



Expanding sustainability thinking in vocational education in arts and crafts

Evidence from MOSAIC

Centre of Vocational Excellence

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Preface

Environmental sustainability is a hot topic, occupying the centre of public attention for decades now. Despite being highly debated, there is no universally accepted official definition of this concept. In this report we draw on the definition provided by the National Geographic Encyclopedia as “the practice of using natural resources responsibly today, so they are available for future generations tomorrow” (National Geographic, 2023). This definition sits in the wider context of sustainable development, a concept developed by the United Nations in 1987 (Brundtland, 1987) which stresses the same idea of meeting the needs of the present without compromising those of future generations. This framing of the concept highlights the fact we cannot speak about environmental sustainability today, in isolation from other concepts such as economic and social development.

Many initiatives, measures, and collective efforts have been recently put in place to tackle the environmental issues our planet and societies are confronted with. Preserving Europe’s natural environment is one of the 6 priorities of the European Union by 2024 (EUROPEAN COMMISSION, 2019) and one of the 17 Sustainable Development Goals (EUROPEAN COMMISSION). Furthermore, a series of policy measures such as the European Green Deal, the Sustainable Development Goals and the EU regulation on sustainability (EU 2020/852) address this aspect, showing that sustainability remains a guiding principle for policies and actions across different sectors. As the EU’s understanding and approach to sustainability continues to evolve, these policies and initiatives are regularly updated to align with emerging priorities and global developments.

Inside this context, the creative sector has been recognised as a lever of sustainability, with a potential that remains to date largely untapped (UNESCO, 2022). According to UNESCO and other research bodies, the arts and crafts sectors are perceived as critical employment providers. They occupy a leading position in accelerating the transition towards sustainable development, by influencing employment, fair trade and ethical production (Gudowska, 2020). To the purpose of this report, we draw on the codification of craft products offered by UNESCO in the International symposium of crafts, which says that “artisanal products are those produced by artisans, either completely by hand, or with the help of hand tools or even mechanical means, as long as the direct manual contribution of the artisan remains the most substantial component of the finished product. The special nature of artisanal products derives from their distinctive features, which can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant” (UNESCO, 1997). This deliberately broad definition shows just how difficult it is to grasp this sector of activity in a very concrete and precise way. It is also interesting to note that the European Commission refrains from defining and legislating for the craft sector, leaving this power to each Member State: “craft enterprises will continue to be defined at national level, because of their specific characteristics” (Recommendation of 3 April 1996 on the definition of SMEs (96280/EC). The European Commission continues to support these sectors through a series of initiatives such as the European Craft Days and the European Design Innovation initiative. In doing so, it recognises crafts as a form of cultural expression and economic activity that contributes to job creation, cultural diversity, and regional development. It also acknowledges the role of design in

fostering innovation, enhancing competitiveness, and improving the quality of products and services. Design encompasses various disciplines related to creating and shaping the aesthetics, functionality, and user experience of products, services, environments, and visual communication. Between arts, crafts and design there is an overlap and interplay. However, each has its own distinct objectives and approaches. Design creates purposeful and functional solutions tackling specific problems, art emphasises creative expression and aesthetics, and crafts involves skilled manual work to produce handmade objects. As a matter of fact, the new work plan for culture (European Commission, 2022) puts innovative creative approaches at the heart of a series of strategies aimed at and helping transform the behaviour of both cultural stakeholders and citizens to address the climate crisis.

Arts and crafts become the forerunners of the EU's sustainable development strategy through their strong potential of social and cultural innovation. This means not only aligning to the broader vision established by policy measures and initiatives, but also demonstrating an active contribution to innovating environmental practices. Education plays a fundamental role here, through its ability to instil knowledge, skills, and values that promote responsible practices. Green practices, eco-design and responsible design put under the spotlight a new set of skills which are oriented at solving specific environmental problems. We need to keep up with the constant evolution and update of these skills and the knowledge they build on.

So how can we expand our thinking about environmental sustainability in arts and crafts? What educational and connected practices enable us to do so and how can we map these in a comprehensive way? In reflecting upon these questions, the role of Vocational Education and Training centers (VET centers) as main institutions engaged in art and craft education emerges as fundamental. The European Commission acknowledges Vocational education and training (VET) centers as providers of essential skills, which enhance learners' employability, supporting their personal development and encouraging active citizenship. VET boosts enterprise performance, competitiveness, research and innovation (EC, 2023).

In this report, we look at how arts and crafts progress our contemporary understanding of environmental sustainability through specific initiatives and best practices inside vocational education (VET) and the connected professional context. In doing so, we use a practice-led lens that links the macro context (legal), to the micro-perspective provided by actors such as VET centers and craft/design businesses, to grasp the way in which best practices emerge. We build on the results of MOSAIC - Mastering job-Oriented Skills in Arts & crafts thanks to Inclusive Centres of vocational excellence (Mosaic, 2022) - an Erasmus+ project bringing together 15 partners from 7 countries to explore how the arts and crafts sectors can respond more accurately to new emerging needs and societal changes. One of the main results of this research is a framework that provides an organised manner of understanding best practices inside VET education, aligning it to contemporary needs and the wider European context. After the introductory section, chapter two details the methodology used in MOSAIC for mapping environmental practices in arts and crafts. Chapter 3 presents the results of the mapping process and introduces a framework for an easier classification of best practices. The concluding section discusses how the

forementioned framework helps us to think about the future of eco-responsible education and skill creation.

1. Introduction

There is almost a poetic appeal to crafts. Crafts repeat in the same ways, the same shapes using cultural codes as an aesthetic language. The knowledge, skills and labour residing in crafts make them situated, i.e. highly contextualised and localised practices. By maintaining continuity (in contrast to fashion that goes by trends), crafts provide established codes for interpreting local culture. In doing so, they inhabit their environment in a caring and conscious way. This aspect of crafts stimulates a continuous reflection on material culture that makes us constantly reconsider our relationship with the environment, as well as the idea of novelty/innovation. Design on the other hand generates value through the narrative, or the storytelling behind creation, which is a fundamental part of meaning making. This shows that arts and crafts are closest possible to topics of contemporaneity and sustainability. They educate on a broad range of practices that are deeply embedded in the quality of the environment.

1.1 Presentation of MOSAIC, missions, objectives and resources

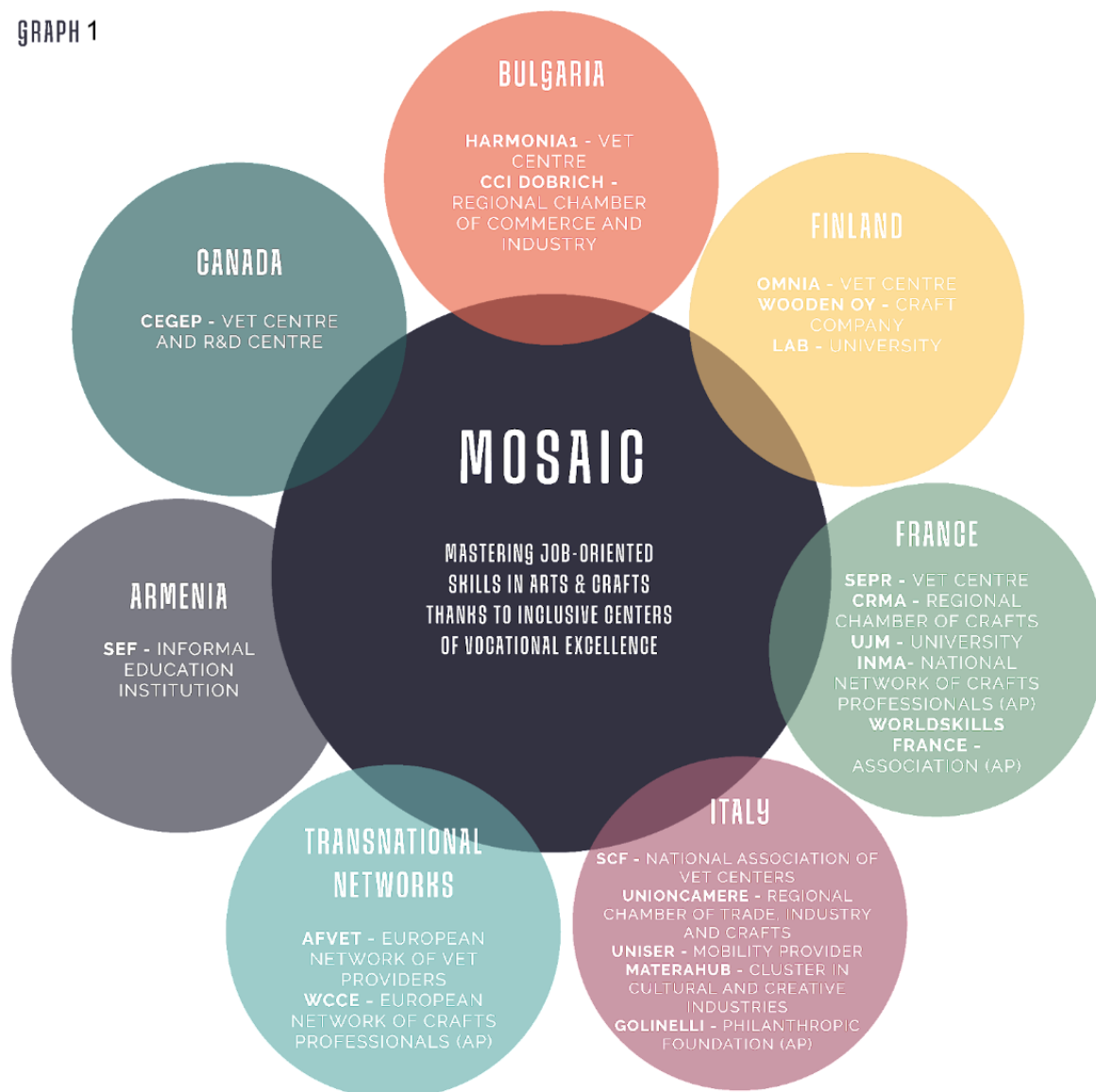
MOSAIC (Mastering Job-Oriented Skills in Arts and craft thanks to Centres of vocational excellence) is a European ERASMUS plus project involving seven countries - Armenia, Belgium, Bulgaria, Canada, Finland, France, Italy - and 15 main partners - training centres (6), universities (2), companies (1), chambers of commerce and industry (3), mobility service provider (1), cultural industries expert (1), multiplier organisation (1) - plus a significant number of secondary partners (Graph 1).

In its declaration of intent, the European MOSAIC project defines itself as follows: "Through this project, we want to address certain key issues for vocational training schools and companies dealing with crafts, tradition and creativity, by providing concrete solutions in tune with the times, which will guarantee the full employability of learners and the competitiveness of the business sector" (MOSAIC, 2022). In other words, what unites the different partner countries and the different players in the project is this collective reflection on arts and crafts and, more specifically, their teaching. It is important to emphasise that MOSAIC is the first CoVE to focus entirely on the arts sector and crafts, as part of the cultural and creative industries.

MOSAIC's main objective is to improve the quality of vocational training in the arts and crafts in order to meet the challenges posed by digital, environmental and socio-economic developments, by proposing to generate innovations from three angles: **technical**, **educational** and **social**. To achieve this, MOSAIC has targeted specific craft sectors, namely: traditional and rare crafts, precious metals and jewellery, furniture and wood, design and industry, which correspond to the fields of expertise of the various partners as

well as to the local and national specificities of the countries represented. In addition to the main objective, the project is further structured by five specific objectives:

GRAPH 1



1. Increase and improve collaboration between companies, VET centres and higher education institutions, in order to achieve a state of mutual fertilisation;
2. To update the range of initial and continuing vocational training courses in the arts and crafts by proposing new training modules;
3. Encourage internationalisation and transnational strategies in response to changes in VET and society;
4. Building a forward-looking VET by integrating digital methodologies and environmental sustainability;
5. Improve strategies for the inclusion of VET providers and facilitate the transition to the world of work in the arts and crafts for those with fewer opportunities.

The MOSAIC project is divided into 6 Work Packages (WP), 3 of which are operational - WP 3 (research), WP4 (training) and WP5 (internalisation and experimentation)

- and are implemented at specific points in the project. The other three, known as functional work packages, WP1 (coordination and administration), WP2 (management and quality) and WP6 (dissemination and impact), are implemented on a regular basis throughout the duration of the project. The activities of these WPs (1,2,6) are in fact cyclical and will be repeated whatever the stage of the project. MOSAIC has opted for a classic "waterfall" methodology described by modern project management theories. The tasks are organised in a chronological sequence that will lead to the production of the final deliverables with stages that are consistent, meaning that each phase will start at the end of the previous one. The operational work packages (3, 4 and 5), for example, have been planned in chronological order in three stages.

Stage 1: this is represented by WP 3 "Research", which will be used to define the state of play, collect data from companies and VET providers on skills gaps and good practice in terms of digitisation, inclusion, R&D, etc.

