# Use of business simulations on ISCED 5/6 level – good practice example

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## Abstract

Business simulations are a widely used tool to support business education in view of the fact they enable students to face consequences of their decisions in safe environment in order to prepare them for the real business world. In this paper we explore the use of business simulations to enhance entrepreneurial attitudes of students on ISCED 5/6 level in University College of Economics, Entrepreneurship and Management "Nikola Subic Zrinski" in Zagreb. The survey was conducted among 3rd year bachelor students during the study course Controlling. Students were, aside from gaining theoretical knowledge, using business simulation CESIM OnService. The results have showed that the usage of business simulations accompanied by and correlated to the theoretical support for the decision-making process impacts advancement of entrepreneurial attitudes.

**Key words:** *business simulations, business education, ISCED 5/6 level, entrepreneurial attitudes*

## 1. Introduction

In a matrix of increased market competition and pressure of global economic crises that are accompanied by intense complexion of doing business, the need for use of business simulation in education is increasing. Simulation are used not only in education of students, but also in adult education with a goal of lifelong learning, and triggered by the necessity of updating knowledge and skills related to the turbulence of business world.

This research has been conducted in University College of Economics, Entrepreneurship and Management "Nikola Subic Zrinski" in Zagreb. It was conducted by means of a survey among 3rd year bachelor students during the study course Controlling. Students were, aside from gaining theoretical knowledge, using business simulation CESIM OnService. The pre and post analysis of students' attitudes towards entrepreneurship was conducted at the beginning of course that used business simulation as education tool and at the end. The CESIM OnService simulation is basically small service business management simulation game and is designed to provide students the opportunity to practice with the key success factors that are relevant to any service business in a small and medium size enterprise (SME) environment (Cesim webpage, 2012).

In this paper the implementation of business simulation researched and classified according to the OECD International Standard Classification of Education classification (OECD webpage, 2012) where the education levels are ranging from 0 to 6.

## 2. Use of Business simulations in education

The use of business simulations in education is increasing. The basic areas of the use of business simulations in education of students is during ISCED 3/4 (Upper and Post-secondary non-tertiary education) and ISCED 5/6 (First and Second stage of tertiary education) and adult education (Ferk and Bogdanovic, 2011). The reasons for increasing attractiveness of the simulations in education Garris et al. (2002) are identifying in the shift from the model of "learning by listening" into "active learning". Moreover, Gredler (1996) defines learning based on experience as the main function of simulations. Simulations are in addition active way of learning with highlighted use of theoretical knowledge (Wolmarans, 2005).

Authors Vogel et al. (2006) have researched that the benefits of learning are higher by students that are using with simulation games compared to traditional ways of learning. Namely, students that actively learn have the experience of increased cognitive effort in order to evaluate information and integrate it with the existing knowledge (Bell and Kozlowski, 2008; Brown and Ford, 2002). The authors Doyle and Brown (2000) emphasise that the advantages of the use of business simulation is in the ability to conduct actions without risk, learning trough experience, and analysis of decisions and correlating it to consequences.

Simulation games are extremely motivating (Malone, 1981). Authors Kraiger et al. (1993) are stipulating that learning can be observed trough changes in affective, cognitive and skills so the assumption is that effectiveness of simulation games is basically in their targeting of affective processes (Malone, 1981; Garriset al., 2002).

