

# Planning, implementation and evaluation of the project 'school of entrepreneurial competitiveness in the labor market for secondary grammar school students'

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Stručni članak

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Dr. sc. Irena Miljković Krečar, prof. v.š.<sup>1</sup>  
Veleučilište VERN', Zagreb  
irena.miljkovic@vern.hr



Igor Lukić, prof.<sup>2</sup>  
I. gimnazija, Zagreb  
igor.lukic.ipa@gmail.com

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<sup>1</sup> Irena Miljković Krečar diplomirala je, magistrirala i doktorirala psihologiju na Filozofskom fakultetu u Zagrebu. Zaposlena je kao nastavnica psihologijskih kolegija i predstojnica Katedre psihologije i komunikacije. Posebna područja njenog znanstvenog interesa su organizacijska psihologija i psihologija poduzetništva. Pored nastave bavi se poslovima profesionalne selekcije.

<sup>2</sup> Igor Lukić diplomirao je talijanistiku i filozofiju na Filozofskom fakultetu u Zagrebu. Nastavnik je etike, poduzetništva i talijanskog jezika u I. gimnaziji u Zagrebu te poduzetnik, direktor škole stranih jezika i prevoditeljskog centra Intellecta. Koautor je prvog kurikulumuma za izbornu nastavu poduzetništva u gimnazijama te koautor i urednik udžbenika i priručnika za poučavanje poduzetništva u gimnazijama. U okviru Cjelovite kurikularne reforme voditelj je stručne radne skupine za izradu prijedloga kurikulumuma Etike te član stručne radne skupine za međupredmetnu temu Poduzetništvo.

**Abstract:**

School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students, a project financed by the European Union, was created and carried out by First Grammar School from Zagreb. Its main aim was to encourage the development of basic entrepreneurial competencies in secondary grammar school students. Twenty-eight students participated in a three-month entrepreneurship education program (120 teaching hours). With the main aim of establishing the empirical effects of this education, research was carried out at two points in time - before and after its completion. The measurement included the following variables: desirability of entrepreneurship (DE), entrepreneurial self-efficacy (ESE), entrepreneurial inclinations (EI), entrepreneurial intentions (EINT) and objective level of entrepreneurial knowledge (EK). Twenty-eight additional students (a control group) of the same gender and age structure were also tested. Research has shown some significant positive effects of the entrepreneurship education, as well as some 'counter-effects', that are further discussed in the following text.

**Key words:** Croatian education system; entrepreneurial education; entrepreneurial self-efficacy; EU project; quasi-experimental research design

## Introduction

School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students is a European project carried out by First Grammar School (I. gimnazija) in the time span of 3 years, whereby the first year included preparatory activities (school year 2012/2013), the second year included the implementation of the project (school year 2013/2014), and the third year was devoted to follow-up activities of reporting and result dissemination (school year 2013/2014). The project was initiated after a detailed analysis of the Croatian education system, with a special focus on teaching plans and programs. The analysis showed that secondary grammar schools have no form of entrepreneurship education aimed at developing basic entrepreneurial competencies in students, which means that the education system is not implementing the guidelines on integrating entrepreneurial content specified in the National Curriculum Framework for pre-school education, general compulsory and secondary education. It was also established that there are no adequate materials for learning and teaching in this field and that Croatian secondary grammar school

teachers are not qualified for the content and manner of teaching which would have the development of basic entrepreneurial competencies as its aim. Communication between secondary grammar school education and the labor market was also found to be limited or non-existent, mostly depending on the willingness and ambition of individual teachers who wished to enrich the curriculum of their school. It would appear that a negative perception of entrepreneurial activities is predominant in the Croatian society, as well as the notion that secondary grammar school students do not need even the basic entrepreneurship education, experience or real contact with the labor market. Taking all the findings into account, the teaching staff of First Grammar School (I. gimnazija) and their project partners from Vocational School of Economics (Druga ekonomska škola) came up with the idea of developing the project School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students.