Stage 2: the second stage will consist of developing the training modules of WP4, based on the elements that emerged from the research carried out in stage 1. MOSAIC partners will use the information collected and combine it with their expertise to develop: a) sector-specific training modules in the professional fields of precious metals and jewellery, furniture and wood, design, arts and industry; b) an entrepreneurship training module focusing on digital marketing and the sharing economy which will be tested on courses concerning traditional and rare crafts; c) two training courses for school staff on digitisation and inclusion.

Stage 3: Once the training offer has been updated, the partners will focus on increasing the internationalisation process of VET schools in WP5, by offering transnational study programmes in Arts and Crafts and a training course on internationalisation for school staff.

MOSAIC has a substantial budget to carry out its mission, with an allocation of 3,986,119 euros over 4 years for a total budget of 6,000,000 euros. The Mosaic budget is made up of 4 main categories of costs: staff costs, purchasing costs related to mobility and the creation of project deliverables, and subcontracting. Each partner is allocated a specific budget in proportion to its mission, requirements, constraints and operations.

1.2 Presentation of WP 3. Research

The application file for the ERASMUS Plus project has precisely defined the operation of WP3 research. WP3 is the first operational WP of MOSAIC. It provides an opportunity to take stock of certain subjects relevant to developing excellence in VET. It creates the scientific knowledge base for the next two operational Work Packages (4 and 5). For these reasons, it is linked to all the specific objectives. More specifically, the research activity sought to answer the following questions about the future of the arts and crafts:

1. What skills do companies working in the traditional and rare crafts, precious metals and jewellery, furniture and wood, design and industrial sectors require? How do they see the future and the changes that will affect their sectors?

2. What are the characteristics that facilitate the creation of R&D centres or departments in a VET institution? What are the steps involved in setting up an R&D centre? How can companies get involved and carry out research in VET centres, especially those with limited capacity to invest in R&D and new technologies? How can R&D be financed?
3. How has digitisation been integrated into the normal processes of a VET school? What are the consequences of Covid-19? How can the digitisation process be improved so that it enriches rather than substitutes the activities that are essential for craftspeople?
4. What does the craft industry need in order to employ young people with fewer opportunities, such as special educational needs or disabilities?
5. How can we incorporate more content on environmental sustainability into our training courses?
6. What are the most innovative ways of doing business? How can online marketing and digitisation support start-ups? How can the sharing economy benefit young people who want to set up their own business?

In addition to deliverables to document the results of the research, WP 3 aims to create an online European Art Professions Observatory: an online platform where all the data collected by the research will be accessible by practitioners. This platform will also contain a virtual infrastructure enabling regular surveys to be sent out to companies in order to update the skills gap analysis, even after the project has ended, and to provide useful figures to vocational training centres and institutions dealing with arts and crafts. To ensure the long-term future of research into arts and crafts, the partners will develop a scientific journal to disseminate their findings and fuel academic debate on the future of the creative and cultural industries.

This work programme is particularly rich in activities and outcomes, as it aims to produce a coherent body of knowledge covering the most interesting drivers for the future development of arts and crafts VET. Each task presented below is linked to a single outcome. However, several tasks are needed to produce a single outcome, so the tasks can be grouped as presented below.

- Analysis of skills gaps in the arts and crafts sector
- Publication on digital education in arts and crafts.
- Methodologies to promote social inclusion in the arts and crafts sector.
- Publication on methodologies for increasing environmental education in the crafts sector.
- Recommendations on how to encourage R&D in VET
- Production of a document on new economic and social business models to support young entrepreneurs.
- Tasks related to the production of the European Observatory

To carry out these various tasks, WP3, coordinated by UJM and CCI Dobrich, was structured around 12 researchers (8/France/4 Finland), 1 project engineer (France), 1 sound and image technician (France) and 1 project manager (Bulgaria), combining and federating multidisciplinary skills: design, art history, marketing management and education sciences.

1.3 Defining the concept of crafts and artistic professions

To better understand MOSAIC, it is necessary to establish a few milestones on the notion of craftsmanship. The branch that interests us, arts and crafts, is directly linked to the more general branch of crafts. Both are not recent inventions, even if the terms took a long time to appear. Almost all civilisations have been built in part around these concepts. However, they have not always received the attention we give them today. While at certain times a few families of craftsmen were able to obtain significant privileges in various countries - glassmakers, for example - it has to be said that disdain and contempt have also accompanied these activities. This was the case in the Roman Empire, where, from Cicero to Appuleius, the words and comments could be acerbic (Kizaba, 2006): "The vile arts and those that masquerade as such, the purely manual trades, themselves contribute greatly to the comfort of existence; but they have nothing in common with virtue [...]. According to Posidonius, the arts fall into four categories: the vulgar and low arts (*vulgares et sordidae*), the educational arts and the liberal arts. The former are the business of the craftsman; purely manual, they aim only at the material arrangement of existence; neither moral propriety nor concern for honesty inspire them to any degree" (Seneca, Letters to Lucilius, XI, 88, 21-22, CUF ed.).

The remarkable thing about craftsmanship is its resilience. This is particularly true in the fields in which MOSAIC is directly involved. Woodworking, jewellery and ceramics have survived the centuries by adapting to demand, evolving with the times and incorporating major technical and technological innovations at every stage in their history. One of the most important moments in these transformations was undoubtedly the advent of industrial society in the 19th century, which overturned and called into question a whole part of the craft and old production methods. The rise of the machine, as well as advances in chemistry and other fields, radically changed the perception of these crafts and influenced production and creation (Frayling, 2012). Throughout the 19th century, a vast debate shook the political, economic and artistic worlds on this issue. Two currents of thought emerged: on the one hand, the desire to return to craftsmanship and the development of the individual (the Arts and Craft movement, with W. Morris as its figurehead); on the other, the desire to reconcile art and industry, in other words the use of specific operating methods such as the machine and the division of labour. While these two currents may seem antagonistic and sometimes irreconcilable, things are not quite so simple and straightforward. The players oscillate between the two poles, and many discourses are contradictory to say the least, even ambiguous and paradoxical. What is clear, however, is that the craft model is gradually moving from the central model to the peripheral model of production, without losing its capacity for innovation or its attractiveness.

It was in the 20th century that more precise definitions of arts and crafts became necessary, both to define a finer economic and fiscal framework and to safeguard cultures and traditions that were sometimes under threat. With this in mind, UNESCO adopted the Convention for the Protection of the World Cultural and Natural Heritage (Gruber, 1972). Article 2 of this ground-breaking text stipulates that "intangible cultural heritage" means the practices, representations, expressions, knowledge and skills - as well as the instruments, objects, artefacts and cultural spaces associated therewith - that communities, groups and,

in some cases, individuals recognise as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus helping to promote respect for cultural diversity and human creativity: The "intangible cultural heritage", as defined in paragraph 1 above, manifests itself in particular in the following areas: (e) skills associated with traditional craftsmanship. With Sami craftsmanship in Finland and First Nations craftsmanship in Quebec, it is the question of a specific know-how, in tune with a specific culture, that arises. In Quebec, for example, in the First Nations community, the creative process is as much about finding the right material - skin, bark, stone - as it is about making it, integrating and accompanying these rituals with a genuine spiritual approach to ancestral skills.

However, we were also able to measure certain constants in the craft sector. First of all, there is great heterogeneity between the players in this field, in terms of company size, production destination and training, among other things. But also, and this must be emphasised, because of its strong roots in a given region, where it forges or accompanies its identity, through its network of contacts throughout the territory, and through its interaction with other sectors, whether economic or cultural, to the benefit of the tourism sector in particular. Finally, through the resilience we have highlighted, which makes these sectors of activity open to the major changes taking shape in the areas explored by MOSAIC - sustainability, inclusion, digital.

1.4. Fundamentals of environmental sustainability in arts and crafts education

Arts and crafts are fundamental practices that instil green principles in the process of education and skill acquisition. While many writings on crafts make important assumptions about the importance of skill in craft, it is still not clear whether they refer to skill as manual dexterity, practice experience, conceptual activity, generic knowhow or a combination of these. In this report we adopt an inclusive and wide-reaching definition of skills provided by the European Center for the Development of Vocational Training (Cedefop, 2011). According to Cedefop, skills are connected to performing tasks and solving problems. They represent the ability, proficiency or dexterity to carry out tasks that come from education, training, practice or experience. As such, it can enable the practical application of theoretical knowledge to particular tasks or situations. Therefore, skills refer to behaviours, attitudes and personal attributes that make individuals more effective in particular contexts such as education and training, employment and social engagement.

Green skills are the specific abilities that contribute to environmental sustainability, resource efficiency and social responsibility. In arts and crafts, green skills touch upon a variety of dimensions that go beyond a material approach. This includes: material use, eco-design/lifecycle thinking, sustainable production techniques as well as ethical/social responsibility and innovation. Some of these dimensions include:

1. **Sustainable Materials:** Green skills involve the ability to assess the environmental impact of arts and crafts materials. This includes understanding the lifespan of materials, considering resource extraction, manufacturing processes and end-of-life disposal. Green skills facilitate the selection of materials with lower environmental footprints, such as those that are renewable, recycled, or locally sourced.
2. **Eco-design:** Green skills encompass the application of eco-design principles and life-cycle thinking in the arts and crafts process. This means considering the entire lifecycle of a product, from its design and production to its use and disposal. Professionals with green skills can integrate sustainability considerations into their design decisions, aiming for energy efficiency, durability, reparability, and recyclability.
3. **Waste Reduction:** Green skills involve the ability to minimise waste generation and explore upcycling opportunities. Professionals with green skills can identify creative ways to repurpose materials, diverting them from landfill and contributing to a circular economy. They possess knowledge of waste reduction techniques and innovative methods to transform waste into products.
4. **Sustainable Production:** Green skills include proficiency in sustainable production techniques such as: energy-efficient manufacturing processes, reducing water usage, minimising carbon emissions and adopting environmentally friendly production. This means understanding how to integrate sustainability into production workflows.
5. **Ethical and Social Responsibility:** Green skills encompass an understanding of ethical and social considerations among which: fair-trade practices, social inclusiveness, cultural preservation, and labour rights. Professionals with these skills actively consider the social impact of their work and strive for responsible practices that prioritise the well-being of communities, workers, and consumers.
6. **Innovation:** Green skills require a mindset of innovation and resilience. Professionals with green skills are open to exploring new materials, techniques, and technologies that contribute to sustainability. They are proactive in staying updated with emerging trends and best practices related to environmental sustainability.

Notwithstanding the intrinsic capacity of arts and crafts practices to bring us closer to environmental matters, undergoing research shows that both green skills, as well as linking these to suitable training and learning solutions still represent major blind spots (Cedefop, 2021). The identified gaps have been accelerated by two factors: digitalisation and the COVID crisis. Digitalisation has opened up entirely new possibilities for the domains of eco- and responsible design, with 3D printing, Artificial Intelligence and Virtual Reality being among the core drivers re-shaping market dynamics and calling for new skills. It has also supported the sector to pass towards a more decentralised system, where production systems and new material innovations decrease the environmental impact of manufacturing. COVID on the other hand, has made us rethink practices and change the paradigms governing our lives. Not being able to travel made us turn inwards, look locally at what we have and what we can do with it. For arts and crafts this means a re-discovery of locality, expressed at various levels – both in terms of local sourcing or material as well as the use of indigenous craft knowledge, as well as of other ways of relating to nature, of creating and attributing meaning and conceiving life. Arts and crafts thus behold one of the widest spectrums of our relation to nature, starting with the planting/growing of the natural resources needed for production and reaching the final stages of distribution and sales.

Through COVID, a renewed focus on the importance of covering this spectrum has enforced the need for the development of green skills, as well as for transversal and cross-sectorial skills which are able to consolidate knowledge in this area.

1.5. The role of VET centers in fostering environmental education

VET institutions are a key place and play a key role in increasing environmental practices in arts and crafts though it remains a complex challenge. Indeed, VET centers need to constantly revise their existing arts and crafts curriculum to include dedicated modules or subjects on environmental education. This integration can focus among others on sustainable materials, waste reduction, recycling, eco-friendly techniques and further practices. However, the outreach of VET centres in terms of environmental practices goes beyond the revision of curricula. There is a wide range of initiatives and strategies which VET centers in arts and crafts can adopt to foster environmental thinking. Some examples include collaborations, events and professional development for teachers. These initiatives should be complemented by constant evaluation and feedback, collected from students, instructors, and the community to make improvements and measure their impact.

An organised form of reflection on green initiatives of VET centers has been provided by the 2023 GRETA report (Nielsen et al., 2023). The study builds on the UNESCO-UNEVOC guidelines that emphasize the importance of integrating green skills at all levels of VET centers. GRETA proposed a whole institutional approach for the greening of VET centers, composed of 5 dimensions - training, teachers, strategies, funding and stakeholders.

