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**Good Practices in the use of collaborative learning environments as the  
way to enhance creativity and identifying good practices in the  
metalworking sector**

**OVERALL REPORT**

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## 1. Introduction to the Report

This report has been made within the framework of the TIM Project (Ref. 2013-1-ES1-LEO05-66260) - Work Package 2 ***“Analysis of the use of collaborative online environments to enhance creativity and innovation and detection of good practices”***.

The aim of this Overall Report is to put together the content of the various National Reports that have been produced by the partners of each of the countries involved in this project. However, this is not a mere recollection of the information included in those reports, but a synthesis and general conclusions drawn from the contents of the National Reports. It is particularly focused on the good practices and competences that have been identified as being important to workers in the metalworking sector. In addition, this report sets the steps that will be taken in the future as part of this project.

## **2. On-line environments to train competencies related to innovation in the metalworking sector**

On-line collaborative learning environments are a powerful tool which can be used to widen one's knowledge. They provide a lot of advantages because:

- They enable the learner to share knowledge and good practices with other learners.
- Being on-line, they widen the possibilities to reach a higher number of people who we can share knowledge with.
- They enable to share knowledge in different multimedia formats, which can be useful to share practical knowledge through videos, audios or images.

However, despite of the advantages of this system, on-line collaborative learning environments is not a solution which fits them all. The profile of the learner and their necessities is an aspect which needs to be taken into consideration.

In the light of the results of the national reports carried out by the partners of the TIM project, we've found out that not all metalworking workers would be likely to use this kind of tools. For example, technicians or workers in administrative positions are not likely to use this methodology whereas managers of the sector have expressed their interest if they can share (for promoting their own company) and find (to get good ideas based on real examples) there good practices in the implementation of new systems, methodologies or management solutions to drive innovation.

As, also according to the findings of the reports, workers in managerial positions (not only top managers but also intermediate managers, like foremen) are the ones who drive innovation in the metalworking companies and are the ones who can raise awareness and motivate both workers and top managers, to implement innovation in the organizations, the collaborative learning should be mainly addressed to them.

In the design of the collaborative learning environment, the partners will keep these recommendations in mind.

### 3. Major findings of the interviews with experts and focus groups

All the partners involved in this project have carried out a series of interviews with experts from diverse backgrounds, ranging from engineers to consultants, business trainers, human resource managers and marketers. These experts have provided those involved in the project with an invaluable insight on the skills needed to succeed at the workplace, as well as on the problems faced by workers in the metalworking sector when it comes to developing their competences. Thanks to their deep knowledge on these issues, we have been able to draw some interesting conclusions that we will hereby expose. As a matter of fact, most experts have come to the same, or quite similar, conclusion, which adds consistency to the overall diagnosis.

To start with, the experts have been asked to give their opinion on how creativity can contribute to job performance and the development of other skills. All in all, they appreciate the fact that competences as crucial as “empathy, autonomy, flexibility and team work”<sup>1</sup>, among others, are essential to develop a creative thinking and, thus, to drive innovation in the metalworking companies. Some of the experts have even stated that “the training of creativity can help only those employees whose work is either typically hand-crafted, or those who are directly responsible for the design of a product. In a situation where the training of creative is addressed to workers who do not affect the product’s shape, it could cause unnecessary frustration with them”<sup>2</sup>.

Therefore, although the development of a creative and innovative thinking is considered one strength for the metalworking companies and their workers, not all of them are meant to be creative and it is extremely necessary to put the focus on the right worker according to the kind of job he/she carries out. Moreover, as stated above, creativity is boosted by the development of different competencies and to develop one’s creativity we need to train those particular competencies which are not necessary the same ones for the different kind of workers or job positions in the metalworking sector.

The experts interviewed were also asked about the potential of the use of collaborative learning. Some experts have indicated that collaborative learning is a very useful methodology because “skills are internalized and acquired more easily than

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<sup>1</sup> National Report from Spain, page 10.

<sup>2</sup> National Report from Poland, page 21.

through traditional classroom training<sup>3</sup>. Additionally, collaborative learning can boost participation, interaction and the exchange of experiences. It should be noted, however, that some organizations might not be able to set up a collaborative learning program due to a lack of funds. This is the case of Small and Medium Sized Enterprises, for instance.