The project was done through six activity packages. The first activity package started with the analysis of teaching plans for all secondary grammar school subjects, the new curricula of vocational subjects in secondary vocational education focused on economics, and important newer documents which define learning outcomes in secondary education.

The analysis confirmed an extremely weak connection between the content and outcomes of current teaching plans with the learning outcomes of entrepreneurial content. Also within this work package, in order to study the Danish education system, a work group visited a school in Denmark which has successfully linked general secondary education to the labor market and is an example of quality entrepreneurship programs in secondary schools. The Danish example was analysed in detail and its practices were adapted to Croatian education reality and integrated in the project activities and curriculum of the elective subject Entrepreneurship, which was developed in Croatian and English.

As part of the second activities package, the central part of the project, the module *Entrepreneurship for Secondary Grammar School Students*, a pilot-subject for the future elective subject Entrepreneurship, was conducted in the total duration of 120 teaching hours. The uniqueness of this education can be seen from the fact that there was not a single *ex-cathedra* class in the program; all the modules were conducted in workshop form, with the students as focus of the education experience, and with emphasis on group work.

The modules that the students studied during the program were: The entrepreneurial idea, Basics of entrepreneurial planning, Project design, Project management as a business tool, The entrepreneurial mind-set as a key competency and the importance of the role of entrepreneur, Innovation, The company, Management skills,

Teamwork skills, Successful entrepreneur's efficacy in a company, Finance and Accounting, Product placement on the market, Company image, Public and media relations, Corporate social entrepreneur, Social entrepreneurship, Business ethics, Communication skills, Organizational skills, Intercultural skills and Language skills. The workshops were created and conducted by experts from different fields- external associates of the project who either have a proven track record in entrepreneurship or are university professors in different subject related to entrepreneurship or entrepreneurial activities.

The third package of project activities was aimed at developing learning and teaching materials for entrepreneurial content and Entrepreneurship as a school subject. Experts from the entrepreneurial field and Entrepreneurship professors, in collaboration with the project's work group and the project team developed a textbook and a teacher's handbook, both in Croatian and English. The textbook has been positively reviewed three times. Also, during the workshops focusing on entrepreneurship and language skills, students and their mentors created two dictionaries of entrepreneurship: Croatian to English and English to Croatian. The dictionaries are a valuable addition to Entrepreneurship and English language as school subjects, but also to those entrepreneurs who use English on a daily basis. As a result of developing the textbook, the teacher's handbook and the dictionaries, as well as the previously created curriculum, Entrepreneurship classes can be conducted both in Croatian and in English, and all the materials are available for download and usage free of charge on the project's website<sup>3</sup>.

The aim of the fourth package was to train 27 selected secondary grammar school teachers from different parts of Croatia to develop, organize, conduct and evaluate entrepreneurship programs with their students. During a four-day intense professional training program the teachers participated in 21 different workshops, with the aim of developing entrepreneurial competencies. The workshops were developed and conducted by domestic and foreign experts in entrepreneurship and Entrepreneurship professors, and the topics included: developing the entrepreneurial idea, project design, starting up and managing an economic entity, finance management, communication skills, organizational skills, intercultural skills, innovation, the entrepreneurial mind-set, the importance of the role of entrepreneur, the innovative Danish KIE model (which encourages innovative, creative and entrepreneurial potential in students) and others. Through participation in the workshops and aided by the bilingual handbook, the teachers have been trained to teach the subject of Entrepreneurship based on the curriculum developed within the first activity package,

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<sup>3</sup> [www.poduzetnistvo.prva.hr](http://www.poduzetnistvo.prva.hr)

and have mastered the basic tools for enriching their own classes with activities and outcomes designed to encourage the entrepreneurial mind-set in students.

