A 2.4. GREECE

Identification of training needs for integrating AI chatbots in VET

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1. INTRODUCTION

The primary research in Greece was carried out from June to September 2023. It involved 6 VET trainers in the specific field and related fields (fashion sector, design), and 4 students in fashion design and manufacturing. It should be noted that several VET and/or post-secondary schools communicate their offer in Fashion design departments, but in many cases, they are not active ones. Therefore, in the report at hand we are demonstrating both findings as coming from persons (teachers/students) involved in the fashion design sector, but also drawing from a wider scope in VET, professional and career development on the teachers' side.

Respondents acknowledge both the need of the sector (and beyond) to adapt and adjust to technological progress involving AI in the fashion sector, as well as its role in the teaching/learning process in the educational area. From the teachers' side, it was stressed that VET schools and organisations are prepared/applying such technologies to a medium level, however, at the same time they state that the fashion industry is or will be strongly in need of VET trainers with respective digital skills and competence in deploying AI. From both the teachers' and students' side, "technology" is mostly associated with well-established digital solutions (software, CAD, Photoshop, ProCreate, Illustrator etc.), not necessarily explicitly involving AI as an already fast-developing field. An important finding is that of the lack of funding and resources for VET schools to introduce new technologies.

2. METHODOLOGY

The feedback was collected with the help of two online questionnaires developed for teachers and students. Both groups were informed about the project scope, its objectives, and the use of their feedback in the development of the foreseen project outputs that are relevant to both groups as end beneficiaries. Most respondents filled out the online questionnaires online by sharing their personal data (email and name), while 3 teachers filled the questionnaire, preferring to not give out their personal data. In the following sections we demonstrate the main points raised in different research areas (Sections 4 and 5), complemented by a reference table including responds per research area and corresponding questions. Before jumping into the findings Sections, in Section 3 we share relevant information on the background of the participants (teachers and students).

3. ROLES AND BACKGROUND

As already mentioned, the mix of 6 VET teachers comes from both the fashion design sector and the VET sector. Therefore, we consider feedback at two levels – one within the fashion design sector and its educational/pedagogical layout, and one in the VET sector with respect to AI and technology-enhanced training, engulfing (e.g., at the level of VET school infrastructure/tools) fashion design, manufacturing, and related subjects/professions. All teachers have medium to long experience, and most of them (as freelancers or occasionally collaborating with VET schools) are living/teaching in large Regions/cities.

The 4 student participants come from the fashion design and manufacturing area. They represent a mix of 4 academic grades in VET and are all studying in large Regions/cities and their respective VET schools.

4. SCHOOL AND TECHNOLOGICAL CONTEXT

4.1. Use of Digital Technologies

The participating teachers do not collaborate with one specific VET school or organization as they are freelancers. The sector teachers and relevant VET/professional development teachers name specific digital tools (e.g., digital jacquard weaving, laser cut equipment, textile design tools), however, in the sense of "traditional" digital technologies, as compared to AI tools. They stress that VET schools are equipped to a medium level in this respect in general. On the other hand, they make mention of digital technologies and tools applied in the teaching/learning process – that is in the educational, and pedagogical context – mostly regarding e-learning, assessment, and learning process monitoring tools. Students seem to echo the teachers' statements, mentioning various digital tools like digital printers, and relevant software (e.g., Illustrator, Photoshop, digital weaving, printing, and knitting machines) stressing their importance in both optimizing design time AND promoting learning.

4.2. Benefits And Advantages of Using Digital Technologies

Teachers' perspective

The teachers highlighted the benefits and advantages of using digital technologies in 2 areas, that is, the sector-specific, professional area, and education areas as follows:

- Faster procedures, fewer mistakes, more precision, environmental sustainability.

- The combination of digital and analog (hand and human action driven) is very important in allowing students to understand the full methods and processes and appreciate the amount of time and work involved in producing a textile.

- Supporting online/distance training and learning.