In this study we build on the findings of the GRETA report and conduct further research, to propose a holistic model for mapping environmental practices in VET education in arts and crafts. We argue the need to approach the entire ecosystem within which VET centers operate to better understand how environmental practices are developed. To provide a whole picture of the type, modes and strategies used to develop green practices, we need to systematically map the value that emerges through the interaction between VET centers and actors from diverse backgrounds. Our interpretation of value creation is based on the quadruple helix model (Carayannis & Campbell, 2009), a framework used within the knowledge economy to map the interactions between the four key sectors of society - government, civil society, education and industry - and thus measure how various entities generate value. When applying this model to our topic, we see that VET institutions are part of a broad legal, cultural, social and economic ecosystem in which there is constant interaction and exchange of information taking place with legal entities, craft/design companies, other educational centers and civil society. It is within this broad context that green practices emerge.

VET centers engage with governmental bodies mainly to influence policy making through recommendations on educational aspects. In exchange, they receive funding from the government to implement their education plans. Sometimes VET centers can collaborate with public bodies to organise joint dissemination or public interest events. Advisory boards

or public interest groups can be established to facilitate the communication between education ministries and VET institutions.

VET centers also engage with local communities and craft associations through providing lifelong learning opportunities. In exchange these entities amplify the work of VET centers through dissemination and promotion initiatives. Different working groups can arise from this interaction as more permanent establishments.

There is also an exchange between VET centers and crafts and design businesses. VET centers fuel the market with new professionals figures able to cover required roles in the industry. In exchange businesses provide internships and placements for students. Chambers of commerce provide market studies for VET centers, so that they can make informed decisions about their educational offer. In exchange, VET centers grant access to internal data on which these studies are built.

VET centers can also engage in projects with other education institutions (universities, research centers, schools) from which they benefit through innovating their own activities.

Graph 2 presents, in a non-exhaustive manner, the way in which VET centers generate value through their interaction with stakeholders from all 4 stakeholder groups.

This model of value creation highlights the complex way in which initiatives, including green ones, emerge within VET education. Let us take the example of organising a hackathon for the development of green solutions - hackathons are short format events where participants from different fields use quick prototyping to come up with a potential solution to a problem in just 2-3 days. Hackathons can be part of the VET centers' green strategy alongside other activities, but they can also involve stakeholders and tap into different funding sources (internal/external) to facilitate the event. A hackathon can be funded through crowdfunding but also receive public support or sponsorship from companies. It can be headed by an advisory group of experts coming from the organising VET center, academia and civil society. Its results can be disseminated through events organised in collaboration with regional bodies but also through dedicated design events. This supports the need to understand environmental practices through an ecosystem approach, rather than through a perspective where we consider VET centers in isolation from other network actors.

GRAPH 2

CIVIL SOCIETY

GOVERNMENT



1.6 The MOSAIC challenge: creating a fluid, context-specific approach to mapping environmental sustainability practices in VET

While the drafting of the MOSAIC project and its submission did not really pose any problems, the initial meetings and its actual deployment through the research-focused WP3 in June 2022 showed the complexities involved in concretely defining terms which, at first sight, seem almost self-evident. The disparity and heterogeneity of the partners - training centres, universities, companies, chambers of commerce and industry - combined with the diversity of the countries - Armenia, Belgium, Bulgaria, Canada, Finland, France, Italy - quickly led us not necessarily to propose a universal definition, but rather to look for the common denominator between our cultures, our histories and our perceptions.

With the MOSAIC project, we have been able to see the differences in approaches and conceptions of arts and crafts. Some countries maintain a purely productive vision, emphasising know-how, while others also imagine a way of being, which is certainly specific to the craft sector, but which goes well beyond the professional sphere. France, for example, has its own definition of the craft industry: "The craft industry comprises natural or legal persons who employ no more than 10 people and who carry out, as their main or secondary occupation, an independent professional activity involving production, processing, repair or the provision of craft-related services" (INSEE, 2019). It makes a distinction with arts and crafts: "Arts and crafts are manual trades. They call on traditional, highly technical and often exceptional skills" while establishing, within this specific framework, a precise list (evolving over the years) and divided into 16 fields (Ministry of Culture, 2015). In Finland, while the question of the hand, know-how and production is also visible, it is increasingly moving away from simple production to consider craft not only as a manufacturing process, but also as a method for learning in itself (Luutonen, 2008). In Italy, 11 specific criteria have been defined by researchers to establish a common language describing the work of craftspeople: "those directly related to the skill of the craftspeople (competence, creativity, interpretation, talent, training); those concerning relational and territorial aspects (territory, tradition); and those concerning the product itself (authenticity, craftsmanship, innovation, originality)" (Cavalli et al. 2017). The Conseil des métiers d'art du Québec, for its part, proposes "an artistic creation that is realised as much in the original work, unique or in multiple copies, destined for a utilitarian, decorative or expressive function and expressed through the exercise of a craft linked to the transformation of matter. The work of craftsmen on the built heritage, i.e. reproductions, restorations, reconstitutions and rehabilitations, as well as the stages of their work, which are distinguished by an original conception or a realisation respecting a tradition as well as by the quality of the realisation, are also recognized as "artcrafts" without there being however this institutionalisation of arts and crafts in France.

This context shows that mapping environmental sustainability practices in these sectors is a complex undertaking. The levers used to encourage these practices may involve very tangible processes such as the development of new educational methods and their inclusion in curricula or the creation of collaborative projects to stimulate environmental

practices. They may also include less tangible approaches that are reflected in the strategies and even mindsets of teachers and staff. To respond to this complexity, the approach developed as part of MOSAIC had to be flexible enough to allow the choice of mapping tools to be adapted to the different stages of the project. It also had to be sufficiently context-specific to capture the nuances defining the state of the art of arts and crafts education in each partner country. The ecosystem approach therefore represents the specificity and uniqueness of the MOSAIC project, guiding the structure of the project and the methodological development, which is discussed in more detail in the next chapter.

2. A practice-based approach for mapping environmental practices in VET

One of the aims of MOSAIC is to explore ways of mapping environmental education initiatives in the field of arts and crafts. The whole design of the project is based on a waterfall structure (Parnas & Clements, 1986), which means that each phase depends on the previous one. Starting with WP3, the latter demonstrates its importance and strategic position in the project as a whole. Its particularity is that it is based on a strong participatory nature. The structure of the project has been designed to meet the main objective of the project, which is to examine the arts and crafts sector through the lens of specialist businesses and vocational training centres, in order to respond more accurately to new emerging needs and societal changes. The conceptual framework of practice theory has enabled us to question the nature of companies and training centres, their processes of emergence and integration into an established organisational model. We are interested in theories from both management sciences and design sciences in order to consider practices in three fields: those of the company, those of creation and those of training.

2.1 Research methodology

WP 3 (Research) was organised around 5 themes: Sustainability, Digitisation, Social Inclusion, New Economic and Social Models and Research and Development. These were analysed using methodologies in the fields of human sciences, design and management/economics. The mixed methods approach is not limited to WP3, but continues to inform project activities beyond the scope of the research. For example, design thinking and human-centred approaches are deployed beyond WP3 to inform activities and enable a cohesive approach to linking project activities. Data collection facilitated by the mixed method was carried out in collaboration with MOSAIC partners. Carefully tailored guidelines were provided to ensure partners acted as informed researchers. Milestones and deadlines were set for structuring and monitoring results. The two academic institutions constantly monitored the data collection process and intervened with additional research and adjustments where necessary. This silo structure (designed to address the 5 themes) enabled a large amount of data to be collected, allowing for both quantitative and qualitative studies. Quantitative data collection tools included a questionnaire for companies, followed by focus groups in each country. Qualitative data collection included best practice mapping and desk research.

Documentary research or desk research is the process of collecting historical and contextual data on a specific subject. As part of MOSAIC, we collected over 250 documents on the legal, industrial and research contexts that affected the 5 themes in the project's partner countries.

A *questionnaire* is the tool used to collect structured responses from the target audience. As part of MOSAIC, we collected around 300 responses from companies on the skills gaps they perceive in relation to the project's five themes.

Focus groups are a form of group interview used to gather the informed opinion of target groups. As part of MOSAIC, we organised 6 focus groups (France, Italy, Canada, Armenia, Bulgaria, Finland) with representatives of arts and crafts companies to explore skill needs in relation to the 5 themes of the project.

Best practice refers to specific case studies representing models that are accepted/prescribed as being the most effective or correct. As part of MOSAIC, we collected examples of best practice from VET centres targeting the 5 themes of the project.

2.2. The theoretical framework

We felt that practice theory was best suited to discussing and understanding a practice through its characteristics: performance, dispersed practices (Schatzki, 1996), routine (Feldman & Orlikowski, 2011), consumption (Desjeux, 1998; Warde, 2005), convention, need, temporality. The notions of behaviour, norms and evaluation indicators presuppose the integration of peers and therefore evolution within a community, not in isolation. This is why the concept of the community of practice (Wenger, 1991) enables us to understand how interdependent knowledge processes evolve within a community, structured in particular by the domain: "All groups of people [...] learn how to do things better by regularly interacting together" (Wenger, 2004). Since creation is part of a vision of evolution, creative craftspeople would be, in this sense, a community open to "how to do things better" and therefore, by definition, a learning organisation (B. Borja de Mozota, 2002), with the distinctive feature of being flexible.

Practices result from change or from the interrelationship of several phenomena. We have adopted an approach based on different scales of observation (Desjeux, 1998), specific to management sciences, to situate actions (micro-scale) within a system (meso-scale) and within an ecosystem (macro-scale). The factors favouring the development of a practice are complex and non-linear. To understand this, we have drawn on the concept of practical meaning (Bourdieu, 1980) (actions / meanings / perpetuation / objective socio-economics conditions), where *habitus* (a structuring element that generates new practices) can respond immediately and without even thinking about it to the events they face. In his theory, the collision of different practices and their links are the main source of social change. The space for action and the possible meanings predisposes the field in which social life unfolds. The main links involved in a practice are via understanding, explicit rules and *teleoaffective structures* (Schatzki, 2002, p.89). For the latter two, we prefer Warde's proposal, where explicit rules become 'procedures' and teleoaffective structures become 'commitments'. Schatzki's theory of social practices distinguishes between two types of practice: dispersed practices (expressed understanding of practice) and integrative practices. The latter is a set of doing and saying linked (Schatzki, 2002, p.103) by the three main routes outlined above, presenting 'elaborate causal chains of action'. As integrative practices are causally connected and organised, processes like habituation, routine, practical consciousness, tacit knowledge, tradition and so forth". (Warde, 2005, p.140)

The analysis was therefore carried out using an ecosystem approach that links the macro-context (1. legal and research context) and the micro-context (3. VET centre initiatives and business needs in terms of green skills) through the meso-context (2. new

education models) in order to facilitate the interpretation of data that are highly contextualised and specific to each site:

1. Analysis of the literature search data provided legal documents, research articles/books and press releases that contextualise the emergence of environmental initiatives. The legal framework is important because VET centres and companies must comply with environmental legislation. The professional/industrial context also provides an overview of the main concepts used to talk about environmental issues in arts and crafts.
2. New educational models are shaping teaching strategies and therefore influencing the type of sustainability initiatives planned by educational bodies. These models respect existing policies and laws, but are also guided by the needs of businesses in terms of ecological skills. In so doing, they represent the connecting element between the macro- and micro-contexts.
3. At the other end of the scale are practical cases of environmental initiatives undertaken by VET centres and driven by companies through their specific needs for green skills. In MOSAIC, we have mapped these cases by examining the best practices that VET centres are implementing in this area and how these practices are being encouraged by the skill needs recorded by craft and design companies.

In conclusion, the cascade approach of the project facilitated a constant exchange of information between the different project activities. Similarly, the participatory nature of the data collection aimed to test working methods between researchers and non-researchers. While posing a number of challenges, this way of progressing through the project activities facilitated the construction of a solid foundation for the project, based on scientific findings, as well as the establishment of a comprehensive and multi-dimensional process for mapping approaches to environmental education in arts and crafts in the partner countries and at European level.