The last two activity packages were aimed at changing the negative perception of starting entrepreneurial ventures which prevails in the Croatian society, especially with students and their parents. In order to achieve that, a series of roundtable discussions on the importance of entrepreneurship was organized for students, parents, teachers and the local community. One of the activities, which the students themselves pointed out as being the most important for 'creating a positive perception of entrepreneurship', was the five-day program called Learning in a Company, which all participants of the School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students took part in. Five companies, associates in the project, included the students in their daily business operations for five working days. By doing real business tasks, the students were able to test and apply the knowledge they had acquired during the course of the education.

In addition to all of the activities described within the six packages, one of the requirements for obtaining EU funds was to precisely measure the effects of the implemented student entrepreneurship education. The following introductory text provides a theoretical framework for the selection and measurement of key variables, followed by a description of the methodology, results and major conclusions.

Entrepreneurship is a complex and dynamic form of work activity. Success in a business venture is the result of the interaction of a number of personal and external factors. Personal factors and their influence on the development of entrepreneurial ventures, as well as the future performance of the company, have been the subject of numerous studies in the scientific branch of the psychology of entrepreneurship, whose development started in the 1960s. After decades of often inconsistent research results of various psychological characteristics of entrepreneurs, researchers' focus turned to creation of complex models of entrepreneurial behaviour. During the 1990s, along with the popularization of Bandura's theory of self-efficacy, the concept of entrepreneurial self-efficacy was created and extensively tested. In general, self-efficacy refers to the belief that we are able to perform a certain action or behave in a certain way, and it is considered to be the most significant single predictor of career choice (Krueger & Brazeal, 1994). Entrepreneurial self-efficacy (ESE) refers to 'a belief in one's own ability to establish a successful business'. Many studies confirm the importance of ESE in predicting entrepreneurial intentions (Krueger & Brazeal, 1994), differentiating entrepreneurs from non-entrepreneurs (Chen, Greene & Crick, 1998; Cromie, 2000; Miljković Krečar, 2013), and even finding a differentiation within a group of entrepreneurs (Zellweger, Sieger & Halter, 2010). The same construct is one of the key elements of the well-known 'Model of Entrepreneurial

potential' by Krueger & Brazeal (1994). This model is based on the assumption that entrepreneurship is a targeted, planned activity, and therefore formal models of intent can be used in its study. Intent is what focuses the decision onto targeted behaviour, and is therefore its most important predictor. Based on previous research, the authors presume that the formation of entrepreneurial intentions is strongly influenced by entrepreneurial self-efficacy. This belief is formed and influenced by some external, objective circumstances (e.g. the complexity of administrative and legal steps for setting up a business), and is therefore referred to as 'perceived feasibility'. However, what is key is the education of future entrepreneurs which can provide positive reinforcement, but also the opportunity for a more realistic view of planned business ventures. The second important element of the model is the so-called 'perceived desirability of entrepreneurship', which includes attitude towards entrepreneurial activity and the perception of social norms. This attitude may vary from generally negative to having a preference for a specific form of entrepreneurship, and will be influenced by the views of people from the immediate social environment (family, friends), but also the attitude of the general public. The two elements described form the so-called 'credibility of entrepreneurship' as a career option, which together with the factor called 'propensity to act' forms 'potential' for entrepreneurial activity. Propensity to act is seen as a relatively stable psychological characteristic, closely related to the concept of locus of control, but Krueger and Brazeal believe that the individual can learn how to manage oneself better, or how to become better at dealing with obstacles and take the initiative. The key variables of this study were selected based on the model described.

## Research objective and problems

The main objective of this study was to examine the effects of the entrepreneurship education program developed under the project *School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students* on students of First Grammar School (I. gimnazija) from Zagreb, Croatia.