Students' perspective

The students on the other hand echoed similar approaches, highlighting the following elements:

- Optimizing design time,
- Promoting learning,
- Encouraging the development of digital skills,
- Supporting creative processes and their execution.

5. INDUSTRY AND AI

5.1. Familiarity with AI Learning Tools

Half of the teachers declare familiarity with AI tools, while all students do so. Drawing from their overall statements about the usefulness of such tools in the fashion design sector, as well as in the training/learning process, we can safely conclude that the latest digital tools (AI included) are considered as already playing a substantial role in the field. However, when looking at what the respondents mean by AI, we see that they make mention of some clear AI tools, but also other digital tools (e.g., CAD) that are not directly AI-driven. This is an interesting finding, showing that there is quite a blurred picture for both students and teachers with respect to what AI tools and relevant software or services mean.

Specific AI-powered tools mentioned are the following:

- AI software (in general)
- Chatbots
- Speech recognition
- Biometrics for the creation of avatars,
- translation platforms

5.2. AI in Learning Process

Both teachers and students acknowledge the potential of AI in the learning process. Followed by the fast pace in education digitalization caused by the pandemic, the latest trends in AI (e.g., ChatGPT, etc.) seem to have started revolutionizing the educational community at all levels. The main "themes" conditioning the responses of teachers and students regarding AI in the learning process are "personalization/customization", "assistance", "data access and analysis", "experimentation", and "time management". An important finding mentioned by both teachers and students is that of an overall approach towards AI, that is, as an affordance that should enhance and further – rather than directly produce and lead – "knowledge". Human-driven activity is thus placed at the center of an endeavor with AI expanding possibilities and offering different pathways and above all computational capacity that lies beyond the human capacity vs time needed to deploy it.

In particular, the main aspects mentioned by teacher are the following:

- Personalized learning
- Intelligent tutoring
- Enhanced collaboration
- Data Analysis and insights
- Access to educational resources
- If it runs alongside analog ways of learning.

The main aspects mentioned by students are correspondingly the following:

- Collecting info and helping students to navigate through diverse material in a "smart" way. Customization
- As a learning assistant and self-assessment tool
- Allowing experimentation
- Assisting and not "doing the work" for you.
- Saving time and mistakes.

5.3. Positive Outcomes of AI Use in Fashion Industry

Teachers' perspective

Teacher don't seem to have thoroughly considered the positive outcomes of AI use in the fashion industry. However, relevant statements are that fashion and the design sector in general are maybe the first to go to that direction after pure IT

mpanies/services etc. A similar one stresses that the sector is among those where sustainability largely meets technology.

Students' perspective

On the students' side, half of them declare that they consider positive outcomes, while the rest don't really. In general, we can draw the conclusion that positive outcomes of AI use in the fashion industry are implied to some extent judging by several responds across relevant questions, however, we lack a clear picture of possible positive outcomes considered by both teachers and students.

5.4. Familiarity and Experience with Eco Standards

4 out of 6 teachers state that they implement eco standards. One specific application has been reported in a textile design course for weavers where the students are encouraged to work in a collaborative and site-specific way, considering the environment and the impact materials will have, so they are urged to use recycled materials, reuse and reinvent objects. Teachers stress the importance for educational institutions to align their programs with industry needs and collaborate with companies to ensure that students acquire the necessary knowledge and skills to thrive in the green economy sector.

Half of students declare familiarity and experience with Eco Standards. They report the use of fabrics or materials that are eco-friendly, trying to create fashion items from recycled products, such as swimwear for example. They also mention laser cut for example to save the environment from one use blades that cannot be recycled.

Only half of the students have experience in green economy model training or guidance, with respect to government regulations, and rules to be followed for environmental sustainability. Some of the aspects mentioned are reducing environmental risks, use of less energy, use of recycled products.

