

PBL - Problem Based Learning for Companies and Clusters

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Abstract

Small and medium sized companies (SMEs) assure economic growth in Europe. Generally many SMEs are struggling to survive in an ongoing global recession and often they are becoming reluctant to innovate or to use new forms of learning for their staff.

Over the last years clustering has been of growing interest for SMEs helping them to be innovative also with limited resources.

In this paper we present shortly the learning methods in SMEs particularly the Problem Based Learning (PBL) as an efficient form for SMEs and their work in clusters.

In the field of Urban four SMEs clusters have been developed with potential of innovation and research in four European Regions: Tuscany - Italy, Valencia - Spain, Lisbon and Tagus - Portugal, Oltenia – Romania. The next task of the authors is to adapt and test the approach of ICT supported PBL worked within the project Archimedes to be used within these clusters.

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1. Learning in SMEs

Small and medium sized companies (SMEs) assure economic growth in Europe [8]. The financial crisis and the economic recession have hit SMEs hard in the Europe 28 (EU28) and the economic conditions remain difficult. Many of these companies are micro enterprises, having few resources and difficulties in facing technological, economic and financial changes.

Cluster development particularly learning methods for urban logistics by means of smart specialisation strategies and creation of competitive niches - Joint Action Plan development and implementation – is not enough researched.

Putting together companies and research institutions belonging to the Clusters on middle-long term objectives, for planning the development of the skills and qualification of their personnel is an effective way for creating permanent links between the research and the industrial environment. This attitude has several beneficial effects:

- Pushes industrial companies to link technological and market development to human resources qualification with a foresight of future trends.
- Can fill the cultural gap between industrial companies and R&D entities, creating osmosis between these two worlds.
- Stimulates companies to overcome the short-term vision of immediate interest and to cooperate with other companies on more ambitious targets.

The following table shows some characteristics of clusters and networks.

Table 1: Clusters and Networks [14].

Networks	Clusters
Networks allow firms access to specialized services at lower costs	Clusters attract needed specialized services to a region
Networks have restricted membership	Clusters have open membership
Networks are based on contractual agreement	Clusters are based on social values that foster trust and encourage reciprocity
Networks make it easier for firms to make complex products	Clusters generate demand for other firms with a variety of similar and related capacities
Networks are based on cooperation	Clusters take both cooperation and competition
Networks have common business goals	Clusters have collective visions

Source: Adapted from Rosenfeld (2001)

Referring learning, the most popular form of learning in SMEs is the informal one, which accounts for over 75% of the learning taking place in organizations today. Informal learning is the unofficial, unscheduled, impromptu way people learn to do their jobs. Most learning does not occur during formal training programmes. It happens through processes that are not structured or supported by an employer or an organized formal course. [2], [9]. Most companies, however, focus on and recognize only formal learning programs, losing valuable opportunities and outcomes.

Blended learning can combine the positive aspects of different learning approaches, classroom-based learning and e-Learning, formal and informal ones [6], [13]. By mixing learning styles and different dimensions of learning suitable for SMEs at the course level the usage of blended learning opportunities as a suitable way to learn in SMEs could be improved and so this increases or keeps up competitiveness/surviving of the companies.

The term blended learning is used in the literature for a combination of traditional off-line methods of learning with online methods (i.e. web-based ones) [12]. Within blended learning, classroom based learning is combined with computer-mediated instructions [10], [11], but also various event-based activities (face-to-face class rooms, live e-Learning, self-paced learning) are combined.

Important aspects of SMEs blended learning could be self-paced learning, mix of methods and media, quality,

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