When it comes to the barriers that workers in the metalworking sector face when using collaborative learning methods, the experts have pointed out to the inherent reluctance that most of them have towards innovativeness in general and the usage of online platforms in particular. As their job involves highly repetitive technical processes, they are not very inclined to this kind of methods. In other words, these workers have a mentality that doesn't lend itself to trying new approaches and developing new skills; this mistrust for innovative methods is often shared by managers and business owners. It could be said that managers and workers alike have a traditional mind-set which makes them unenthusiastic about collaborative learning. Moreover, "workers like those of the metalworking sector are not used to interact with others in a professional context; they are not used to be asked for their opinions or to express them. They have problems with communicating their ideas"<sup>4</sup>. Other experts have gone as far as to say that the main issue behind the problems that arise from collaborative learning are related to the lack of proper educational culture in their countries<sup>5</sup>.

Apart from their lack of predisposition, there are technical issues that prevent them from using Information Technologies. Workers in the metalworking sector tend to have low ICT skills and are not familiar with the usage of new technologies and online platforms. This is obviously an obstacle when it comes to collaborative learning, which relies very much on online resources. It is often the case that workers in this particular sector do not have access to computers in a professional environment, which further complicates their ability to use these learning methods during their working hours.

In addition to the aforementioned issues, other problems have been mentioned, such as the small size of the enterprises, lack of time and shortage of wage benefits. However, these problems have not been mentioned as recurrently as the previous ones. All things considered, it comes as no surprise that most experts have declared that creativity training and collaborative learning are almost inexistent in the metalworking sector of their respective countries. There are some cases in which these

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<sup>3</sup> National Report from Italy, page 14.

<sup>4</sup> National Report from Spain, page 11.

<sup>5</sup> National Report from Greece, page 16.

methods have been used, but they are few and far between. Training on innovativeness is often limited to Human Resource managers and other qualified positions, and very rarely used for manual workers.

On the other hand, the use of collaborative learning in the metalworking sector not only depends on the target group (the potential learners/users) but also on the use given to this methodology. The managers and trainers of the metalworking sector have stated that they do think this methodology could be interesting if used to share knowledge and good practices regarding the implementation of innovation in training of the metalworking workers or the introduction of innovative managerial techniques to motivate workers to be creative in their job.

One of the main difficulties detected during the elaboration of the national reports has been related to the communication of the project and its objectives to the target group. Talking about “creative workers” in sector like the metalworking sector is not easy so we asked the experts in the development of creativity for advice to reach our target group and they made a series of recommendations as regards the training of creativity in environments where it is not a valued competence. For instance, it could be appropriate to train only those workers who are inclined towards creativity, as well as to create an adequate atmosphere of trust and ease. Other experts have pointed to the convenience of using social games and keeping the learning process as interactive and entertaining as possible, as well as encouraging participation. And, perhaps more importantly, it is vital to link the training process to direct and tangible benefits that will have a positive impact on both workers and businesses. For those who are reluctant to engage in learning experiences, the fact that undergoing training would lead to benefits for themselves could convince them to take part in the program. “An extra incentive for employees is the grant of a certification, for the subject of the attended course”<sup>6</sup>.

In order to design a proper online learning environment to train creativity, the experts have also given different recommendations. One of the aspects that has more often been mentioned is how this learning environment should be used. In this sense, the role of a facilitator has been considered very important because workers in the metalworking sector are not familiarised with on-line training and most of the training received is in person. Therefore, although the option of self-learning should be open as well, for a better use of the resources contained in the on-line learning environment it is recommended to count with the figure of a trainer.

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<sup>6</sup> National Report from Greece, page 16.

As to the contents themselves, it is appropriate that these be kept simple, focused and included cases that can be used for real life and organizational issues.

Apart from interviews with experts in the development and training of creativity, some of the partners also hosted focus groups in which they discussed the competences and training needs of workers in the metalworking sector with trainers and managers of these workers. These groups were useful to gather information that was very relevant to this project and that could be combined with the insight that had been provided by the experts in creativity. The participants of these focus groups were from different levels and positions within the metalworking sector.

