LCAMP

Learner Centric Advanced Manufacturing Platform

D2.4 POLICY RECOMMENDATIONS (I)

WP2: Learner Centric Advanced Manufacturing CoVEs Alliance

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CONTENT TABLE

EXECUTIVE SUMMARY

The goal of the D2.4 Policy Recommendations is to inform policy makers at local/regional/national/and European levels about our developments. This information might be useful for them to design their policies.

The first policy recommendation shares the key findings of our research on the effects of digital and green transitions on Advanced Manufacturing jobs and provides recommendations for policymakers to respond to the challenges. These recommendations are aimed at the EU level, but they can also be relevant at the national, regional, and even local levels and are based on three assumptions:

- Relevance of a skilled workforce. Having the right skills is a vehicle for employability (at the individual level), prosperity (at the individual, company, and economic level), and innovation (both at the company and social level).
- Relevance of good quality data about skills. The response of governments and VET systems to skill needs depends on having the right data about skills.
- Relevance of a non-technologically deterministic task-based approach to jobs. The questions of relevance are how tasks change, which new tasks arise, and which concrete skills are needed to carry out these tasks within existing jobs.

This Policy Brief is based on the research of the LCAMP. For the relevant reports, please look on the website.

Please note that the following key findings and recommendations are aimed at vocational education and training, mostly above level four of the European Qualifications Framework. These findings might not be relevant for jobs related to higher levels of qualification.

1. KEY FINDINGS AND RECOMMENDATIONS

1.1. VAGUENESS AND DATA QUALITY

Defining, identifying, and addressing skill needs requires good quality data but an international skill or competence framework is lacking. In addition, the available datasets vary regarding a group of respondents, skill topic measured (shortage, skill gap, current skill needs, future skill needs, etc.), measurement methods (self-reported facts, subjective perceptions, skill assessment, etc.), timeframe, countries included, etc. There are also different naming conventions (competences, skills, etc). All this makes it difficult to have internationally comparable data.

Recommendation: kick off a process of standardisation which will lead to an EU-wide skills framework, with a common set of categories, subcategories, levels, and names.

1.2. TASKS CHANGE, JOBS NOT SO MUCH

We have identified a few new jobs. Our analysis shows that the predictions of total automation, the disappearance of manual labour and the like, are not coming true. In this regard, we have not found massive job destruction. When trying to identify skills for greening or digitalisation, due to their transversal nature, we focused on tasks instead of jobs. Job changes are linked to various factors including, but not limited to, company size, digital maturity level, type of production, business strategy, organisational culture, and regulations.

The levels of digitalisation and automation are heterogeneous, with higher digitalisation levels in bigger companies. In general, digital technologies are not simply new tools to perform old tasks. Digital technologies change the way workers relate to each other, the way they relate to their work, the way they work and, of course, some of the tasks (or a lot, or all, depending on the job and the company) they perform. In this sense, digital skills are important but complex and not exclusively technology dependent.

Recommendation 1: Job profiles are relatively bundles composed of dynamic tasks. In other words, job profiles tend to be durable while the tasks that compose them tend to change. Take this into account when working on skills intelligence.

Recommendation 2: Technology trends are important but are not determinant, there are important non-technological elements that influence the way jobs change. Take this into account when working on skills intelligence.

1.3. BASIC KNOWLEDGE, SPECIALISATION, SOFT SKILLS, AND FOREIGN LANGUAGES

Companies seek workers with a solid understanding of the fundamental technical aspects of the job. Each company, after hiring a person with the basic knowledge, invests a considerable amount of time in training, in most cases within the company, until they have an autonomous and productive worker. In addition to a solid fundamental base, companies seek highly specialized profiles.

Transversal or soft skills, such as communication, interest in learning, flexible mindset towards change, or problem-solving, are very valued but only when they come as an addition to technical skills. Despite all the rhetoric in favour of soft skills and predicting the obsolescence of technical skills, despite the "humans should focus on human tasks while machines should focus on technical tasks" rhetoric, companies value soft skills if and only if they come together with technical skills.

We are far away from the scenario that predicts the full automation of jobs, the disappearance of manual tasks and the like if it ever happens to come.