2.3 MOSAIC, a complex project

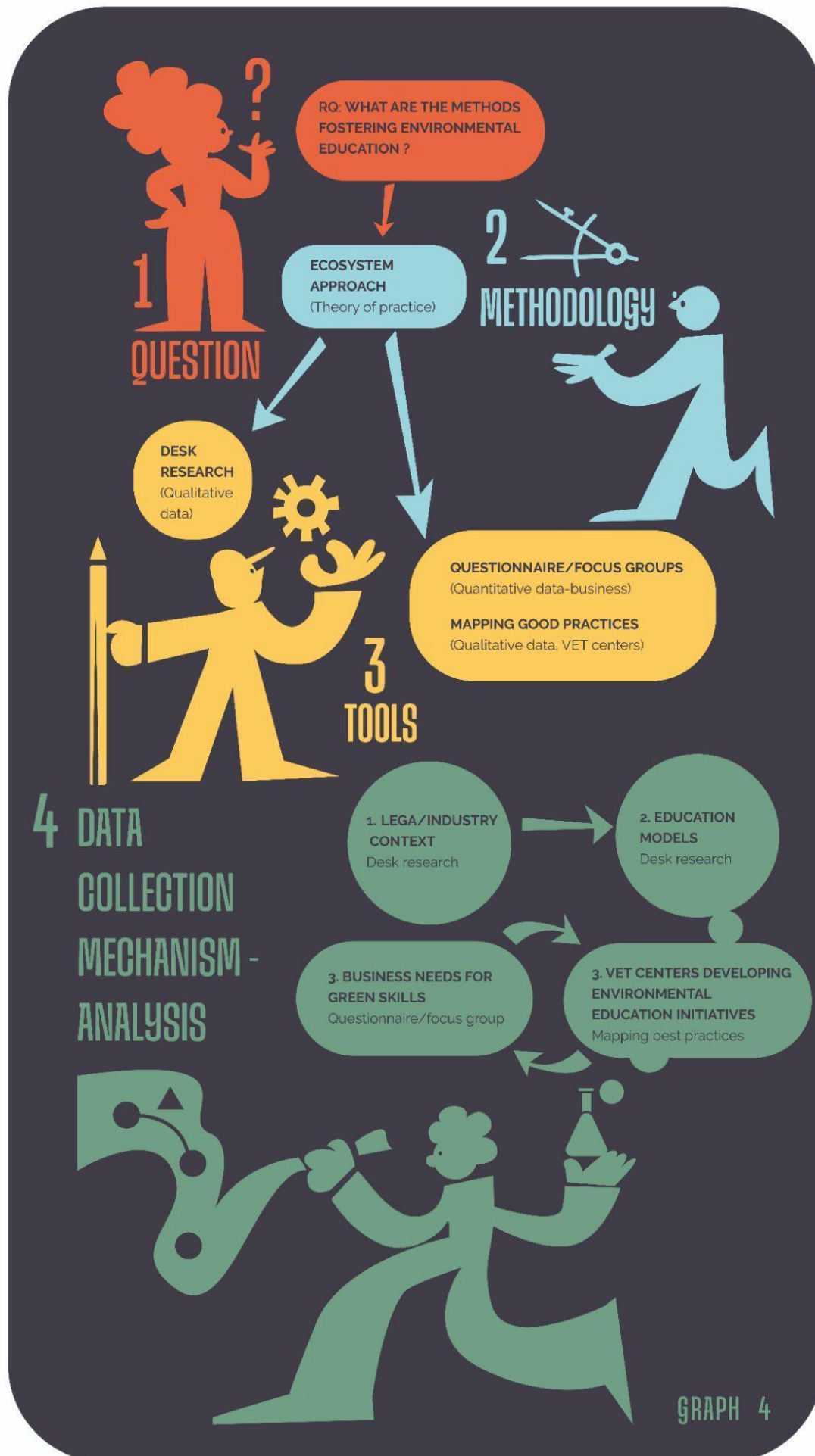
The MOSAIC project is ambitious and complex. The complexity of MOSAIC in the scientific field has several origins and responds to several criteria that we have tried to understand and analyse in order to respond to the different challenges in a relevant and concrete way. First and foremost, it seems necessary to emphasise that the term 'complex' does not have a negative connotation. Above all, it is seen as a powerful vector for reflection.

The complexity of MOSAIC can firstly be seen in the architecture of the project itself. By deciding to bring together seven countries - Armenia, Belgium, Bulgaria, Canada, Finland, France and Italy - and above all by anticipating a possible and relevant dialogue between very different partners: company directors, teachers, researchers, project managers, product designers, communication managers, technology advisors, craftsmen, designers and others, MOSAIC has built its foundation on the richness of exchanges and encounters. In WP3, which

was entirely devoted to research, this was reflected in the need to collaborate with all the players involved, both in collecting data in the field - desk research - and in creating measurement tools - the questionnaire - and in applying specific measures - focus groups - or even self-analysis of practices - Selfie for Teachers tool. Drawing on the philosophical work of Bruno Latour, and extrapolating it to our own questioning, we agreed that there would be neither bad manners nor inconsistencies in a few specific tasks - such as delegating desk research and good practice - but on the contrary a source of valuable insights into the antagonisms at work - subject of the study/actor of the study (Latour, 2012). First of all, we had to make an effort, individually and collectively, to find a common language. This required the various researchers at the two universities (UJM and LAB) to deploy specific methodologies adapted both to the project and to the people responsible for applying them. This required a major educational effort to get all the partners on board. The interest of this phase was, for the UJM and LAB researchers, to analyse all the methodologies used and to reshape them to make them understandable and employable by as many people as possible.

On a strictly scientific level, the same problems and questions have arisen. To work on such a subject, it is very difficult, if not impossible, to reduce ourselves to a single approach. We therefore decided to put together a multi-disciplinary team, bringing together history, semiology, aesthetics, design, management sciences, education sciences and marketing. This team was joined by a sound and image technician and statisticians for the collection and analysis phases. Finally, we also chose to bring together a senior researcher (tenured and post-doctoral), a doctoral student, a project engineer, a research engineer and a technician. The advantage of such a team, in addition to the specific skills of each individual, was that we were able to work together on the same object - subject - to create a common language while ensuring its relevance and feasibility. This language has the particularity of no longer belonging to a specific disciplinary field, but rather of aggregating the most relevant characteristics of each and bringing new ones to the fore. With the idea that "the meaning of a word or concept is not measured by the idea it induces, but by 'the totality of its conceivable practical effects'". (Tiercellin, 2011). While each term and item - sustainability, inclusion, digital, research and development, new economic models - required precise semantic work on our part to arrive at a common definition satisfactory to all the partners, we have to admit that the central issue of arts and crafts is still as difficult to grasp as ever. Without going back over what we have already written in this report, it is worth emphasising the complex relationship we have with artistic crafts. Talking about them is like entering a family. Craft has its own museums, its own critics, its own magazines, its own artists and its own particular vocabulary: "through their ideology, these approaches can form a metaphysics that constitutes practices [...]. What Bruno Latour calls *reproduction* and which is maintained by an effort of adaptation on the part of collectives, which reproduce certain practices by perpetually recreating them, giving the impression of universals or unchanging practices. They become like essences and therefore limits to practice. They sketch in hollows or categorical imperatives the boundaries between what is [...] and what is not". (Aucompte, 2022). What's more, these professions are at the crossroads of many

sectors and fields - aesthetic, economic, sociological, political among others - as we have emphasised in our research. They involve and superimpose a multitude of players, situations and concepts that intersect, interfere, combine and sometimes contradict each other. The projects and achievements cover a very broad field of application and are destined for multiple uses and destinations. This diversity is the richness of the arts and crafts, but it also blurs our perception of them.



3. Results

In this section we discuss the results obtained by applying the theory of practice to mapping environmentally sustainable practices. In doing so, we first explore the legal and professional framework that provides the context in which environmental practices emerge. We then interrogate the capacity of new education models to integrate environmental sustainability principles into arts and crafts education and therefore empower students to become environmentally conscious. Lastly, we analyse the best practices implemented by VET centers in the area of environmental sustainability to establish a classification model. We also discuss some relevant findings retrieved from the questionnaire and focus groups, which shed more light on industry needs in terms of green skills. These are important as they impact best practices through a bottom-up approach. In the final section we discuss how systematic analysis informed the creation of a framework that expands the ways of thinking about environmental practices in arts and crafts education.

3.1. Contextualising environmental education in arts and crafts

3.1.1. The legal framework

Environmental laws and regulations can impact environmental education in arts and crafts in different ways. Environmental regulations affect the materials and techniques used in arts and crafts. Safety standards require the use of protective equipment, ventilation systems, or other safety measures when working with specific materials or processes that students and teachers need to adhere to. Some jurisdictions have educational standards or curriculum guidelines that include environmental education and determine the content and objectives of lessons. Laws and government policies can also influence the availability of funding and support for environmental education initiatives in arts and crafts. By adhering to these laws, incorporating sustainable practices, and aligning with curriculum guidelines, educators can help students develop a greater understanding of environmental issues and foster a sense of environmental stewardship through artistic expression. It was therefore important to understand the general legal framework governing arts and crafts sectors in MOSAIC partner countries. To this aim, we asked MOSAIC partners to share with us the relevant legal frameworks in their countries and conducted further desk research to better map environmental legislation in the areas of education and arts and crafts.

The concepts of sustainability, environment, sustainable development and others are now commonly used both in everyday language and in different professional fields. However, it is not always easy to identify them. Their meaning, as well as the way they are applied or interpreted, can vary from one field to another, and from one sector to another. In the specific field of arts and crafts and the vocational training that goes with it, and in order to better understand the context of each of the MOSAIC partners, we felt it necessary to bring together the main legislative texts in order to give a quick overview of the laws that

frame, encourage, direct, drive, delimit or even encourage citizens and professionals alike. While not exhaustive, we have chosen to select the elements that we felt were, if not the most relevant, at least the most enlightening in terms of MOSAIC's stated concerns.

The first observation, since MOSAIC is above all an European project, is to emphasise that two main types of laws and decrees apply. On the one hand, there are the European texts, which govern all the member countries and define a common way of living, working and trading, among other things. On the other hand, national texts, sometimes more specific, linked to the particularities of the territories and their singular history. The first thing to note about these specific concepts - sustainability, environment, sustainable development - is that everyone at their own level - European, national - has taken on board the importance and urgency of legislating and taking action.

At European level, awareness of this issue is growing step by step, from the Single Act of 1986 to the Maastricht Treaty of 1992. The first major step was taken in 1997 with the Treaty of Amsterdam, which, based on the Brundtland Report (UN, Our Common Future, 1987), also used the expression "sustainable development". According to Article 2 of the Treaty of Amsterdam, which came into force on 1 May 1999, "The Community shall have as its task, by establishing a common market and an economic and monetary union and by implementing the common policies or actions referred to in Articles 3 and 3a, to promote throughout the Community a harmonious, balanced and sustainable development of economic activities, a high level of protection and improvement of the quality of the environment, the raising of the standard of living and quality of life [...]". In 2007, the Treaty of Lisbon added a more ambitious and necessary objective: combating climate change (art. 191 TFEU): "the promotion of measures at international level to deal with regional or worldwide environmental problems, in particular combating climate change". In 2010, the European Union created a Commissioner for Climate Action and a Directorate-General for Climate Action to complement the Office of the Environment Commissioner. While European policy is still based on Article 11 of the Treaty on the Functioning of the European Union: "Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development". As well as on articles 191 and 193, the climate law that came into force in 2021 proposes concrete objectives that respond to the urgency of the situation: "In its communication of 11 December 2019 entitled "The Green Deal for Europe "3, the Commission set out a new growth strategy which aims to transform the Union into a fair and prosperous society, with a modern, competitive and resource-efficient economy, where net greenhouse gas emissions will be zero by 2050 and economic growth will be decoupled from resource use. This strategy also aims to protect, preserve and consolidate the EU's natural heritage, as well as protecting the health and well-being of citizens against environmental risks and impacts. At the same time, this transition must be fair and inclusive, so that no one is left behind". (Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Act) - General approach, 17/12/2020).

Overall, the issue of sustainability as it relates to national laws is following more or less the same trajectory as at European level, i.e. the transition from a form of awareness of the environmental issue to a sense of urgency to take more concrete action. However, not

all countries necessarily make distinctions between industrial production as a whole and as specific sectors of activity such as the creative and cultural industries, on which craft industries depend. In France, for example, the laws governing the cultural and creative industries fall within the more general framework of those devolved to businesses. For example, the Law on the fight against waste [Law no. 2020-105 of 10 February 2020], adopted in 2020, stresses the importance of the transition to a circular economy and calls for a reduction in waste production. It encourages all businesses, including those in the creative sector, to implement sustainable practices, such as recycling, eco-design and the use of renewable materials. Finland, known for its strong commitment to environmental sustainability, has implemented several laws and policies that have a direct impact on the creative industries and craft professions. The Sustainable Development Act, enacted in 2005, defines the country's objectives and principles in terms of sustainable development. It emphasises the integration of sustainability considerations into all sectors, including education and culture. The Act guides the development of national strategies, programmes and action plans to promote sustainable practices and increase environmental awareness. Finland's comprehensive approach to sustainability extends to the creative industries, encouraging environmental responsibility and fostering a culture of sustainable creativity and craftsmanship. Bulgaria has implemented initiatives to promote sustainability and entrepreneurship in the creative industries. The Crafts Development Act, adopted in 2016, which aims to support and strengthen the development of traditional crafts and craft professions by providing financial assistance, training programmes and access to markets for craftspeople, in this way promotes growth and sustainability.

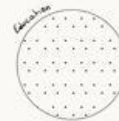
On this fundamental issue of "sustainability", education is one of the pillars of public policy at all levels. Laws fall into two clearly identifiable categories. On the one hand, those that could be described as "good practice" within the structures on issues of energy transition in particular, and on the other, those more directly affecting educational issues and the skills of learners and their teachers.

