

Intelligent Agents for innovative training solutions: the PARMENIDE Project

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PARMENIDE Project (Promoting Advanced Resources and Methodologies for New Teaching and Learning In Digital Education), co-funded by the Leonardo Da Vinci Programme, intends to design and spread out an innovative learning system with the purpose to match the E-learning training modalities with an advanced knowledge acquisition system based on **Intelligent Agents** (IA). The new learning methodology proposed is applied to train the transport sector employers.

The target group which will be involved is double: on one hand there are the final addressees, who will be the beneficiaries of new learning methodology (students/ employers of the transport sector), and on the other hand there are intermediate addresses, teachers/experts who are involved to define the design methodology and the contents production based on e-learning supported by IA.

The new methodology, based on experiential matters, intends to foster the synthesis between the theoretical and the practical approach based on the concept "learning by doing". The Intelligent Agents are, in fact, virtual tutors, with reactive, intuitive and interpretative capacity. The experts involved during the first phase of project will have to comprise the potentialities of the proposed methodology and to mediate defining the strategies concerning the programming and design e-learning based on innovative technology of IA. The students/ employers, with these new training methodology, will be able to comprise in real time the consequences of own mistakes and to acquire an ability operating directly on machines, system and technological tools of transport sector.

In particular the Parmenide Project will design and implement two e-learning pilot applications based on the innovative methodology of IA for the transport sector, both railway and airway. A testing phase of the applications will follow and will involve workers of the transport sector selected in order to experiment and assess the innovative method, the contents and specific supports, to increase the e-learning innovative processes in the transport sector.

The innovative learning process is based on a knowledge transfer, where the student is followed "step by step" by his agent/teacher using a new learning methodology based on experience, that allows, in real time, what has been learned and at the same time how correcting own eventual mistakes.

If compared with traditional system of multimedia learning, the Parmenide training solution based on AI becomes highly interactive and customised according to individual learning patterns following the natural students' predispositions and respecting the different knowledge acquisition time. The Parmenide tutor based on Artificial Intelligence methods will:

- show students how to carry out a complex task and to enhance a pragmatic approach to solve problems;
- evaluate the performances and responses of each user and adapt the teaching method according to specific needs and particular environments;
- guide and support the user during the learning path with on "learning by doing" methodology.