

Tutorial proposal

Web-Based Workplace Learning

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Context / Abstract

Workplace learning is about getting new skills and competences that allow people to do their job better, more accurately, and in a more competitive way. All employees need to learn – novices and experienced workers alike. Although in many cases there is no formal enrolment and assessment as in educational institutions, most other aspects of learning feature educational institutions and workplaces alike.

Just like in learning in educational institutions, Web technologies can help enormously in workplace learning. We are witnessing a booming of Web technologies that support and stimulate learning at workplaces. They range from specific (educational) uses of current general Web technologies, to domain-specific and workplace-specific Web-based learning tools and techniques.

Getting introduced to a set of important principles and guidelines of Web-based workplace learning can dramatically raise learning organizations' competitiveness and greatly reduce the costs of increasing the level of skills of employees in such organizations.

Objectives

This tutorial is practically oriented. It covers recommendations, experiences, and practices of Web-based workplace learning in different types of organizations, both from the employees' and employers' perspectives. Research perspectives and trends are covered as well.

The objectives of the tutorial include:

- providing a set of important *guidelines* on how to introduce Web-based learning practices in organizations at lowest costs;
- explaining and illustrating *best practices* of Web-based workplace learning, presenting success stories and crash stories, indicating "do"s and "don't"s;
- getting an introductory hands-on experience with *software tools* recommended for use in Web-based workplace learning, discussing the choices and alternatives;
- walking through a number of *lessons learned* from successful and not-so-successful applications of Web-based workplace learning;
- presenting some of the latest *research results* in managing WBE development projects related to workplace learning;
- conveying experience in *introducing Web-based workplace learning* in organizations of different types, ranging from small/medium enterprises (SMEs), to large companies, to government organizations and NGOs.

Contents

The tutorial starts with a brief overview of the basic principles and motivation for WBE at workplaces (15 min). Then it discusses extensively the principles, guidelines, and tools needed to include in nowadays workplace learning, as well as carefully designed pedagogical and management strategies that help introduce Web-based workplace learning practices successfully (1 hr 15 min). A number of existing software tools, applications, systems and development environments are then analyzed in order to illustrate current WBE technology that learning organizations typically embrace, and to indicate directions for future developments (1 hr 30 min). A practical exercise with such tools is provided for participants.

Throughout the tutorial, advice and recommendations are given w.r.t. best practices that lead to picking important experience quickly.

Specifically, the topics covered include:

- Introduction
 - pedagogical background for workplace learning
 - categories of Web-based enhancements for workplace learning
 - typical projects of introducing WBE to workplaces
 - example (to be demonstrated from the Web)
- Principles and guidelines
 - cases for WBE in workplace learning
 - early indicators of success/failure
 - personal learning environments (PLEs) at workplaces
 - collaboration with academia and research partners in workplace learning
 - teaching, learning, and research aspects
 - funding
 - competition
 - best practices
 - example (continued demonstration from the Web)
- Tools
 - current Social Web and Semantic Web tools that can support learning at workplaces
 - development frameworks
 - open source vs. commercial tools
 - tool suites
 - practical exercise
- Selected examples, systems, and ongoing projects
 - comparative analysis of several workplace-related WBE/PLE projects
 - identification of patterns and antipatterns in workplace-related WBE/PLE projects
 - lessons learned

During the tutorial, the attendees are supposed to work interactively with the tutorial presenter on at least one practical example, using appropriate software tools.

Intended audience

Developers of WBE systems, managers of R&D institutions, students, practitioners, researchers, and other professionals in the broad field of WBE.

Prior knowledge required

Basic knowledge of XML technologies, Social Web, and Semantic Web.

Duration of the tutorial

3 hours (half day).

Summary of materials, hardware, software, other technologies and equipment to be used in this tutorial event

MS PowerPoint 2007 or higher, slides to be distributed to the participants electronically prior to the event, Internet connection and Mozilla Firefox Internet browser.

Number of participants

Any number is fine.

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Vladan Devedžić is a Professor of Computer Science with the Department of Software Engineering, FON - School of Business Administration, University of Belgrade. His current efforts and research interests are oriented towards practical engineering aspects of developing intelligent educational systems on the Web. He is a participant in the EU Framework 7 ICT project IntelLEO (started in February 2009), and has participated to a number of other international research and development projects. So far, he has also given 26 different tutorials on intelligent educational systems and software engineering at international conferences.

He has authored/co-authored more than 300 research papers (about 60 of them have been published in internationally recognized journals by publishers such as ACM, IEEE, Elsevier, etc.), six books, and several chapters in books on intelligent systems and software engineering edited by distinguished scientists.

His recent 2 books, entitled **Model Driven Engineering and Ontology Development** (2nd ed.) and **Semantic Web and Education** (Springer Verlag, Berlin/New York) have appeared in 2009 and 2006.

Here is an excerpt from his publication record, showing only some of his most important and most recent publications (see his home page for more):

1. D. Gasevic, D. Djuric, V. Devedzic, **Model Driven Engineering and Ontology Development**, 2nd ed., Springer, Berlin Heidelberg New York, 2009. (ISBN: 978-3-642-00281-6)
2. V. Devedžić, S.R. Milenković, "Teaching Agile Software Development: A Case Study", **IEEE Transactions on Education**, 2011. Forthcoming. DOI: 10.1109/TE.2010.2052104
3. Bertini, M., Devedžić, V., Gašević, D., Torniai, C., "Editorial: Semantic Technologies for Multimedia-enhanced Learning Environments", **Interactive Learning Environments**, Vol. 19, No. 1, 2011, pp. 1-4. DOI: 10.1080/10494820.2011.528702
4. D. Djuric, V. Devedzic, "Magic Potion: Incorporating New Development Paradigms through Metaprogramming", **IEEE Software**, Vol.27, No.5, 2010, pp. 38-44, DOI: 10.1109/MS.2010.90
5. M. Devedzic, V. Devedzic, "Imagine: Using New Web Technologies in Demography", **Social Science Computer Review**, Vol.28, No.2, Summer 2010 (May 2010), pp. 206-231. DOI: 10.1177/0894439309332661
6. V. Devedzic, D. Gasevic, D. Djuric, "Clarifying the Meta", **International Journal on Information and Communication Technology**, IJICT, Vol.1, No.2, 2008, pp. 148-158.
7. V. Devedžić, J. Jovanovic, D. Gasevic, "The Pragmatics of Current eLearning Standards", **IEEE Internet Computing**, Vol.11, No.2, May/June 2007, pp. 16-24.
8. J. Jovanovic, D. Gasevic, C. Brooks, V. Devedžić, M. Hatala, T. Eap, G. Richards, "Using Semantic Web Technologies to Analyze Learning Content", **IEEE Internet Computing**, Vol.11, No.5, September/October 2007, pp. 45-53.
9. D. Djuric, V. Devedžić, D. Gasevic, "Adopting Software Engineering Trends in AI", **IEEE Intelligent Systems**, Vol.22, No.1, 2007, pp. 59-66.
10. D. Gasevic, D. Djuric, V. Devedžić, "MDA-based Automatic OWL Ontology Development", **International Journal on Software Tools for Technology Transfer**, Vol.9, No.2, 2007, pp. 103-117.
11. V. Devedžić, **Semantic Web and Education**, Monograph, Springer Verlag, Berlin/New York, 2006.