The Erasmus Plus programme, on which MOSAIC depends and which federates teaching and the circulation of knowledge and skills via students at European level, clearly emphasises this dimension: "In line with the European Union's priorities in making its economy sustainable, projects should be designed in an eco-friendly manner and should incorporate green practices in all facets. Organisations and participants involved should have an environmentally-friendly approach when designing their projects, which will encourage them to discuss and learn about environmental issues, make them think about what can be done at their level and help them come up with alternative greener ways of implementing their activities." (Erasmus plus programme guide, Version 3 (2023): of 04-04-2023). In the same way, all the countries in the MOSAIC project see education as one of the key levers in a global reflection on the concept. Armenia introduced the Law on Education in 2014 to ensure that the principles of sustainable development are integrated into the education system. This law emphasises the importance of environmental education, raising awareness of ecological issues and promoting responsible attitudes towards the environment among pupils. In addition, Armenia is preparing to introduce the universal inclusive education system by 1 August 2025, which will further strengthen the integration of sustainability principles into the education sector. Bulgaria has also implemented a series of laws and initiatives over the past decade to promote sustainability, social inclusion and

entrepreneurship. The Bulgarian Education Act plays a key role in this respect by implementing sustainable development and environmental education in schools. It encourages teachers to incorporate these subjects into their lessons, thereby promoting environmental awareness and a sense of responsibility among pupils. In France, Act no. 2021-1104 of 22 August 2021 on combating climate change and building resilience enshrines the fundamental role of education in sustainable development for everyone, from primary to secondary school. Article 5 makes education in the environment and sustainable development an essential mission. Far from being simply a theoretical apprenticeship, its aim is to provide a link with the policies at work. Education for the environment and sustainable development, to which all subjects contribute, enables pupils to understand the environmental, health, social and economic issues involved in the ecological transition and sustainable development. It is provided throughout school education, in a way that is adapted to each level and each specialisation, in order to develop pupils' scientific knowledge and skills to enable them to master these issues, particularly those relating to climate change, environmental health and the preservation of terrestrial and marine biodiversity, throughout the national territory, to master know-how and to prepare pupils to exercise their responsibilities as citizens. The Ministry of Education guarantees the content, the methods of putting this content into practice and the coherence of the deployment of environmental education and sustainable development in schools. (Article 5 law no. 2021-1104 of 22 August 2021). Italy has also taken significant steps to integrate the principles of sustainability into teaching programmes. The law on environmental education is a remarkable initiative that highlights the importance of sustainable practices and ecological awareness in the education system. By integrating these principles into the curriculum, Italy aims to cultivate a generation of artisans and creative professionals who prioritise sustainability in their work. Finally, in Canada, a notable initiative is the Federal Sustainable Development Strategy [2022-2026], which defines objectives related to education and culture. With this initiative, Canada recognises the important role of these sectors in promoting sustainable practices and encourages educational institutions and creative organisations to adopt environmentally-friendly practices. It also emphasises the need to reduce greenhouse gas emissions, promote energy efficiency and integrate sustainability principles into teaching programmes and creative projects.

LAWS & LEGISLATIONS ON SUSTAINABILITY

not
exhaustive list!



UNESCO COUNTRY PROGRAMMING DOCUMENT: THE REPUBLIC OF ARMENIA, 2014-2017

«Armenia prioritises environmental protection through enhanced control of conservation, renewal, reproduction and efficient use of natural resources, water management, waste disposal, the safe use of nuclear energy, prevention of environmental pollution, development of education, and the integration of education for sustainable development into the school curriculum. The Government's environmental programmes are also focused on maintaining the ecological balance of Lake Sevan as a major source of fresh water, restoring forests and protecting biodiversity»

ARMÉNIA

UNITED NATIONS SUSTAINABLE DEVELOPMENT COOPERATION FRAMEWORK FOR ARMENIA

«The Government of the Republic of Armenia (GoA) and the United Nations Country Team (UNCT) in Armenia are pleased to present the United Nations Sustainable Development Cooperation Framework (SDCF) for Armenia 2020-2025. The Cooperation Framework is the United Nations' central framework for planning and implementation of development activities at the country level. As such, it articulates the UN collective offer to support Armenia in achieving key Sustainable Development Goals (SDG) and national development priorities.»

ENERGY EFFICIENCY ACT, 2015, 2018

«An energy savings obligation scheme, as well as alternative measures, shall be set up in order to help reach the national energy efficiency target, which should ensure the achieving of a total cumulative target of energy savings in final consumption by the 31st day of December 2020.»

BULGARIA

ENVIRONMENTAL EDUCATION AND EDUCATION FOR SUSTAINABLE DEVELOPMENT IN PRIMARY SCHOOLS IN BULGARIA PROJECT

«The experience will educate them [the children] in new ethical norms, values and attitudes towards the protection of environment and finding ways for sustainable economic development in harmony with nature: alternative tourism, ecological agriculture, environment friendly production, etc.»

FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY

«Canadian efforts are also taking action to reduce emissions, including investing in green infrastructure and pursuing the creation of green shipping corridors.»

«Knowledge and education are also critical to increasing climate literacy and supporting climate action. Accordingly, climate change education is recognised as a priority in the Paris Agreement and the SDGs. Preliminary research by Environment and Climate Change Canada indicates Canadian knowledge and awareness of climate change, environmental and sustainability topics is increasing, as is the perception that individual actions have a positive impact on environmental change, and actions to help fight climate change, conserve nature and achieve a cleaner and safer environment are possible.»

«Canada's agriculture sector is adopting innovative technologies and practices, including reducing greenhouse gas emissions, storing carbon in soils, protecting water, and supporting wildlife habitat.»

CANADA

THE NATIONAL CORE CURRICULUM FOR BASIC EDUCATION

«The fundamental value is that every pupil is unique and has the right to high-quality education. Pupils are heard, valued and encouraged. They feel that their learning and wellbeing matter. Pupils are guided towards a sustainable way of life and understanding the importance of sustainable development. The knowledge and skills as well as values, attitudes and will that promote these run throughout the whole curriculum.»

FINLAND

BUSINESS FINLAND ON SUSTAINABILITY POLICY, 2023

«Business Finland's strategic goals in sustainability form the basis of mission development and content. The first two missions launched in 2021 are Zero Carbon Future and Digital Native Finland, both of which include various elements of sustainability. New missions are under preparation.»

LAW N.2021-11-04 OF AUGUST 22, 2021, ARTICLE 5

«Art. L. 121-8 - Education for the environment and sustainable development, to which all disciplines contribute, enables students to understand the environmental, health, social and economic challenges of ecological transition and sustainable development. It is provided throughout the school curriculum, in a manner adapted to each level and specialization, in order to develop children's scientific knowledge and skills to enable them to master these issues, in particular those relating to climate change, environmental health and the preservation of terrestrial and marine biodiversity, throughout the national territory, to master know-how and to prepare students to exercise their responsibilities as citizens.»

LAW N.2020-105 OF FEBRUARY 10, 2020 ON THE FIGHT AGAINST WASTE AND THE CIRCULAR ECONOMY

«In order to combat plastic pollution in the environment and reduce people's exposure to plastic particles, public policies set out the actions to be implemented to achieve the objectives mentioned in the present [1], taking into account health, environmental and economic issues. They encourage research and development, drawing wherever possible on local know-how, resources and raw materials, as well as healthy, sustainable, innovative and socially responsible substitutes or alternatives.»

FRANCE

LAW N.2015-982 OF AUGUST 17, 2015 ON ENERGY TRANSITION FOR GREEN GROWTH

«[Public policies] guarantee a regulatory and fiscal framework that makes France an attractive location for investment in energy-intensive industries, to avoid carbon leakage and enable sustainable growth.»

LAW 221 OF 28 DECEMBER 2015 ON ENVIRONMENTAL PROVISIONS TO PROMOTE GREEN ECONOMY MEASURES AND TO LIMIT EXCESSIVE USE OF NATURAL RESOURCES

«By decree of the Minister of the Environment and Land and Sea, in consultation with the Minister of Economic Development, the Minister of Economy and Finance, and the Minister of Agricultural Food and Forestry Policies, to be adapted within one year from the date of entry into force of this law, the National Action Plan on Sustainable Consumption and Production shall be issued, without new or greater burdens on public financial resources, which shall integrate the actions provided for in paragraph 1, having regard to interventions and actions in the areas of consumption, large-scale distribution, and tourism.»

ITALY

LAW N.92 OF AUGUST 20 2019

«Civic education contributes to forming citizens who are responsible and active citizens and to promote full and conscious in the civic, cultural and social life of communities, while respecting the rules, rights and duties. [...] Environmental education, eco-sustainable development and protection of the environmental heritage, identities, production and territorial and agro-food excellence»

GREEN DEAL, 2025

«The electrification of the economy and increased use of renewable energies should boost employment in these sectors. Improving the energy efficiency of buildings will create jobs in the construction sector, and demand for local labour will increase.»

BUT ALSO THE UNIQUE ACT, THE TREATY OF MACHICOT, THE TREATY OF MACHICOT, THE TREATY OF LIGON AND MORE...

EUROPE

RECOMMENDATION ON LEARNING FOR THE GREEN TRANSITION AND SUSTAINABLE DEVELOPMENT, JUNE 2022

«Systematically integrating the education and training dimension into other policies linked to the ecological transition and sustainable development from a lifelong learning perspective can strengthen the implementation of these policies. Such integration can also link different sectors of society and the economy, and effectively integrate sustainability into education and training.»

SHAPING THE FUTURE WE WANT: UN DECADE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT, FINAL REPORT, 2014

«Education is now being mainstreamed into environment and development agendas in a number of UN bodies and processes»

«By 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.»

UNESCO

UNESCO GUIDANCE FOR THE WORLD HERITAGE 'NO-GO' COMMITMENT

«Due to their environmental and social risks, the extractive industries (mining, oil and gas exploration and exploitation) pose a major threat to World Heritage, with almost a hundred sites affected by proposed or realised activities for mining, oil, gas, or quarrying, according to the State of Conservation information system.»

While environmental issues are not new, and are directly correlated with the industrial society that was gradually being established in the 19th century, William Morris, a key figure in design, was already denouncing 'waste' and the value of man's social, political and ecological environment in unambiguous terms: "And, again, that word art leads me to my last claim, which is that the material surroundings of my life should be pleasant, generous, and beautiful; that I know is a large claim, but this I will say about it, that if it cannot be satisfied, if every civilised community cannot provide such surroundings for all its members, I do not want the world to go on; it is a mere misery that man has ever existed." (Morris, 2015) - it will take time for these issues to become central to our public policies and our personal concerns. The turning point seems to have come at the dawn of the 1980s with a series of laws at both European and national level. We can see that these issues of sustainable development and resource management, for example, directly or indirectly raise questions of local purchasing and territorial development, among others, and are becoming major political and social issues. The debate is important and requires clear laws, even if they are not always followed by visible and immediate effects. The European Union and the various countries in the consortium are legislating on production itself, production methods, education systems and consumption. In the field of art and craft, the question is just as relevant, and also reveals complex issues such as the materials used, their transformation and their reuse. Julien Silvestre, Executive Director of the Conseil des métiers d'art du Québec, explains (Silvestre, 2023):

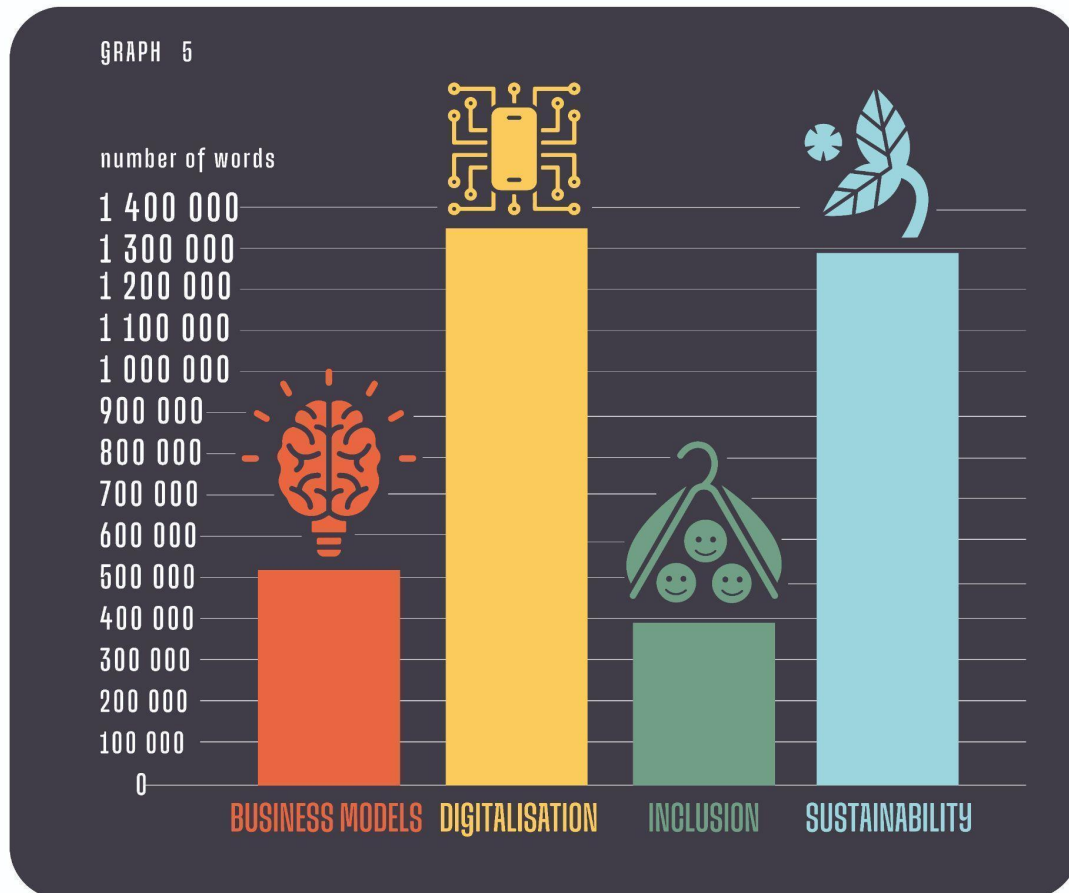
In 2019, we had a designer working at the Maison des métiers d'art de Québec. She was working with plastics, in other words, recycling waste. The question is, of course, whether we are still in the arts and crafts sector. Is this a new material? If you look at the whole process, it collects used plastic, treats it in a specific way and transforms it. Today, as we question sustainability, we are also confronted with practices that call into question our definitions and representations of the crafts".

