluation of the results will be done with key performance indicators (Tyler model). At the same time, the lessons created will be a sequence of modules (Taba model). The principles of the Oliva core curriculum will be allied to the students since they will be integrated into the faculty principles by creating interdependencies with other courses. Finally, through learning the techniques of problem solving and decision making (Hunkins model) we expect to achieve the objectives of the program.



2. Digital Womanist Curriculum Design

2.1. Target Groups

The Digital Womanist curriculum is aimed at female students at bachelor's or master's level in humanities and lifelong learning representatives of cultural institutions and, more generally, those working with cultural heritage to teach or enhance their hard-digital skills.

In particular, the programme is open to female students of Philosophy, Literature, History, Archaeology, Tourism, Journalism, Marketing, Culture, Sociology, etc.

2.2. Course Description

The courses included in the Digital Womanist curriculum guide develop the hard-digital skills of female humanities students to enhance their advancement in the cultural sector job market. Through innovative and interactive teaching methods, the contemporary professional profile of a woman specialising in humanities studies who has developed hard digital skills is designed and shaped. The professional woman will be able to use her theoretical methodological knowledge together with her digital transformation knowledge to be able to exploit digital practices and use technology and IT resources and tools in all jobs in the field of humanities and culture, promoting cultural heritage in the best possible way.

Women who attend and complete the Digital Womanist curriculum will be able to find employment in a variety of arts, entertainment and culture sectors such as libraries, museums, etc.



2.3. Professional profile

For the development of the Digital Womanist profile, a variety of sources were used and studied such as:

- Literature review
- Research on focus groups
- Professional competency standards
- Job descriptions

From the above, an integrated framework for the design of the digital womanist's profile, her characteristics as a professional (competences, skills, knowledge, indicators, expected outcomes) on which the design of an integrated curriculum (modules, courses, OER content) was based. The competences of the Digital Womanist and the expertise and skills to be developed were categorized into two groups. The first group includes those considered prerequisites and the second group includes those that are developed in the curriculum and are considered learning objectives.

Five activity blocks refer to the five Digital Womanist competency areas of the curriculum:



Digital Womanist Professional Profile

Competence area	Skills	Knowledge
TRENDS AND CHALLENGES IN THE DIGITAL TRANSITION OF THE CULTURAL SECTOR	<ul style="list-style-type: none"> • Understanding the concept of the digital creative and cultural world and its dynamics • Understanding the impact of rapid technology development in the creative and cultural sector • Understanding the role and importance of block chain technologies • Understanding of theories and foundations of artificial intelligence • Acquire knowledge about the concept of the Internet of Things, what advantages it has for cultural communication promotion strategies • Acquire comprehensive knowledge of the perspectives and developments of the Metaverse in the cultural field focusing on digital, marketing and content creation. 	<ul style="list-style-type: none"> ✓ Artificial Intelligence applied to cultural assets ✓ Blockchain Technologies for the cultural sector ✓ Internet Things ✓ Big Data



<p>DIGITAL TECHNOLOGIES THAT VALORISE THE CULTURAL ASSETS</p>	<ul style="list-style-type: none"> • Understanding the nature of human technology interactions and their implications • Understanding scientific methodology and connected human-environment issues • Understanding of the different development phases of an Augmented or Virtual Reality project, from design to the development of the content required for its realisation, to the programming of interactivity 	<ul style="list-style-type: none"> ✓ AR, VR and Human Computer Interaction ✓ Augmented and Mixed Reality. Digital Stratifications ✓ XR applied to the cultural sector
<p>DIGITAL TECHNOLOGIES: ADVANCED SOLUTIONS</p>	<ul style="list-style-type: none"> • Managing digital technologies and user experience design applications for strategic customer relationship management through digital channels • Understanding of the main programming languages • Applying basic programming techniques • Realising cultural communication projects with coding • Identifying and distinguishing the characteristics of digital platforms to generate connections between organisations, users and data in a cultural ecosystem to operate globally. 	<ul style="list-style-type: none"> ✓ UXD: User Experience Design & UCD: User-Centered Design ✓ Open Access platform



SUSTAINABILITY IN THE CREATIVE AND CULTURAL SECTOR	<ul style="list-style-type: none"> • Understanding the role of the circular economy and sustainable development in the cultural and creative sector 	<ul style="list-style-type: none"> ✓ Sustainability ✓ Glocalization
PIONEERING DIGITAL WOMANISTS	<ul style="list-style-type: none"> • Searching for pioneering digital women • Creating a case study 	<ul style="list-style-type: none"> • who were the digital women pioneers and what was their profile