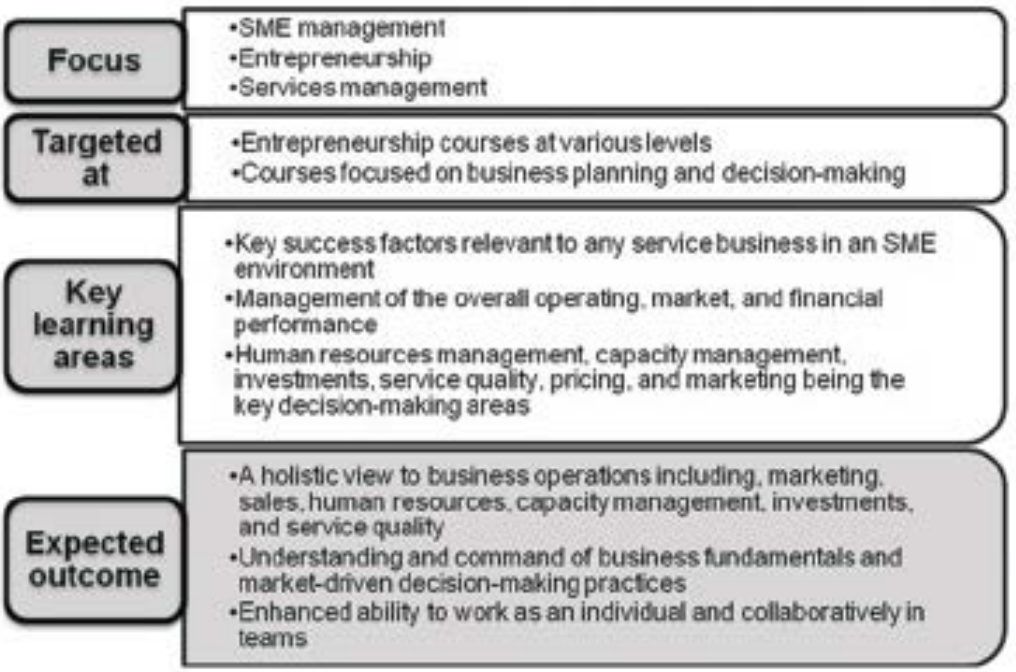
## 3. CESIM OnService simulation game

Cesim OnService simulation is designed to give students practical experience in managing various aspects of a small business in a service business environment. It includes key success factors that are relevant to any service business in small and medium size enterprise (SME) environment. Teams' goal is to manage the operating, market, and financial performance of a service business in competitive markets with seasonal variations in demand and economic conditions. Human resources management, capacity management, investments, service quality, pricing, and marketing are the key decision-making areas in the simulation. Teams are also faced with strategic decisions, such as expanding their operations to a new market area (Cesim webpage, 2012). As it is specified in Table 1, the simulation provides a holistic view to business operations including, marketing, sales, human resources, capacity management, investments, and service quality.

The on-line simulation platform allows team-members to work virtually if they wish. Each team-member has her/his own account that enables them to make decisions and scenarios on their own and later combine the outcomes with the other team-members. The platform also includes a communications forum that can be used to communicate within teams and between all teams in one market (Cesim webpage, 2012).

Since 2010, based on recommendation of Action Programme 2008-2011 (Ubiquitous Information Society Advisory Board of Finland, webpage) nine VET schools started with the implementation of OnService business simulation as a part of their curriculum in entrepreneurship education. Students from Helsinki business college, Mercuria, Omnia, Tampere Vocational school, Oulu Vocational school, Winnova, Sataedu, Lahti Vocational school, Jyväskylä Vocational School (Cesim webpage, 2012).

**Table 1:** OnService business simulation (Cesim webpage, 2012)




## 4. Research on ISCED 5/6 level

In order to research the entrepreneurial attitudes of students, a questionnaire was developed with Likert scale questions on representative sample of 9 students of ISCED 5/6 level, precisely the 3rd grade students. The same questionnaire was distributed twice, as pre and post test to the same students during the pilot project of implementation of business simulation into the study course Controlling. The researched entrepreneurial attitudes have been questioned as follows: (1) It is positive to be an entrepreneur, (2) I consider career of an entrepreneur interesting, (3) I would launch my business, if I would have a chance and resources, and (4) Entrepreneurs are creators of workplaces. The students are distributed so that 66,6% are male and 33,3% are female which is representing the population related to the composition of piloted group.

**Table 2:** Pre analysis of entrepreneurial attitudes

| **Entrepreneurial attitudes** | I do not agree at all | I partially do not agree | I neither agree nor disagree | I partially agree | I completely agree | *Total* |
|---|---|---|---|---|---|---|
| It is positive to be an entrepreneur | 1 (11,1%) | 0 (0%) | 2 (22,2%) | 5 (55,5%) | 1 (11,1%) | *9 (100%)* |
| I consider career of an entrepreneur interesting | 0 (0%) | 0 (0%) | 1 (11,1%) | 4 (44,4%) | 4 (44,4%) | *9 (100%)* |
| I would launch my business, if I would have a chance and resources | 0 (0%) | 0 (0%) | 0 (0%) | 4 (44,4%) | 5 (55,5%) | *9 (100%)* |
| Entrepreneurs are creators of workplaces | 0 (0%) | 0 (0%) | 2 (22,2%) | 4 (44,4%) | 3 (33,3%) | *9 (100%)* |

As the questions were ranging from 1- I do not agree at all to 5 – I completely agree, the results of the pre analysis have shown that 66% students consider that it is positive to be an entrepreneur. Worth highlighting is the fact that those students have chosen the area of entrepreneurship so this statement is to be expected (see Table 2). Furthermore, 88% of students consider career of an entrepreneur interesting, whereby all of them would launch their business if sufficient resources are provided. Related to the question if entrepreneurs are creators of workplaces, 78% of students agree with this statement.