Document for Teachers (T):
Reporting & Coding Methodology for A2.4 National Reports - Teachers (T)

Cluster 1: Role and Background

Q and T	Question	Associated Text
1	I am a teacher	-
T	Field of expertise (e.g., fashion, technical, commercial, etc.)	Fashion design, weaving, textile design, VET, Adult Education, Professional development.
Q.3 T	Years of teaching experience	5 to 16 years of experience.

uster 2: School and Technological Context

Q and T	Question	Associated Text
Q.4 T	School location (e.g., small, medium, big region)	Big Region 5, Small Region 1
Q.5 T	Digital technologies you are familiar with (field of expertise)	digital jacquard weaving, online training platforms, digital assessment tools
Q.6/7 T	Digital solutions your school is equipped with (and how they are being used)	Most of them freelancers – schools with which they collaborated are equipped at a medium level. Software programs ,laptops, specific machines (laser cut) for simulation etc. In Textile Design (Print, Weave and Knit) Digital technologies (digital weaving printing and knitting machines), analogue technologies (hand weaving, hand knitting and hand printing technologies), alongside dyeing and research into sustainable materials and techniques and an emphasis on the lifecycle of material. There are often projects where spinning a particular material is involved or working with biomaterials.
Q.8	Benefits/Advantages of digital technologies use	Faster procedures, less mistakes, more precise, environmental sustainability. The combination of digital and hand is very important in allowing students to understand the full methods and processes and appreciate the amount of time and work involved in producing a textile. Supporting online/distance training and learning.

Q and T	Question	Associated Text
		Yes, because their content and provision need to change to respond to labor markets' rapidly evolving skill needs. This entirely depends on the staff employed, the teachers, and how they are supported by the heads of departments. Teaching facilities can collaborate with industry, they can seek funding from charitable companies, and can reach out to the community.
Q.9/10 T	Level of preparation in introducing/using digital technologies	Not sufficiently and not enough in the case of Greece.

Cluster 3: Industry and AI

Q and T	Question	Associated Text
Q.11	To what extent fashion industry requires digitized (VET) professionals	Great extent!
		50 yes 50% no AI software, chatbots, Speech recognition, Biometrics for creation of avatars, translation platforms, etc. Digital design and weaving tools <u>Use of chatbot:</u> Assisting students with short questions on the educational material.
Q.12/13/15/16/18	Familiarity with AI learning tools (i.e., chatbot) and use of them in school courses	Supporting monitoring and assessment.

and T	Question	Associated Text
		The use would be effective depending on the digital skills of the audience (learners). Helpful but probably expensive.
Q.14	Support of AI in learning process (teacher's perspective)	Personalized learning, intelligent tutoring, enhanced collaboration, Data Analysis and insights and wider access to educational resources. If it runs alongside analog ways of learning. Yes. in collecting info and helping students to navigate through diverse material in a "smart" way. It can be customized as well. As a learning assistant and maybe self-assessment
Q.20	Positive outcomes of AI use in fashion industry	Yes, fashion and the design sector in general are maybe the first to go to that direction after pure IT companies/services etc. Can't really say, but from my knowledge, the sector is among those where sustainability largely meets technology.
Q.21/22/23	Familiarity and experience with eco standards	New products are produced from recycled items. Reducing printing, minimizing transportation needs, infusing green aspects.

and T	Question	Associated Text
-	Overall opinion on AI use	- Assistive role is highlighted. - Monitoring and administrative role - Regarding the fashion industry, a more direct role as educational and professional asset has been highlighted. In the first case as enhancing the learning experience, in the second as a set of tools to support sustainable production and design. - It should not maybe be seen as a substitute of human action.

