

Chapter 11

CSRP: System Design Technology of Training Information Support of Competent Professionals

Vitaly Vladimirovich Martynov
Ufa State Aviation Technical University, Russia

Peter Sakál
Slovak University of Technology in Bratislava, Slovakia

Alexey Skuratov
Directorate of Scientific and Technical Programs, Russia

Elena Ivanovna Filossova
Ufa State Aviation Technical University, Russia

Alena Alekseevna Zaytseva
Ufa State Aviation Technical University, Russia

Elena Shavkatovna Zakieva
Ufa State Aviation Technical University, Russia

ABSTRACT

This chapter proposes a new model of managing educational institutions' activities to provide staffing needs: customer synchronized resource planning (CSRP). It describes a technology that rebuilds the learning process in order to reduce the time needed to prepare staff adequately with the competencies required by employers as requested by the economy sector. At present the development of an open system for the educational institution is being carried out. This system is able not only to create an educational program dynamically, which allows us to get the right number of specialists with the desired competencies in the minimum period, but also to rebuild the agency's management system for new tasks: to generate the necessary training materials, make changes in the timetable, and rebuild the educational portal by adding new data.

DOI: 10.4018/978-1-5225-3395-5.ch011

INTRODUCTION

Over the past decade or two advancements in educational technology have taken place so swiftly that it threatens to revolutionize the education system (Linda Van Ryneveld, 2015). At present specialists training in higher educational institutions need to meet the rapidly changing conditions of the information society and economy development. Today there is a lack of qualified personnel in a number of professions, and the demand is not fully in line with the supply provided by educational institutions. In addition, employers may believe that a large number of graduates from educational institutions cannot apply practically the obtained knowledge and skills, they have a low motivation to work, and they often do not have the competencies required for a particular job. This new approach is especially important in the training of engineers. The flexibility in using new technologies in HEIs reflecting the socio-economic changes affecting the needs of the student population across the world (Narduzzi & Campbell, 2015).

It is possible to increase the quality and effectiveness of the training by analyzing the requirements of those who are interested in their competitiveness (the educational institution, the state, and the employer), automating the process of learning and evaluating specialists' competitive capability (Martynov, Filosofova, & Guzaurov, 2014).

Training should be carried out with a focus on the criteria that assess the training quality (Bogoslovskiy et al., 2007). When training specialists in a technical university, the following criteria are of high priority:

- Degree to which graduates have acquired certain competencies
- Intellectual, personal, social, and psychological characteristics of a future specialist (such as communication skills, creative thinking, etc.)
- Focus on future professional activities (desire to work according to a specialty and high motivation to work)

In addition to the common forms of improving the quality of specialists' education, operational training of a specified number of trainees with the competencies required by employers is increasingly becoming an urgent task. This chapter focuses on the introduction of such educational platforms that effectively train specialists at any level of education with a set of desired requirements (in the form of competencies) for his or her level of knowledge. According to its purpose and functional properties, such an information system is the closest one to the CSRP systems in industry (Martynov, & Filosofova, 2014). For innovation to take place in higher education, the organizational culture of institutions of higher education and leadership should support such initiatives (Zhu, 2015).

USING CSRP TECHNOLOGIES IN EDUCATION

CSRP systems solve the problem of the individual urgent orders. Such systems presuppose continued possibilities to control the external elements of the production chain. In the CSRP systems with typical enterprise resource planning (ERP) system functions, the function of customer lifecycle support has been added. In the education system, such customers are primarily the representatives of the real sector of the economy, who make individual orders for specialists with the competencies required by the given employer.

To implement the CSRP systems in an educational institution, it is necessary:

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/csrp/210312

Related Content

Technical and Professional Communication in the European Project Semester

Joseph Barr, Elisabet Arnó-Macià and Ignasi Perat (2022). *Handbook of Research on Improving Engineering Education With the European Project Semester* (pp. 108-128).

www.irma-international.org/chapter/technical-and-professional-communication-in-the-european-project-semester/300246

Bridging the Academia-Industry Gap in Software Engineering: A Client-Oriented Open Source Software Projects Course

Bonnie K. MacKellar, Mihaela Sabin and Allen B. Tucker (2014). *Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills* (pp. 373-396).

www.irma-international.org/chapter/bridging-the-academia-industry-gap-in-software-engineering/102341

Digital Technologies in Architecture and Engineering: Exploring an Engaged Interaction within Curricula

Sara Eloy, Miguel Sales Dias, Pedro Faria Lopes and Elisângela Vilar (2016). *Handbook of Research on Applied E-Learning in Engineering and Architecture Education* (pp. 368-402).

www.irma-international.org/chapter/digital-technologies-in-architecture-and-engineering/142759

Augmented Reality Research for Architecture and Design

Mi Jeong Kim, Xiangyu Wang, Xingquan Zhu and Shih-Chung Kang (2012). *Computational Design Methods and Technologies: Applications in CAD, CAM and CAE Education* (pp. 225-237).

www.irma-international.org/chapter/augmented-reality-research-architecture-design/62950

Successes in the Development of an Arabian Gulf Materials Program

Bruce. R. Palmer, Dana Abdeen, Walid Khalfaoui, Nasser Al Jassem, Brajendra Mishra, Eunkyung Lee and David LeRoy Olson (2015). *Handbook of Research on Recent Developments in Materials Science and Corrosion Engineering Education* (pp. 309-328).

www.irma-international.org/chapter/successes-in-the-development-of-an-arabian-gulf-materials-program/127452