Finally, companies value workers who can speak other languages apart from their mother tongue. The language of preference varies from one company to the other, but English seems to be important in most of the cases.

Recommendation 3: Above all the talk about disruptive and future technologies, emphasize the relevance of a strong base of fundamental technical skills.

Recommendation 4: Soft skills are important and should be part of every curriculum but do not forget basic contents.

Recommendation 5: The more specialisation we can achieve while maintaining a strong base and the inclusion of soft skills, the better.

Recommendation 6: Include a foreign language in the curriculum of VET students. An experience abroad can help with that.

1.4. SCARCITY OF QUALIFIED WORKFORCE AND GENDER GAPS

Far from the disappearance of work scenarios, companies are experiencing difficulties in hiring qualified workers. Smaller companies have more difficulties, as young workers tend to look for more technologically advanced companies and better working conditions. The ageing of the population and the gender gaps intensify the difficulty.

Recommendation 7: we need to encourage VET careers and gender equity if we want our companies to continue being competitive.

2. SUMMARY

- **Recommendation 1**: Job profiles are relatively bundles composed of dynamic tasks. In other words, job profiles tend to be durable while the tasks that compose them tend to change. Take this into account when working on skills intelligence.
- **Recommendation 2**: Technology trends are important but are not determinant, there are important non-technological elements that influence the way jobs change. Take this into account when working on skills intelligence.
- **Recommendation 3**: Above all the talk about disruptive and future technologies, emphasize the relevance of a strong base of fundamental technical skills.
- **Recommendation 4**: Soft skills are important and should be part of every curriculum but do not forget basic contents.
- **Recommendation 5**: The more specialisation we can achieve while maintaining a strong base and the inclusion of soft skills, the better.
- **Recommendation 6**: Include a foreign language in the curriculum of VET students. An experience abroad can help with that.
- **Recommendation 7**: we need to encourage VET careers and gender equity if we want our companies to continue being competitive.

3. FOR MORE INFORMATION

- LCAMP webpage CONFERENCE
- LCAMP webpage WP3

4. ABOUT LCAMP

The LCAMP project aims to support and empower regional Advanced Manufacturing Centres of Vocational Excellence (CoVE) to become more resilient, innovative and better equipped to train, upskill, and reskill young and adult students to successfully face the digital and green transitions.

In the context of LCAMP, you will find from the development of skills and competences to their provision; in addition to the design of learning pathways, micro-credentials, active methodological approaches, articulation of services and innovation for SMEs.

The fifth industrial revolution is built upon the technologies of the fourth, with an increased emphasis on a human-centric, sustainable and resilient industrial base, emphasising the digital and green transitions. A key pillar of this economic transformation is the role played by Advanced Manufacturing systems such as Robotics, 3D & 4D printing, artificial intelligence and high-performance computing.

Industry 5.0 requires Vocational Education and Training to develop 'learning-centric approaches' that focus on the holistic competences of humans that plan, manage, oversee or operate technologies. By collaborating across borders, the LCAMP alliance's goal is to support and empower regional Advanced Manufacturing Centers of Vocational Excellence to become more resilient, innovative, and better equipped to train, upskill, and reskill young and adult students to successfully face the digital and green transitions. The alliance will help regions grow and be more competitive through their Vocational Education and Training

To do so, the LCAMP project will develop activities in three main strands:

- **Teaching & Learning**: establishing AM skills frameworks and curricula; launching or revising AM programmes (including micro-credentials); creating or capacity-building learning factories (special AM labs, jointly run by VET and industry)
- **Cooperation and Partnerships:** launching a skills & jobs observatory for advanced manufacturing; accelerating industry/VET/region cooperation ideas via an open innovation community and providing consultancy to SMEs on integrating SME/VET connections
- **Governance & Funding:** creating a one-stop-shop portal for all our services; ensuring a business case for continuing services to stakeholders in the long-term, while enhancing participation.

The LCAMP consortium is composed of 20 full partners from 10 countries, of which 9 are educational organisations, 7 are industrial companies and 4 are VET and industrial associations. The consortium is also supported by 60 associated partners.

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