Document for Students (S):

Reporting & Coding Methodology for A2.4 National Reports - Students (S)

Cluster 1: Role and Background

Q and S	Question	Associated Text
1	I am a student	-
S	Field of study (e.g., fashion, technical, commercial, etc.)	Fashion Design and Manufacturing courses
Q.3 S	Academic/scholastic year	1st, 3rd, 4th year

Cluster 2: School and Technological Context

Q and S	Question	Associated Text
Q.4 S	School location (e.g., small, medium, big region)	Big Region (over 100 000 inhabitants)
Q.5 S	Digital technologies you are familiar with (field of study)	Medium to high
Q.6/7 S	Digital solutions your school is equipped with	Medium to high (software, infrastructure). AUTO CAD, Computer Aided Design, Computer Aided Manufacturing
Q.8 S	Benefits/Advantages of digital technologies use	They give you the power to save time and money and to work with a near-zero error rate. At the same time, it gives you the opportunity to experiment more with your designs. Timesaving, avoiding human error, modularity and standardization at the same time
Q.9/10 S	Level of preparation in introducing/using digital technologies	Medium level but sufficient.

Cluster 3: Industry and AI

Q and S	Question	Associated Text
Q.11	To what extent fashion industry requires digitized (VET) professionals	Great extent.
Q.12/13/15/16/17/18	Familiarity with AI learning tools (i.e., chatbot) and use of them in school courses	Chatbot (1 respondent), and Laser Cut (AI supported)
Q.14	Support of AI in learning process (student's perspective)	Yes, because it assists you to experiment more. It can help you more, but after you learn how to do things in order just to assist you and not do the whole work for you. Saves time and mistakes.
Q.20	Positive outcomes of AI use in fashion industry	50/50. (Yes/No) regarding considering positive

and S	Question	Associated Text
		outcomes in the specific industry.
Q.21/22/23	Familiarity and experience with eco standards	Half of the respondents are familiar, half not. New products are produced from waste. Obsolete products are renovated into new things.
-	Overall opinion on AI use	- Students motivated to use AI. - They stress both manufacturing and design phases as stages for AI use. - They acknowledge however the value of non-AI stages in the process, with AI as a smart assistant. -

6. CONCLUSIONS - OVERALL OPINION ON AI USE

According to the primary research findings in Greece, and with respect to the overall opinion and approach of both teachers and students on AI use in the fashion industry and the educational process in general, the following aspects are highlighted:

- AI tools are often considered as and/or confused with digitalization and digitization aspects, both as tools involved in design and manufacturing, as well as educational tools.
- AI tools (including chatbots) are considered as mostly relevant in an assistive role.
- Monitoring and administrative tasks (especially in the training/learning process) are promoted as application areas of AI tools.
- Regarding the fashion industry, a more direct role as educational and professional asset has been however highlighted. In the first case as enhancing the learning experience, in the second as a set of tools to support sustainable production and design.
- There is a certain extent of reluctance when it comes to AI substituting/supplementing human-driven action.
- There is a high level of motivation (mostly on behalf of students) in exploring/using AI tools in their learning process and eventually their professional careers in the fashion industry.
- Both manufacturing and design are acknowledged as main areas for AI application in the fashion industry.

<u>Recommendations and suggestions</u>

This document reflects the main findings of the relevant research carried out in Greece, involving a small number of teachers and students directly or indirectly involved in the fashion industry sector. Considering the IG-Fashion project objectives and foreseen tools drawing from both educational approaches and AI-driven tools for a sustainable production in fashion industry, the following recommendations are suggested in order to cover expressed opinion on the research topics at national level, but also to introduce aspects that have arisen at the level of the rest of the participating countries:

- A clear distinction/complementarity between the concepts of digitalization, digitization, and AI should be made.

- Well-documented connections between AI and sustainability should be offered covering the fashion design process.

- AI in an assistive role should be suggested and promoted covering both the educational process and the professional application area.

- Relevant examples and good practices for a sustainable fashion sector, especially mediated by AI or relevant technological tools, should clearly demonstrate benefits and strengths in this respect, but also challenges and obstacles, especially regarding elements like cost and overall digital readiness and skills of companies and persons involved respectively.