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Web-Based Asynchronous Distance Education in New Product Development and Inventive Problem Solving for Industrial Companies

Pavel Livotov, Prof. Dr.-Ing.

*Beuth Hochschule für Technik Berlin - University of Applied Sciences,
Department of Mechanical, Process and Environment Engineering,
Luxemburger Str. 10, 13353 Berlin, Germany*

Abstract

Web-based learning is a rapidly growing area in education, which can offer a vibrant learning environment created using different teaching strategies, activities, and technologies. The paper addresses the needs of the industrial sector regarding the qualification of R&D specialists in using efficient techniques for successfully running an innovation process. It briefly describes the programme of a web-based course for asynchronous distance training in new product development and inventive problem solving with TRIZ methodology, which focuses on the main outcomes of learners - R&D leaders, engineers and product designers. The paper outlines a multi-source training approach and demonstrates different tools and educational methods, such as an interactive web-based learning platform, software tools for computer-aided innovation, and the design of instructions and manuals. Furthermore, it provides examples of training tasks and demonstrates the ideas proposed by the learners towards a solution. Finally, the paper presents a new approach for an innovation strategy formulation at the very early stages of new product development, which was also a part of the distance learning course. The research part of the article investigates the opportunities of asynchronous education, analyses the learning experience and underlines the main difficulties for engineers taking an asynchronous distance learning course. A special section describes a new method for the measurement of education efficiency. The presented results can help industrial companies to organize their internal education in innovation techniques or to improve its performance. The knowledge gained may also be interesting for trainers in systematic innovation and inventive problem solving.

Keywords: new product development; inventive problem solving; TRIZ methodology; anticipatory failure identification; innovation strategy formulation; web-based distance education; measuring education efficiency