This reflection underlines the complex realities of the enactment of law within countries. It draws attention mainly to two aspects: that environmental matters are inseparable from other sustainable development components, in specific from social and inclusive dimensions and that the everyday reality of the economy and industry play a fundamental role in supporting or challenging the adoption of sustainable practices.

3.1.2. The professional context

Prompted by the analysis of the legislative context, we looked at the professional context surrounding environmental sustainability in arts and crafts. To this purpose we collected, with the help of MOSAIC partners, over 250 documents representing research articles, books, press releases and media publications that address the topics analysed in MOSAIC countries. We used methods and tools from linguistics (e.g. lexicometry) and visual studies (e.g. image analysis) to analyse the themes and topics emerging in these documents. Lexicometry is the measurement of the frequency with which words appear in texts and enables us to evaluate the use of concepts related to environmental sustainability inside documents. Visual analysis is the interpretation of the visual content of images and enables us to assess the role of non-verbal methods to depict ideas around the topic of sustainability.

After a first evaluation we could retrieve a strong prevalence of documents in the topics of sustainability and digitalisation - documents on the topic of digitalisation count 1.4million words and those for sustainability 1.3million words - which signals the actuality and importance of these topics (Graph 5).



From a chronological perspective, the topic of sustainability gained a specific importance in 2022, when professionalisation and sustainability topics dominated the discourse. This happened as the use of the concept of eco-design started to lose ground over the use of other terms like eco-innovation and eco-responsibility.

When assessing more closely the language used to describe sustainability aspects, we note that there is no well-defined vocabulary distinguishing this domain from others (inclusion, business models etc), which means a more general language is used to describe concepts of sustainability (Graph 6). Another explanation for the generic use of vocabulary could be the impossibility to fully separate sustainability from social and economic aspects; it therefore evidences a general vocabulary that covers a broad range of sustainability aspects.

legislative and EU frameworks that are linked to environmental sustainability. It is interesting to note that sustainable development works as an umbrella term pointing to different dimensions, such as products, technologies, business, inclusiveness. Again, the notion of locality seems to be a more important factor here, than specialised forms of development driven by product tech and design. However, the concept of sustainable design is more frequently used compared to the idea of sustainable development, which once again enforces the material focus inside environmental matters. Sustainability is also linked to the idea of improved living conditions, an expression which often appears in European policy documents. Although this idea is used as a framework in public policy documents and has both social implications as well as ecological ones, it appears relatively rarely in the documents collected through MOSAIC. The same holds true for the idea of future generation, which is often deployed in EU or national frameworks, but is less important in analysed documents. Moreover, in the analysed texts, this expression tends to acquire a negative connotation, referring to the environmental challenges faced by future generations. This idea is often connected to sectorial (inside jewellery) and social aspects (referring to designers). Conversely, the notion of circular economy is a well-established concept, as also confirmed by our analysis. The European Commission defines the concept of circular economy as a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible, to extend their life cycle and thus contribute to waste reduction. In collected texts, the word circular also appears in relation to institutional aspects (business/company), denoting the need for business to adopt circularity. It is also much used in text referring to Canada, denoting a potential strong focus on circularity in this geographical area.

As the textual analysis shows, material sustainability aspects remain fundamental in arts, design and crafts, strengthened by publicly circulated and recognised concepts like circular economy which is strongly linked to waste reduction. However, other areas such as locality, production processes, innovation and responsibility are gaining ground, as shown by the analysis of the frequency of key concepts appearing in the texts between 2020 and 2022.

3.2 Linking contexts to practices: how new education models foster the emergence of environmental practices inside VET

In the current economic and job-related uncertainty, passing from a discipline-based education to a competence-based education (Lauwick, 2019) is seen as a potential step towards a lifelong education model. Vocational training, by definition, provides the hands-on approach that is necessary to achieve this vision. However, despite the launch of the recent European learning model (EU, 2023), which aims to harmonise educational systems, national differences still persist. Within these systems, local influences and trends determine the formation of new education models. For example, interdisciplinary approaches give rise to new ways of educating at the intersections of tech, arts and sciences. Digitalisation and movements (e.g. maker movement) drive models towards digital, project-based and collaborative approaches. Shifting market conditions such as increased competitiveness and innovation foreground the need for entrepreneurial skills and cross-cultural collaboration. Similarly, sustainability matters introduce sustainable design principles and practices in arts and crafts. For the purpose of this project, we define new education models in VET as systems that are influenced by specific trends and directions. On the one hand these are determined top-down: e.g. the implementation of environmental laws that calls for systems that are prepared to teach green skills. On the other hand, they are driven from the bottom-up: e.g. increasing levels of innovation. This double perspective (top-down and bottom-up) render new education models interesting to the purposes of exploring further how environmental education initiatives are shaped.

Through the MOSAIC desk research activities, we collected a few examples of new education models in crafts, as these have clear implications for the educational pilots being developed further on in the project (e.g. WP4 – Innovative educational modules and teaching methods). Because of the low number of documents, we had to find additional material from project partners. In particular, we sought documents describing the transition from individual and exclusive learning to collaborative, knowledge-creative learning. For example, we asked for topics from the institution or country of the project partners such as:

- Non-linear teaching
- Author-centred pedagogy
- Collaborative learning
- Case studies – business collaboration
- Incubators (entrepreneurship, etc.)
- Internships

An additional 25 documents were received following our requests. The documents were searched and received between April and May 2023 and examined and reported on between May and June 2023. The documents described topics in the partner organisations (about 2/3 of the papers) and elsewhere (about 1/3). The articles, writings and messages received from project partners were stored, read and then catalogued according to the MOSAIC project themes: sustainability, new business models, digitalisation, research and development, and social inclusion. The assigned topic corresponded to the area in which

the new education model is expected to have the most impact. Some of the material seemed to fall under more than one theme. In those cases, a central theme was selected, and the item was then grouped under this theme. For example, in Finland, social sustainability falls under the theme of overall sustainability, which has caused some positioning difficulties when rethinking the categories. In Finland, sustainability, in general, is divided into environmental, economic and social sustainability, including cultural sustainability. Several education and training models were searched for and found in the data. Some models were given names in the documents. The researchers gave names to others, based on the data, to facilitate cataloguing. The models have been created and implemented in the project partners' training courses and cooperation across Europe and elsewhere. Some models put a greater emphasis on local conditions than others. However, all found models were examined from the general perspective of the MOSAIC project.

The results for education models with implications for environmental sustainability are presented in Table 1. The first column of the table summarises the training models; the second column shows what can be considered positive for MOSAIC, and the third column what can be considered challenging for MOSAIC.

AREA OF IMPACT	NAME/DESCRIPTION OF THE MODEL	STRENGTHS	CHALLENGES
Sustainability	<p>The TUMO Studios - basic rules for designing products</p> <ul style="list-style-type: none"> reproducible, long-lasting, thorough down to the last detail, and environmentally friendly accessible and non-wasteful materials avoid being fashionable longlasting contribute to the preservation of the environment - conserving resources and minimizing pollution throughout its lifecycle <p>(TUMO Studios, 2023)</p>	<ul style="list-style-type: none"> basic rules environmental thinking <ul style="list-style-type: none"> resource wise conserving resources minimizing pollution long lasting lifecycle thinking 	<ul style="list-style-type: none"> how to make it attractive enough to comply feeling of limitations instead of possibilities or good challenges
Sustainability	<p>In dialogue with the environment: The environment, creativity, materials and making.</p> <ul style="list-style-type: none"> walks & craft reflective methods (for example dialogue between author and material) <p>(Mäkelä & Aktaş, 2022)</p>	<ul style="list-style-type: none"> making / doing centered material teaches new approaches, new thinking 	<p>documentation might be challenging and time consuming</p>

Table 1

We identified two models with core implications for environmental sustainability. One model relies more on principles of circular economy and product lifecycle and proposes approaches where material aspects of sustainability predominate. This is why it draws inspiration from industry developments rather than from actual educational theory. The other model draws on reflective methods in education that mixes environment, creativity, materials and making. These represent design-driven methods that combine artistic and philosophical approaches to re-think the relationship to materiality. Therefore, they foreground systems thinking approach that favours an eco-centric, instead of an egocentric perspective.

From an educational perspective, the results of the MOSAIC project highlighted the basic rules of design and environmental thinking. Educational models can be used to promote material-based practices such as saving resources and minimising pollution. The focus could be on creating long-term solutions through life cycle thinking. The results also

encourage a practical approach that promotes innovative perspectives and thinking through materials. However, challenges arise in how to make sustainability attractive enough. For some educational models, documentation can also be challenging and time-consuming.

3.3. A classification of sustainable best practices in arts and crafts

Best practices provide a good picture of the types, models and approaches used by VET centers in the area of environmental sustainability. There are different ways to define the concept of best practices, often referred to as good practices. No matter the definition used, there is a red thread connecting them all. The European Commission defined this red thread as those “strategies, approaches and/or activities that have been shown through research and evaluation to be effective, efficient, sustainable and/or transferable, and to reliably lead to a desired result” (European Commission, 2023). Put in simple terms, good practices are those things that really work on the field. For the purposes of this study, we adopt the definition of best practice provided by the EUROPEAN COMMISSION. We complement this definition with the 6 main characteristics of best practices identified in the CRAFTS CODE project (Crafts Code, 2022) (Graph 7)



In line with this definition, we collected MOSAIC VET partners' best practices in the area of environmental sustainability, by asking project partners to document and send us a description of their projects, initiatives and strategies that fall within this topic.

We collected all good practices relating to environmental sustainability, including those that are not directly connected to teaching, as these can very often encourage more subtle forms of educating towards sustainability. We then analysed and grouped these into categories. The result is a classification for best practices in environmental education in arts and crafts.

CLASSIFICATION OF BEST PRACTICES

1. Infrastructures/logistics

We found several initiatives conducted by VET centers in this area. These ensure environmental compliance but also define practices that encourage environmental behaviour. Although these initiatives are not directly linked to teaching activities, we argue they play an important role in promoting an environmental mindset among staff and students. These can be either structural or logistic works or part of softer approaches.

For example, VET centers ensure that their buildings respect environmental norms and comply with national/European legislation.

Case study: sustainable buildings (ITALY)

*CMA ARA's **eco-friendly building**, opened in 2018, features solar panels that have generated significant electricity, LED light bulbs, rainwater flushing mechanisms for toilets, and a partnership for recycling cigarette butts. Employees are provided with thermos bottles to reduce plastic bottle waste. CMA ARA aims to reduce energy consumption by 40% by 2030.*

Other VET centers close partnerships to manage green practices such as recycling etc. A good example is TUMO Studio's partnership for waste management.

Case study: collaboration with local service providers (ARMENIA)

***TUMO STUDIOS** partners with a local recyclable waste management company, Innovative Solutions for Sustainable Development of Communities (ISSD). ISSD collects recyclable waste from facilities every other week and also provides materials for upcycling projects.*

Another example is CMA ARA's activities in terms of recycling and composting. These include a close monitoring system for measuring environmental impact as well as providing inclusive opportunities for workers/collaborators.

Case study: collaboration with local service providers (FRANCE)

*CMA ARA has formed **partnerships with specialized recycling and composting companies**. These regularly collect and sort various materials including paper, plastic bottles, cans, paper cups, glass, ink cartridges, and batteries. They also provide boxes for collecting food waste and create compost. The environmental impact of these partnerships is recorded, with monthly savings including water, petroleum, energy, CO2 emissions, trees, and work opportunities for disabled individuals.*

Lastly, more complex initiatives that aim to shift mentalities towards more environmental practices combine a series of interventions. This is the case of the collaborative project between ART-ER and Unioncamere Emilia-Romagna.

Case study: complex initiatives to foster a green mentality (ITALY)

ART-ER, in **collaboration** with Unioncamere Emilia-Romagna, is **implementing the Mobility Manager and Sustainable ART-ER Project**. The goal is to reduce private vehicle usage, inform workers about sustainable mobility, and create a culture of sustainable transportation. A **Mobility Management Agreement** has been established between ART-ER and the Municipality of Bologna, aiming to promote innovative and alternative modes of transportation, reduce traffic congestion, and decrease air pollution. The initiative includes working groups, workshops, and the introduction of minimal environmental criteria. ART-ER has installed **water distribution points** with meters to monitor emissions avoided by reducing the use of plastic bottles.

