

# Chapter 54

## A Comparative Study of Teachers' and Engineering Students' Enterprise 3.0 Application in Entrepreneurship

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### ABSTRACT

*Everyone may at some stage need to become an entrepreneur or to display entrepreneurial behaviour or to have the opportunity of creating his/her own business regardless of background or location (EU Commission, 2004). Efficient business is shaped by such an essential factor as Enterprise 3.0 application in entrepreneurship. The aim of this chapter is to analyse teachers' and engineering students' Enterprise 3.0 application in entrepreneurship, underpinning elaboration of a hypothesis on the integration of teachers' and engineering students' Enterprise 3.0 application into teacher training and engineering education for efficient entrepreneurship. The meaning of key concepts of enterprise, entrepreneurship, entrepreneurship education, Enterprise 3.0, and Enterprise 3.0 application is studied. Exploratory research of the comparative study has been used. The empirical study included teachers' and students' case studies. Descriptive statistics were implemented for primary data analysis. The findings allow drawing the conclusions on the teachers' and engineering students' Enterprise 3.0 application in entrepreneurship. A hypothesis is proposed.*

### INTRODUCTION

Europe is facing enormous socio-economic and unprecedented demographic challenges, including regional disparities, aging populations, high rates

of low-skilled adults and of youth unemployment, low birth rates, changing family structures and migration (Lifelong Learning, 2008, p. 2) in the context of volatility, uncertainty, complexity and ambiguity. In the light of these challenges, busi-

DOI: 10.4018/978-1-4666-8468-3.ch054

nesses are struggling to adopt the best approach, pursuing efficiency in the alignment between Information Technology and enterprise's concepts and dimensions (Gama, Ostrowski, & Da Silva, 2012). To support business efficiency and competitiveness, Enterprise 3.0 has recently emerged. Therein, Enterprise 3.0 is an Information and Communication Technology's architecture used in the business processes.

The contemporary indefinite situation in the world encourages everyone to become an entrepreneur, or to display entrepreneurial behaviour or to have the opportunity of creating his/her own business regardless of background or location (EU Commission, 2004). Learning entrepreneurial skills which include Enterprise 3.0 application is becoming an essential factor in creating welfare (Seikkula-Leino, Ruskovaara, Hannula & Saarivirta, 2012). Therefore, entrepreneurship education has increasingly gained interest in the European Union (Seikkula-Leino, Ruskovaara, Ikävalko, Mattila & Rytkölä, 2009). Particularly, entrepreneurship education for contemporary engineering students is of great significance as engineers succeed harder to find a job: engineers' entering the service area has changed from working permanently at a large-scale enterprise to accepting project-related orders of large-scale enterprises by free engineers' office (Bassus, Wolfgramm, 2009, p. 38). In this situation, entrepreneurship becomes a viable solution to overcome the unemployed or migrant status engineering students are exposed to. To a deeper extent, entrepreneurship education for teachers is of paramount importance as teachers are a critical success factor in the entrepreneurship development (European Commission, 2011). Therefore, such various aspects of entrepreneurship education for teachers have already been taken into consideration as

- Teachers' perspective on entrepreneurship education (Backström-Widjeskog, 2010),
- National strategies to the entrepreneurship education,

- Delivering entrepreneurship education,
- Teacher education for entrepreneurship education (European Commission, 2011),
- Teachers' reflections about entrepreneurial education (Seikkula-Leino, Ruskovaara, Ikävalko, Mattila, & Rytkölä, 2009).

The aspects' analysis has resulted in the conclusion that entrepreneurship education for teachers is facing the challenge of significant changes in the way teachers themselves are educated (European Commission, 2011). One of the methods which have been suggested is Enterprise 3.0 application in entrepreneurship. By acquiring Enterprise 3.0, teachers will be more effective when using these methods with the students (The Oslo Agenda for Entrepreneurship Education in Europe, 2006). Thus, education and training are determined as the key factors for maintaining and improving the efficiency of Enterprise 3.0 application in entrepreneurship. Some research efforts were made to investigate teachers' use of Web technologies and students' Enterprise 2.0 application (Ahrens, Bassus, Zašcerinska, 2010; Ahrens, Zašcerinska, 2011). However, teachers' use of Enterprise 3.0 in entrepreneurship has not been analyzed. Such an empirical lacuna regarding teachers' Enterprise 3.0 application in entrepreneurship has to be filled in as teachers have a two-fold role:

- In society, teachers are the agents of change and,
- In education and training, teachers are the key actors for the enrichment of learners' use of Enterprise 3.0.

Moreover, teachers' and students' Enterprise 3.0 application has not been compared.

The aim of the research is to analyse teachers' and engineering students' Enterprise 3.0 application in entrepreneurship underpinning elaboration of a hypothesis on the integration of teachers' and engineering students' Enterprise 3.0 application

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