2.4. Learning outcomes

The expected results are as follows:

Female students who follow the curriculum should be able to understand:

- The concept of the digital creative and cultural world and its dynamics
- The impact of rapid technology development in the creative and cultural sector
- The role and importance of block chain technologies
- The nature of human technology interactions and their implications
- The different development phases of an Augmented or Virtual Reality project, from design to the development of the content required for its realisation, to the programming of interactivity
- The main programming languages
- The role of the circular economy in the creative and cultural sector
- The role of the sustainable development in the creative and cultural sector
- Theories and foundations of artificial intelligence
- Scientific methodology and connected human-environment issues

Also, they could be able to:

- Apply basic programming techniques
- Manage digital technologies
- Use experience design applications for strategic customer relationship management through digital channels



- Have acquire knowledge about the concept of the Internet of Things, what advantages it has for cultural communication promotion strategies
- Have acquire comprehensive knowledge of the perspectives and developments of the Metaverse in the cultural field focusing on digital, marketing and content creation.
- Realize cultural communication projects with coding
- Identify and distinguish the characteristics of digital platforms to generate connections between organizations, users and data in a cultural ecosystem to operate globally.

2.5. Entry requirements

Women students or workers applying for the programme should have basic knowledge and skills in the field of humanities and culture. The Digital Womanist programme includes courses and methodologies that will enhance students' existing knowledge and help them to combine it to create new knowledge and skills in the field of digital cultural heritage. The above is consistent with the main objective of the Digital Womanist project which is to design, test and disseminate a new advanced learning programme for humanities universities aiming to refine teaching methods and empower their female students with hard digital skills to become competent and experienced professionals.

Curriculum Design

OER	Individual Learning Units	Suggested Courses
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<p>OER 1 TRENDS AND CHALLENGES IN THE DIGITAL TRANSITION OF THE CULTURAL SECTOR</p>	<p>1.1. Artificial Intelligence applied to cultural assets 1.2. Blockchain Technologies for the cultural sector 1.3. Internet of Things 1.4. Big Data</p>	<p>✓ Artificial Intelligence ✓ Blockchain Technologies ✓ Internet of Things ✓ Big Data ✓ Augmented reality</p>
<p>OER 2 DIGITAL TECHNOLOGIES THAT VALORISE THE CULTURAL ASSETS</p>	<p>2.1. AR, VR and Human Computer Interaction 2.2. Augmented and Mixed Reality. Digital Stratifications 2.3. XR applied to the cultural sector</p>	<p>✓ Virtual reality ✓ Mixed reality ✓ X reality ✓ UXD & UCD ✓ Open Access platform ✓ Sustainability</p>
<p>OER 3 DIGITAL TECHNOLOGIES: ADVANCED SOLUTIONS</p>	<p>3.1. UXD: User Experience Design & UCD: User – Centered Design 3.2. Open Access platform</p>	
<p>OER 4 SUSTAINABILITY IN THE CREATIVE AND CULTURAL SECTOR</p>	<p>4.1. Sustainability 4.2. Glocalization</p>	
<p>OER 5 PIONEERING DIGITAL WOMANISTS</p>	<p>Case studies</p> <ul style="list-style-type: none"> • <i>Samantha Cristoforetti</i>- Astronaut • <i>Arianna Traviglia</i>- Humanist/Technology • <i>Rania Svoronou</i> - Digital Design 	



	<ul style="list-style-type: none"> • <i>Rada Mihalcea</i> - Computational sociolinguistics • <i>Soňa Kalenda</i> - Technology/ Social Work • <i>Nuria Oliver Ramirez</i> - Artificial Intelligence, Computer scientist, 	
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2.6. Content

Digital womanist curriculum comprises three structural elements:

Block 1: n courses, 15 ECTS

Partners choose existing courses as **suggested** learning features

Block 2: 1 course, 6 ECTS

Digital womanist course

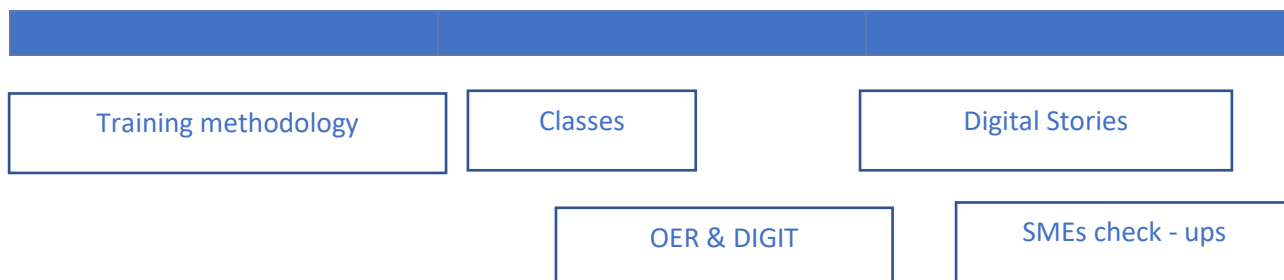
Block 3: field experience, 3 ECTS

Bachelor – internship

Master – workshop

Digital womanist curriculum – 24 ECTS

5 OER		
N suggested courses, 15 ECTS	1 course, 3 ECTS Digital Womanist	1 field experience, 3 ECTS Internship/workshop



2.7. Training Methodology

The curriculum is based on a learner-centred approach that helps to enhance active learning. Courses and modules have a flexible structure, online learning materials with open access to all individual course modules for additional bibliographic resources, examples, etc.

Students will be involved in the process of creating, publishing and managing a digital version. The practical parts will allow students to apply techniques learned beforehand and use the tools presented by the instructors. SMEs check-ups will enable practical application, promote professionalism and facilitate employment. The selected tools include traditional teaching (lectures), online multimedia learning (OER and DIGIT material) and field experience (SMEs check-ups).

2.8. Adoption

We propose different adoption alternatives in our Digital Womanist curriculum. It can be a new University programme or adapt/enrich existing courses using this Digital Womanist courses.

Adoption





Courses	A = 6 ECTS B C Internship = 3 ECTS	A1 – upgraded in content and different competences, B1 C1 – 6 ECTS	Any of A, B, C or A1 offered or Special package for the persons who already work in this filed
Competences	Practical, know to use, etc.	Understanding, using in international context, etc.	Specific – Knowledge & skills focused

2.9. Assessment

Students will be evaluated based on different educational methods, including:

- ✓ Follow-up tests after each learning unit. Students must complete all of the materials that are uploaded to DIGIT platform resources (papers, presentations and videos) for each unit and each section. Ultimately, they must answer questions pertaining to the subject.

- ✓ Company inspections. Students are required to conduct research in a specific company or organization. The institution is dedicated to the cultural heritage sector and prepared a short report that included their findings.

The final grade of the students/apprentices will be a mixture of the tests following each unit on the DIGIT learning platform and company visits as follows:

$$\mathbf{FG} = 50\% \mathbf{T} + 50\% \mathbf{Ch-up},$$

where: **FG** = Final Grade;

T = Test;

Ch-up = Check-up.



✓ CONCLUSIONS

This project's task and research phase were crucial in order to align the cues, evidence, and goals of the curriculum and the Digital Womanist project. This article discusses the most significant issues and solutions in the field of Digital Womanist research, as well as the goals and intended outcomes.

The job market is complex and has a complex, evolving cultural context, it requires hardworking and intelligent people, inspiring women who are professionally qualified to lead the contemporary evolution of this field in the digital age.

The importance of higher education and lifelong learning in the digital womanist field is to educate young women who are motivated and skilled professionals.

University-led digital womanist courses and curricula in the field of cultural heritage and digital hard skills are rare, sporadic and peripheral compared to other bachelor's and master's degrees in Europe.

Existing courses and curricula are delivered through traditional lectures in person, whereas advanced preparation is primarily composed of a combination of traditional and innovative methods that involve knowledge, development of skills, observation and field experience.

University-educated learning is crucial to provide additional professionals (female students) with advanced knowledge, abilities and experience that is immediately applicable to institutions and companies.

associated with the promotion of cultural heritage or the creative industries. They're expected to facilitate the needs of companies and increase the creation



of value and business growth more quickly, more cheaply and more effectively, and strategically.