2. Internal policies and strategies

Internal measures to ensure that an environmentally sustainable vision is built into the company culture are fundamental for the long-term strategy of VET centers. A good example is the internal policy document adopted by CEGEP in Canada.

Case study: internal policy documents (CANADA)

CEGEP's "**Policy on Sustainable Development and Education for a Sustainable Future**" is an accessible document that outlines an institution's sustainable development policy. It covers principles, scope, roles, and responsibilities related to training, awareness, and management. The document addresses various sub-topics including purchasing guidelines, energy management, transportation management, air quality, water management, waste management, hazardous materials management, and land management. It also highlights the annual assessment and evaluation of sustainability goals. Additionally, the document provides a list of committees within the college community that are involved in promoting a sustainable future.

Broader sustainability strategies include more complex documents covering multiple lines of activity (including teaching), as shown by Omnia's sustainability strategy plan.

Case study: internal strategies (FINLAND)

OMNIA developed a **comprehensive sustainability strategy plan** covering social, cultural, environmental and economic aspects. They aim to equip learners with sustainability skills and meet the criteria of environmental schemes such as ECOCOMPASS and the Finnish National Certificate for Sustainable Development of Educational Institutions (OKKA).

3. Education resources and practices

Education practices are the core instruments for embedding environmental measures inside VET centers. These take different forms.

VET centers can develop resource materials, such as handouts, brochures, or online guides, specifically tailored to the integration of environmental education in arts and crafts. These materials can provide information on sustainable materials, techniques, and tips for reducing environmental impact.

VET centers can organize practical demonstrations and workshops that showcase eco-friendly art and craft techniques. This can involve using recycled materials, natural dyes, sustainable practices, and upcycling methods. Demonstrations can be conducted by instructors, visiting artists, or environmental experts.

VET centers can invite experts or guest speakers, environmentalists, or artists who specialize in eco-friendly arts and crafts to give talks or workshops at the VET centers. These experts can share their experiences, knowledge, and practical tips on incorporating sustainability into artistic practices.

VET centers can also decide to provide professional development opportunities for instructors at VET centers, including workshops, training sessions, or courses focused on environmental education. Equipping instructors with knowledge and skills will enable them to effectively incorporate environmental principles into their teaching.

One best practice collected from MOSAIC partners fell in this category. It provides a good example of the different measures taken to embed environmental thinking within teaching.

Case study: embedding environmental behaviour in teaching (Armenia)

TUMO STUDIOS minimize waste & promote sustainable practices in design and production.

Sustainable design teaching: *integrating sustainable design principles into the education program, influencing students' everyday activities, projects, and the shop where their creations are sold.*

Waste reduction in various areas: *focusing on reducing waste during the development phase in areas such as fashion, jewellery, ceramics, printing, and prototyping.*

Recycling: *Recycling bins are available for plastics and papers to encourage waste reduction and proper disposal.*

4. Collaborations & partnerships

VET centers can establish partnerships with environmental organizations, NGOs, or local sustainability initiatives. These collaborations can be targeted at providing expertise, resources, and support in developing educational or non-educational programs that highlight the intersection of arts and crafts with environmental conservation.

A good example of an educational outcome is Artigianelli's collaboration with a local kindergarten, which fosters new ways of making students engage with topics of sustainability.

Case study: promoting upcycling (ITALY)

*The Artigianelli VET center in Fermo has implemented the **Creare project** which promotes **upcycling**. Students in the shoemaking course collaborated with children from a local kindergarten. The children provided drawings and old fabric, which the students used to design bags.*

VET centers can also become part of non-educational initiatives fueled by circular economy principles, as in the case of Confartigianato Emilia-Romagna.

Case study: collaboration in circular economy initiatives (ITALY)

*Confartigianato Emilia-Romagna and Gruppo Hera have collaborated on **a circular economy initiative**. The project involves collecting used vegetable oils from Confartigianato members and transforming them into biofuel through an agreement with Eni. The process is certified and generates significantly lower greenhouse gas emissions compared to diesel production from fossil sources. The collaboration aligns with the EU's circular economy agenda.*

5. Research & innovation initiatives/projects

Research and innovation projects use an interdisciplinary lever to bridge between arts and crafts and other disciplines, such as environmental sciences or design. A good example is OMNIA's project that valorises waste in a creative way.

Case study: Design-driven innovation projects (FINLAND)

*Omnia worked with a wood business for **furniture manufacturing**, to use sawdust and scraps in a sustainable way. This includes, for example, sharing scraps as firewood, turning sawdust into briquettes for heating, making new small products such as kitchen utensils, automated production of products at night and donating larger waste wood panels to a partner school.*

These projects can foster innovation, creativity, and a holistic approach to addressing environmental challenges. Because they represent a complex form of collaboration, such projects can have a spillover effect on the institution as well as on the broader economy, as shown by the example in Finland.

Case study: Design-driven innovation projects (FINLAND)

*Bioscale is a pilot project to measure food waste implemented by **Omnia**. It helps service managers and professionals by increasing customer awareness of their food consumption. Food waste from customers accounts for 19% of all kitchen waste. Bioscale is part of Omnia's sustainability plan.*

6. Ambassadors/community engagement

VET centres can promote engagement with local communities by organizing initiatives that address local environmental concerns. In this context they can appoint ambassadors who reach the broader local community, as shown by the case of ecology ambassadors appointed by CMA ARA.

Case study: ambassadors (ITALY)

*To reduce energy consumption, CMA ARA has implemented an **environmental impact strategy**. They have appointed **Ecology Ambassadors** responsible for implementing the strategy locally and ensuring compliance. A **smart system** regulates temperature settings, and employees are recommended to turn off lights, unplug devices, and prioritise shared cars or public transport for commuting.*

7. Events

VET centers can organise art exhibitions or competitions that focus on environmental themes. This can encourage students to create artworks that promote sustainability and raise awareness about environmental issues. They can also become part of more complex forms of events like conferences and seminars that deal with topics of environmental sustainability and are targeted at the local network of businesses.

Case study: circular economy events- conference (BULGARIA)

"Green Transition and Circular Economy - Opportunities for Financing and Good Practices." The event aligns with the priorities of the European Union's Green Deal, Just Transition, and Recovery and Resilience Mechanism. Specifically, it aims to inform attendees about Investment 2: Program for Economic Transformation, Fund 2 - "Green Transition and Circular Economy" under the National Recovery and Resilience Plan - Innovative Bulgaria. The main objective of this investment program is to support enterprises in transitioning to a circular economy. This involves implementing circular models of production and consumption, environmental standardisation, and promoting recycling, waste reuse, repair, and the use of bio-based products. The conference showcases projects and activities that will receive funding, such as waste processing technologies, reduction of plastic packaging and single-use products, adoption of reusable and alternative materials, utilisation of natural and renewable resources, and enhancing end-user awareness through labelling with key characteristics. Overall, the conference seeks to foster knowledge exchange and facilitate financing

opportunities in the realm of green transition and circular economy, aligning with the EU's sustainability goals.

Inside the VET ecosystem there are a variety of best practices that experiment with different approaches to environmental sustainability. These include integrating sustainable design principles into the education program, focusing on waste reduction in areas such as fashion, jewellery, ceramics, printing, and prototyping, and collaborating with a local recyclable waste management company. These include also the organisation of conferences aligned with the EU's Green Deal to support the transition to a circular economy. Furthermore, comprehensive sustainability strategy plans, partnerships with recycling and composting companies, and environmental impact strategies to reduce energy consumption are part of the wider range of practices. Stakeholders engage in circular economy initiatives, upcycling projects, and promote sustainable mobility. The initiatives also include innovative measures to reduce waste food and utilise sawdust and offcuts in furniture making. Their eco-friendly building features solar panels, LED lights, rainwater flushing, and recycling initiatives.

One common aspect to all mapped case studies is the wide range of stakeholders involved. Education and research institutes, kindergartens, businesses, NGOs and public entities, but also experts and entrepreneurs are part of the initiatives proposed under each of the described categories. This indicates the existence of a specific value creation model for environmental practices. We can construct this model by reworking the quadruple helix proposed in section 1.2 of this report to make it more specific for our topic (Graph 8).

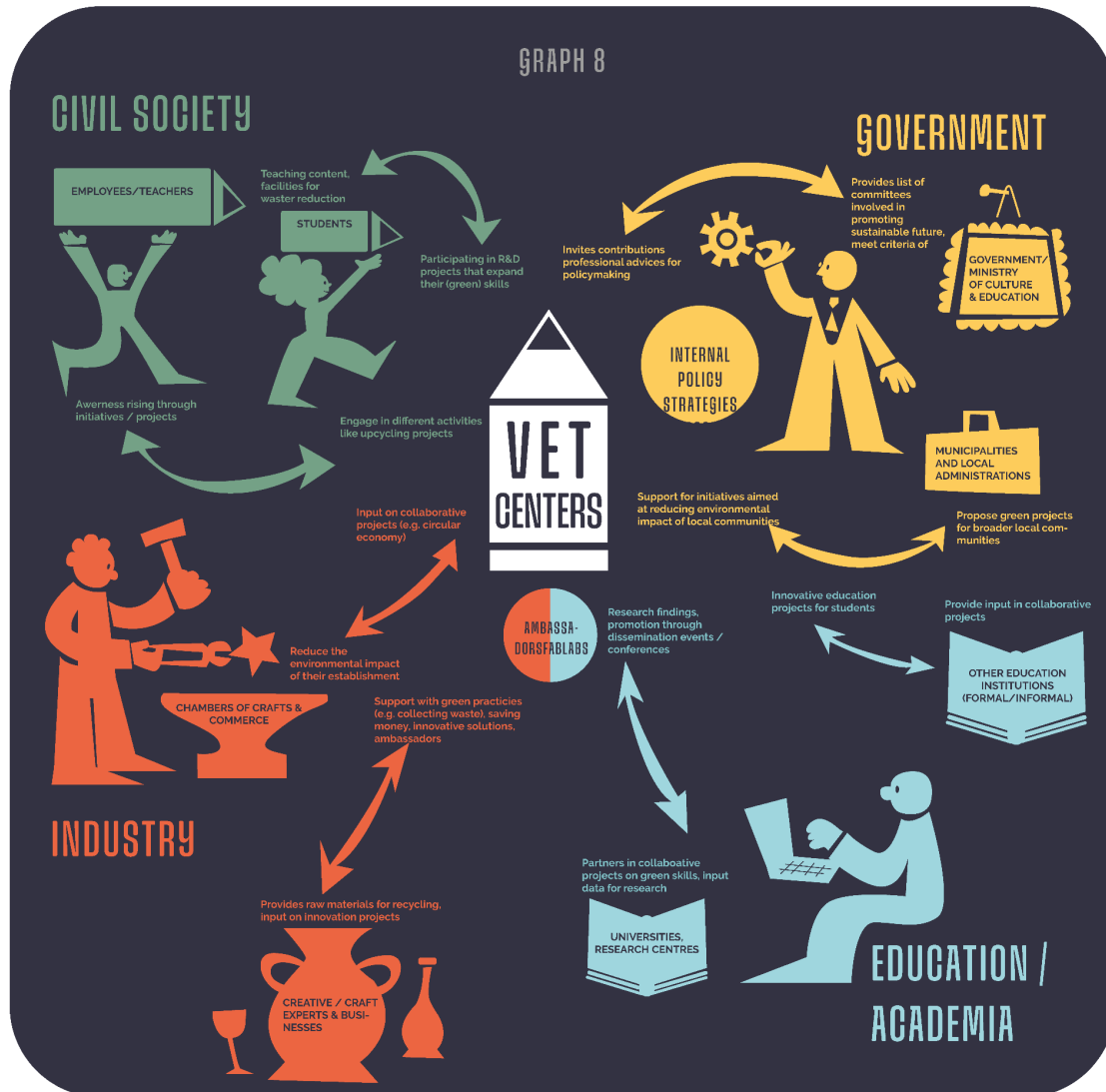
In terms of environmental best practices VET centers engage with a variety of civil society members such as students, local communities but also VET employees to conduct projects and implement initiatives that raise awareness about environmental issues and propose new solutions tackling climate challenges. VET centers can also create tailored teaching content for students on the topic of sustainability; in exchange, students participate in innovation projects that expand their green skills.

In terms of the relationship to public authorities, VET centers collaborate with local administrations to propose green projects for local communities or provide specific input (lists of experts, criteria for meeting environmental schemes etc.) that can influence policy making. These offer in exchange support with projects with a broader community scope.

VET centers also have a close relation with chambers of crafts to which they provide collaborative partnerships on specific projects. VET centers benefit in exchange from the solutions emerging from these joint projects. A similar relationship on innovative projects is established with crafts businesses (sometimes also jointly with chambers of crafts). On the other hand, businesses specialised in environmental matters are very important partners for VET centers. They roll out specific projects lowering the environmental impact of VET establishments.