**Table 3:** Post analysis of entrepreneurial attitudes

| **Entrepreneurial attitudes** | I do not agree at all | I partially do not agree | I neither agree nor disagree | I partially agree | I completely agree | *Total* |
|---|---|---|---|---|---|---|
| It is positive to be an entrepreneur | 0 (0%) | 0 (0%) | 0 (0%) | 5 (55,5%) | 4 (44,4%) | *9 (100%)* |
| I consider career of an entrepreneur interesting | 0 (0%) | 0 (0%) | 0 (0%) | 5 (55,5%) | 4 (44,4%) | *9 (100%)* |
| I would launch my business, if I would have a chance and resources | 0 (0%) | 0 (0%) | 0 (0%) | 1 (11,1%) | 8 (88,8%) | *9 (100%)* |
| Entrepreneurs are creators of workplaces | 0 (0%) | 0 (0%) | 0 (0%) | 5 (55,5%) | 4 (44,4%) | *9 (100%)* |

As displayed in Table 3, the post analysis at the end of the implementation of the simulation game shows that the students' attitude towards entrepreneurship has slightly increased. There is only a small increase in interest for the entrepreneurship as career path that is, as mentioned above, a career choice for the majority of questioned students. The two last questions related to the resources availability and its correlation to the business launch and the fact that the entrepreneurs are creators of workplace, those two have similar increase in interest. If we relate it to the business simulation they took part, it is to be concluded that the students after having a role of executive director and facing financial and human resource management decision have a more clear vision of the responsibility and consequences of their decisions. The biggest change is in perception of the fact it is positive to be an entrepreneur where majority of students agree it is positive to be entrepreneur.

## 4. Conclusions

The results of the comparison among pre and post statements of entrepreneurial attitudes of students that were using business simulations as active method of learning, shows an increase of positive attitude towards entrepreneurship. First of all, the students consider it is positive to be an entrepreneur and this perception has increased after the use of business simulations. Although it is impossible to extract the influence of other study material on students related to the pre and post statements during the semester that they were using the simulation game, still the fact is that 88% of questioned students would launch their business, if they would have a chance and resources. This is a significant increase related to the results of the pre analysis.

In relation to the research conducted by the authors Doyle and Brown (2000), the advantages of the use of business simulations is in the ability to conduct actions without risk, learning trough experience, and analysis of decisions and correlating it to their consequences, the experience with simulation game OnService in University College of Economics, Entrepreneurship and Management "Nikola Subic Zrinski" has proved that simulations are good tool to support learning process. Moreover, the use of simulation has been conducted with traditional theory lectures so the simulation have increased and actualised the need to study in order for students to compete during the simulation. It is to be concluded that business simulations support business education taking into consideration they enable students to face consequences of their decisions in safe environment in order to prepare them for the real business world.

# Korištenje poslovnih simulacija na ISCED 5/6 razini – primjer dobre prakse


## Sažetak

Poslovne simulacije široko su korišten alat za podršku poslovnoj edukaciji budući da omogućuju studentima suočavanje s posljedicama njihovih odluka u sigurnom okruženju u svrhu pripreme za stvaran poslovni svijet. U ovom članku istražujemo korištenje poslovnih simulacija u Visokoj školi za ekonomiju, poduzetništvo i upravljanje „Nikola Šubić Zrinski" iz Zagreba s ciljem jačanja poduzetničkih stavova studenata na ISCED 5/6 razini. Anketa je provedena na trećoj godini stručnog studija za vrijeme kolegija Kontroling. Studenti su, osim stjecanja teorijskog znanja, koristili poslovnu simulaciju CESIM OnService. Rezultati su pokazali da korištenje poslovnih simulacija praćenih i koreliranih s teoretskom podrškom u procesu donošenja odluka utječe na povećanje poduzetničkih stavova.


**Ključne riječi:** *poslovne simulacije, poslovna edukacija, ISCED 5/6 razina, poduzetnički stavovi*

## Literature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