Today's organizations in the cultural heritage sector must have a strategic approach to the development of communication and entrepreneurial abilities in their employees. Evolved Digital women in the professional field of feminist digital expertise include the following skills: relational, managerial, analytical, strategic and entrepreneurial.

APPENDIX

SURVEY

1. The most important issues (trends) facing the world cultural environment today?
2. Please assess the given items related to the digital transformation in the cultural and creative sector

Table 1: Responses related to issues that face the cultural and creative world today

Topics that face the world	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know
Digital transformation						
Artificial intelligence						
Augmented reality						
Big Data						



Data security, digital privacy						
Internet of Things						
Block chain (NFT -Non-Fungible Token, etc.)						
Environmental protection						
Circular economy						
Sustainability						
Glocalization						

0. Please describe the profile of the digital womanist. In your opinion, what are the most important traits?

0. Please assess the given definition of the profile of Digital Womanist

Table 2. Assessment of the given definition of the profile of Digital innovator and entrepreneurial leader

The profile	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know
I agree with the statement						

0. What are the most important topics (Courses) that should be covered by the Digital Womanist curriculum?

0. Please assess the given items

Table 3. Assessment of the given topics



Topics for the Curriculum	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know
Trends and challenges in the digital transition of the creative and cultural sector						
Computer Skills, Software Applications, Programming						
UXD: User Experience Design & UCD: User-Centered Design						
Analytics and Big Data						
Data Governance, Algorithms and Values						
Design thinking						
Data security, digital privacy						
Open Access platform						
AI applied to cultural assets						
Blockchain Technologies for the creative and cultural sector						
Technologies that alter realities applied to the valorisation of the cultural heritage						
Sustainability in the creative and cultural sector						
<i>Other, please specify</i>						

0. What is the Knowledge that a digital womanist should possess? (Knowledge includes theory and concepts, as well as tacit knowledge gained as a result of experience in performing certain tasks)

0. Please assess the given items

Table 4. Areas of Knowledge – answers to the Consortium’s suggestions

Knowledge	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know



Understanding the concept of the digital creative and cultural world and its dynamics						
Understanding the impact of rapid technology development in the creative and cultural sector						
Understanding scientific methodology and connected human-environment issues						
Understanding the nature of human technology interactions and their implications						
Understanding of theories and foundations of artificial intelligence						
Understanding principles of data mining, analytics and management						
Understanding the role and importance of block chain technologies						
Understanding the role of the circular economy and the sustainable development in the creative and cultural sector						
<i>Other, please specify</i>						

0. What are the skills a Digital Womanist should possess? (A skill is goal-directed, well-organised behaviour acquired through practice and performed with economy of effort)

1. Please assess the given skills

Table 5. Skills – answers to the Consortium’s suggestions

Skills	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don’t know
Searching for information						
Using computers						
Data processing						



Analysing data						
Drawing conclusions						
Effective communication						
Effective collaboration						
Dealing with stress						
Change management						
Recognising and addressing sustainability issues						
<i>Other, please specify</i>						

0. Competencies that a Digital Womanist should possess? (Competence indicates sufficiency of knowledge and skills enabling someone to act in a wide variety of situations)

1. Please assess the given Competencies

Table 6. Competencies – answers to the Consortium’s suggestions

Competencies	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know
Develop computational thinking and digital creativity						
Produce cultural content within the digital universe						
Manage the new digital technologies of altered reality to communicate and promote locations, assets, products and services						
Identify relevant data and information to proactively and predictively interpret cultural trends						
Use advanced technological solutions such as AI, IoT and BlockChain in the creative and cultural economy						
Govern the environmental variable in the design, development and						



dissemination of cultural content and activities						
<i>Other, please specify</i>						

0. In your opinion, what is the gap in the current learning environment for the optimal education of future Digital Womanists?

0. Please assess the given set of techniques required to properly educate the Digital Womanist profile (Figure 6).

Table 7. Assessment of the following aspects of pedagogical approach are vital to leverage digital innovativeness

Pedagogical approach	Not at all	To a small extent	To a moderate extent	To a great extent	To a very great extent	I don't know
Mix of new and traditional teaching methods from different disciplines						
Tandem approach (academic teachers together with business consultant)						
Mentoring						
Business simulation						
Projects						
Internships						
International studies						
Community building						
Business modelling						
<i>Other, please specify</i>						

0. In your opinion, what are the prerequisites to effectively enter the Digital Womanist program?



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