Last but not least, the relation with education and academic structures is also important. Joint projects with higher education bodies fall within this area and revolve mainly around aspects of green skills and further mapping of environmental practices. VET

centers can improve their activities through the findings emerging from these projects. Other institutions such as kindergartens or schools are also partnering with VET centers to implement innovation projects through which VET students can build transversal and entrepreneurial skills.



Among these four groups of stakeholders, we further investigated the industry context, to better assess how businesses fuel these practices, for example through the demand for green skills. This latter aspect was addressed in MOSAIC using two approaches: a questionnaire that collected 300 responses from crafts businesses in relation to perceived skill needs; six focus groups organised in MOSAIC partner countries and involving local crafts and design businesses aiming to further deepen among others the perception of sustainability.

The core findings show that while all crafts and design sub-sectors (jewellery, wood, traditional crafts) recognise the importance of the topic of sustainability, they do it in different ways. This is because each country is at a different level of adoption, as well as dealing with a distinct context and mentality. For example, businesses in countries like

Bulgaria and Armenia bring to the table a wider dimension of sustainability linked to aspects of inclusion. They also acknowledge the fundamental role that education and locality have in fostering green practices (this appears as a common topic across multiple countries). However, they also show concerns about sustainability becoming only a trend and the danger of greenwashing. In countries like Finland sustainability is not new and therefore needs a revival. In contrast, in Italy sustainability is a topic of actuality that can be tackled through certification and education. However, alignment to sustainability requirements is hampered by the economic challenges that businesses need to deal with, in particular in the areas of marketing and administration. This is also reflected in the answers of the questionnaire, where the importance of green skills for businesses differs: for example, it plays a lower role in areas of businesses like marketing and sales, which could reflect the fact that the more 'intangible' nature of sustainability is not well acknowledged, while the more tangible one (production/design) is highly addressed. There are differences between the way in which different MOSAIC countries rate the importance of green skills. For example, in Canada, and Italy to a lesser degree, businesses tend to assign a lower importance to environmental sustainability inside design/planning departments, compared to other countries; a similar situation seems to be repeating for production/manufacturing. On the other hand, in Finland and France, businesses assign the most importance to sustainability skills inside administrative departments. Again, Canadian and French companies appear more distant from topics of sustainability. Although these acknowledge the need to align to green regulations, they do not seem ready to accommodate the necessary changes. The only positive outlook refers to new generations shifting this vision.

While the views reflected in the questionnaire and focus groups only offer a window upon reality, they shed light on how the demand for green skills influence the way in which VET centers adapt their practices to educate about sustainability. For example, in countries like Armenia and Bulgaria, VET centers can adopt an education strategy of sustainability that is wider and more inclusive. In countries like Canada and France on the other hand, we could see collaborative initiatives between the industry and VET, to tackle financial stability in the context of the adoption of green practices.

Before concluding the analysis, we need to stress the importance of images included in the best practice documentation provided by partners. Images are powerful tools for meaning-making and therefore relevant when analysing how the topic of sustainability is represented beyond words. As a result, these images are reflective of the way in which MOSAIC partners use imagery to present and represent specific ideas around sustainability.

Analysed images are significant for the context they represent and their illustrative role. Some documents contained very few images (e.g. 2-5) and others many (e.g. 48). Most of the images do not accomplish an aesthetic function, but rather a functional one. This is why the majority of images have been most probably produced by institutions themselves and only a minority represent stock images (generic images). The ideas reflected by these images are varied and broad, reflecting the analysis of concepts which also cover multiple ideas. These images often speak about recycled materials and products, pollution but also about collaborative and creation work and processes (e.g. students working together).

3.4. A tailored framework for mapping environmental practices in vocational education in arts and crafts

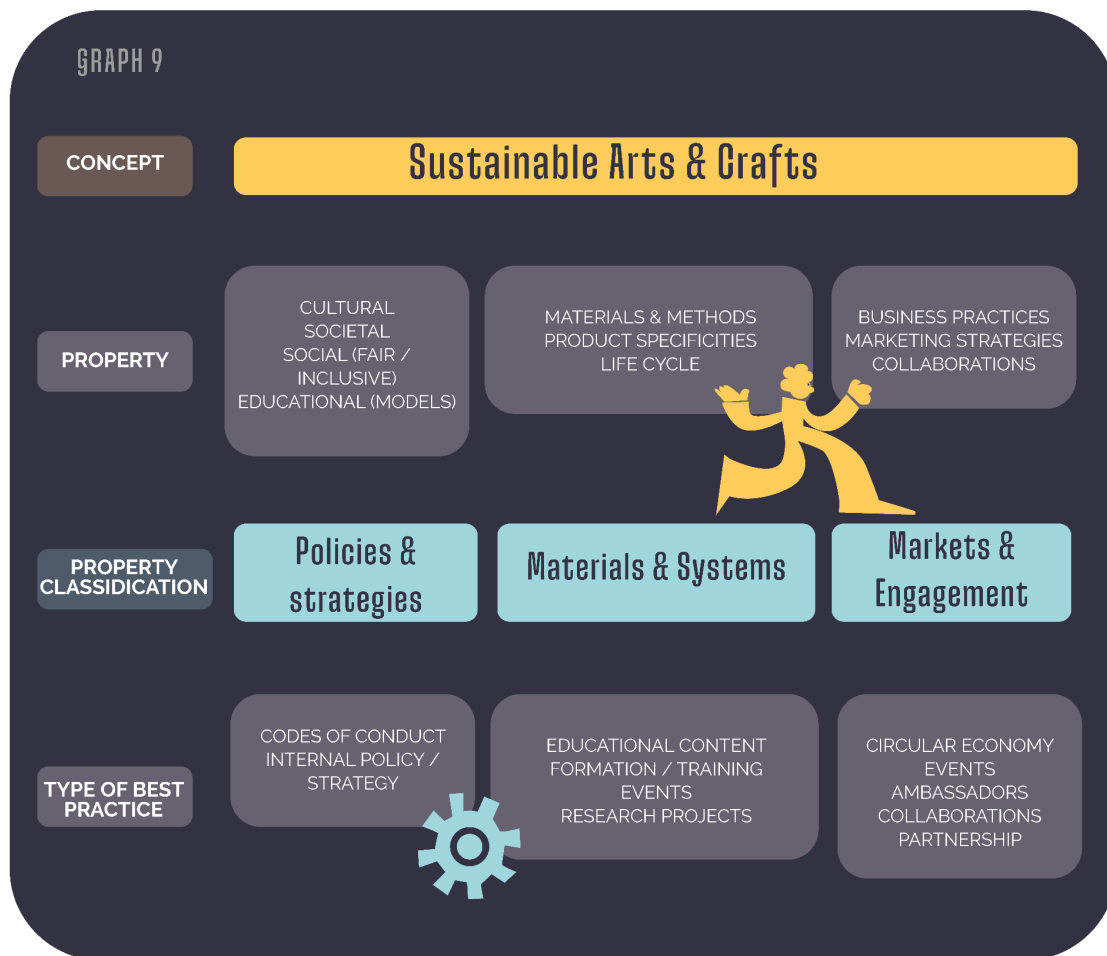
Findings show that environmental practices in VET education take a variety of forms, involve different stakeholders and are determined from the top-down (e.g. legal frameworks, new education models) as well as from the bottom-up (e.g. professional/business needs). To navigate this complex domain, we need frameworks and models for a systematic mapping of these practices in arts and crafts. Models should build on the very characteristics of sustainable crafts as founding elements for the emergence of best practices.

To this purpose, our analysis has evidenced a series of characteristics of sustainable arts and crafts practices. First of all, sustainable arts and crafts are framed by two legal directions (section 3.1.1): one that requires the alignment to green standards (e.g. buildings), and the other, pedagogical one, that influences green strategies (section 3.2). Together, they define a first set of characteristics that fall within the topic of policies and strategies.

A second category of characteristics is given by the contextual analysis (section 3.1.2). Findings show that while material aspects of sustainability remain at the core of sustainable crafts, aspects of locality, production processes, innovation and responsibility emerge as points of interest. This reflects a vision of materiality that acknowledges the multitude of links that craft practice establishes to the environment (i.e. systemic approach). The educational models discussed in section 3.2. also point in this direction.

A third category of characteristics is determined by the market and the need to find solutions that can reconcile green matters with financial robustness. In fact, most arts and craft businesses are small and thus have a hard time balancing the care for the environment with the financial robustness of their affairs. Marketing strategies, collaborations and other practices can offer levers for finding new pathways towards sustainability.

These characteristics define structured ways to think about the nature and form of best practices that emerge in the area of environmental sustainability in arts and crafts (Graph 9). Different examples of these practices were provided in section 3.3.



Inside policies and strategies, we can find for example internal codes of conduct, policy and strategy documents that VET centers as well as businesses can establish to define their long-term vision for green practices. Materials and systems include the development of education content (e.g. green training), further formation of teachers on aspects of sustainability, as well as the organisation of events and research projects dealing with green matters. Market and engagement on the other hand can include best practices such as the organisation of circular economy events, working collaboratively and closing partnerships for aligning to green regulations or the designation of ambassadors for promoting an environmentally sustainable vision. This way of organising green initiatives provides a systematic and organised manner for mapping best practices.

4. Conclusion

The development of environmental best practices in vocational training is likely to evolve in the future due to growing global awareness of environmental issues and the need for sustainable practices in various industries. The arts and crafts sectors, through their heterogeneous structure - predominated by micro and small businesses - and the intangible value assigned to products - deriving from the intersection of tradition with culture and innovation - foster specific conditions within which environmental education practices develop.

The aim of this study was to better understand how a systematic mapping of environmental practices inside arts and crafts vocational education can expand our thinking around sustainability. In doing so, we drew on the research conducted in the MOSAIC project, involving more than 15 partners from 7 countries, each possessing a different understanding and application of environmental sustainability inside vocational arts and crafts education. The contextualisation was fundamental within the MOSAIC research, as it enabled us not only to list the variety of strategies, methods, initiatives and projects rolled out as examples of sustainable best practices, but first and foremost to understand on which characteristics of environmental sustainability they build. The three identified groups of characteristics emerged through our research surrounding the legal context, the professional context and the pedagogical directions inside which environmental approaches circulate. These characteristics enabled us to establish categories for mapping best practices, based on their reflected understanding of environmental sustainability. The resulting framework can be used as a tool for the systematic mapping of environmental best practices in vocational arts and crafts education.

The findings of the MOSAIC research show that green laws and legislation are expected to continue to have a strong impact on shaping stronger environmental practices and VET education will have to keep up the pace and align with these. The industry is also expected to continue to stimulate the creation of new and innovative ways to tackle environmental matters and VET centers will have to consider increasingly complex ways of addressing environmental approaches in their activity. As these two forces continue to drive the development of environmental vocational education in arts and crafts, we are expected to see shifting best practices that can accommodate new visions. This leads to an expanded conceptualisation of environmental sustainability, in which cultural, social and economic factors intersect. Put more simply, creating informative content on environmental matters is not sufficient anymore, but needs to be expanded into other, more complex and systemic forms of conceptualising sustainability, that often call for engagement with a variety of stakeholders, also from outside the industry. As a result, we are already perceiving the gradual shift from what are considered to be traditional practices in education and more interdisciplinary and complex ones. These findings point to the following potential directions in which green best practices are expected to evolve in the future:

- a better and more complex integration of the environmental curriculum, where innovative pedagogical approaches (e.g. systems thinking) to developing educational courses and modules are tested.

- industry-training with a focus on sustainable techniques that is better integrated with evolving needs of professional life contexts
- green skills development that goes beyond materialistic determinism
- practical/hands-on training in sustainable techniques (also from outside the arts & crafts sector).
- closer collaboration with industry partners to make sure that environmental practices align with industry standards and needs
- multi- and transdisciplinary collaborations leading to the emergence of green solutions or to developing green approaches that are more inclusive
- the integration of new technologies into environmental training
- more flexible and tailored lifelong learning opportunities that enable workers to stay up to date with emerging environmental practices and technologies throughout their careers.
- new forms of recognitions and certifications that stimulate environmental engagement instead of promoting it as a burden

While these directions offer an outlook for the future development of best practices, they also raise important questions about how these can be best built into vocational learning. How effective are formal approaches compared to informal ones, when establishing this type of initiatives and best practices? To which new understandings and use of the concept of environmental sustainability do these new approaches lead?

This report has provided some insights into these important questions. It has shown for example that legislation operates on multiple societal dimensions. It has also shown that material aspects of sustainability involving practices of recycling, eco-design and repurposing are being complemented by an ecosystem way of thinking, where both tangible and intangible aspects of environmental sustainability come into play. Findings draw attention to how ideas of responsible design, eco-innovation and research interventions are sustaining a long-term vision of sustainability. However, some questions require further investigation, especially those revolving around the interaction between formal and informal approaches within VET education, and the way in which this increases the experimental nature of implemented green practices. With the rising complexity of managing a just and regenerative economy that brings together multiple aspects to solve complex societal issues, we need to think more about green best practices and strategies as being part of a complex system of value creation.

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