When it comes to the competences that were identified, many of them are related to the collective nature of organizations. Working in a company where many other people work involves some competences that facilitate the success of the whole process. **Coordination** is crucial in the manufacturing process, as well as **communication** and **leadership**. All these skills lead to an effective **team building**, which is to be taken into account when working in such a company. There are also competences more closely related to individual features which nevertheless affect organizational behaviour, such as **responsibility, crisis management, experience, knowledge management and consistency**.

As regards the training needs, although training in the metalworking sector has traditionally been linked to technical skills, in the last years the development of transferable competences has also been very present in the training of the metalworking workers, especially due to the necessity of achieving a higher efficiency in the management of working teams and in the ability to react to changes and to solve unpredicted situations. Therefore, managers have pointed out training actions addressed to train competences related to these aspects (creativity among them), as very relevant for the qualification of the metalworking workers.

#### 4. Key success factors in the training of creativity

The good practices identified in the different national reports, though different in their nature and applicability, share some strengths that have been key to the success of these programs.

The strength that has most often been encountered is **adaptability**. The fact that the practices suit the needs of learners and is tailored to their demands it is essential. Also,

the learner needs to know how the training can be of help in his/her daily tasks and how to apply the contents of the training to a real context.

In relation with the first point, it is also very important that the contents are adapted to the kind of learner they are addressed to. This refers to the language, the presentation and the formats applied so the understanding of the contents will be easy. In any case, the language should be **simple, clear and straight to the point**. Besides, if talking about an on-line collaborative learning platform, this one has to be **user friendly, intuitive and easy to access** (disregarding the operative system or the device). The **registration process** also needs to be kept as **simple as possible**.

## 5. Recommendations to train creativity in the metalworking sector using on-line collaborative learning environments

Following the results gathered by the partners in their national reports, we can summarize the following recommendations to be taken into account for the development of an on-line collaborative learning environment to train creativity addressed to workers of the metalworking sector:

- Although collaborative learning has a great potential to build knowledge, it has to be taken into account that **the way cooperation is implemented needs to be tailored to the target group and its necessities**. In this sense, the recommendation given by the experts and by the managers and trainers in the metalworking sector has been to focus on managers and intermediate managers who can share their experiences in the implementation of measures which have helped to drive creativity and innovation in their organizations.
- Creativity is a competence which involves many others. One is not “just” creative, **to be creative is necessary to develop those competences which enable us to be creative**, therefore, the focus of the training needs to be on those competences and not on creativity as an abstract concept.
- The competences to be developed to be creative are not necessary the same ones for all types of workers. For example, for those workers who are team leaders, leadership and team working competences will be essential. Those who work in the production chain will need to be flexible and have a high level

of problem solving competences. Those who deal with customers will need to have a high level of social skills.

- In the same line as the statement above, it is necessary to specify which kind of worker we are addressing to because “metalworking worker” is a too wide concept and, again, not all kind of metalworking workers need to be creative and/or develop creativity in the same way.
- Lastly, another recommendation given by the experts and metalworking managers and trainers was to complement the training with the figure of a facilitator/trainer. This was considered very important as metalworking workers are not familiar with the use of on line environments and the facilitator/trainer can help them in this sense as well.

## 6. Next steps

With the elaboration of the national reports, the partners have been able to draw a picture of the state of the art of the implementation of training to develop transferable competences, specifically creativity, in the metalworking sector.

The conclusions of the desk research carried out and the interviews and focus groups with experts in the training of creativity, as well as with managers and trainers from the metalworking sector have enabled the partners to extract some useful recommendations for the next steps of the project.

In this regard, as a continuation of this report and the research carried out during the elaboration of the national reports, the partners will identify which are the competences the different kind of workers in the metalworking sector should develop in order to train creativity, defining the mentioned competences in the framework of the TIM project.

Once these competences have been identified and defined, the partners will work in the adaptation of the CESSIT project contents and will develop the specific contents for the TIM project. In parallel, the partners will work also in the development of the technical structure of the on line collaborative learning environment, defining its functionalities and the presentation of contents.