The research problems set within the main objective were:

- 1) To examine the influence of the student entrepreneurship education on the changes in the perception of the desirability of entrepreneurship
- 2) To examine the influence of the student entrepreneurship education on the changes in entrepreneurial self-efficacy
- 3) To examine the influence of the student entrepreneurship education on the changes in entrepreneurial inclinations

- 4) To examine the influence of the student entrepreneurship education on the changes in entrepreneurial intentions
- 5) To examine the influence of the student entrepreneurship education on the changes in objective entrepreneurial knowledge

In addition to the main objective, the effects of a short, four-day program of entrepreneurship education conducted on teachers were also tested. The problems within this objective were:

- 1) To examine the influence of the teacher entrepreneurship education on the changes in the perception of the desirability of entrepreneurship in teachers
- 2) To examine the influence of the teacher entrepreneurship education on the changes in entrepreneurial self-efficacy in teachers
- 3) To examine the influence of the teacher entrepreneurship education on the attitudes about the possibility of encouraging entrepreneurship in students through education
- 4) To examine the influence of the teacher entrepreneurship education on the changes in teachers' self-efficacy in conducting entrepreneurship education for students
- 5) To evaluate the degree of the teachers' satisfaction with content and form of the teacher entrepreneurship education

The following section describes the procedure and measures used for testing the students, followed by the procedure and measures used for testing the teachers.

## Student testing

### Participants

A total of 28 students (the so-called 'project group') took part in the entrepreneurship education and all of them were tested. In order to precisely measure the effects of the program itself, and to exclude possible external factors that could affect students during the education, a control group of students of the same age and gender was also tested. In each group there were 18 girls (64.3%) and 10 boys (35.7%), out of which 7 were first grade students (25%), 15 were second grade students (53.6%) and 6 were third grade students (21.4%). All of them were from First Grammar School (I. gimnazija) from Zagreb, Croatia.

### Procedure

Before the start of the entrepreneurship education students from both groups were tested with an anonymous questionnaire drawn up for this project, which con-

tains five scales with five key variables. After the completion of the entrepreneurship education program (three months later), all the respondents (from both groups) filled out the same questionnaire again as well as an objective knowledge test. Each participant wrote their personal code on the questionnaire, consisting of letters and numbers, which ensured the anonymity of testing, as well as the pairing of first and second measurement questionnaires for every single participant.

## Instruments

The desirability of entrepreneurship was tested by a 5 items scale (adapted from Linan & Chen, 2006). An example of an item within this scale is 'I personally find a career in entrepreneurship totally unattractive'. Entrepreneurial self-efficacy was assessed by two measures - one general with 5 items (Linan & Chen, 2006), and the other containing a list of 30 entrepreneurial activities (adapted from Chen et al., 1998), and giving a more concrete measure of the self-assessment of entrepreneurial skills. An example of an item within the general scale of the ESE is 'Establishing a company and managing it would not be difficult for me', and of a specific scale is 'I know the basic principles of the labor market in the Republic of Croatia'. Entrepreneurial inclinations were tested with a questionnaire containing 69 items (Miljković Krečar, 2008). An example of an item is 'I do not mind working in conditions of uncertainty, as long as there is a reasonable chance of profiting.' Entrepreneurial intentions were tested with a 6 items scale (adapted from Linan & Chen, 2006), e.g. 'I have decided to establish a company one day'. All items were assessed on a Likert scale of 1 to 5, where 1 means strong disagreement and 5 total agreement with the statement. Some of the items of each scale were given in the positive form, and the others in the negative. Some general socio-demographic items were also included, as well as the questions on prior entrepreneurship experience and entrepreneurship in the family.

The objective knowledge test (applied only in second measurement) consisted of 50 open and closed questions, and including all the key concepts covered during training. Each correct answer scored 1 point, which means that the theoretical range of points was from 0 to 50. Partially correct responses were evaluated with 0.5 point, only on open-ended questions. Questions for this test were made by the lecturers themselves, each in their own area.

## Teacher testing

Teachers (N=24) went through an intensive four-day training program, and also filled out an anonymous questionnaire with 30 questions, measuring the desirability of entrepreneurship, entrepreneurial self-efficacy and entrepreneurial intentions (the

same questions as the students). Also, two additional scales were constructed for the purpose of this research, one with 6 items that describes attitudes about the possibility of the impact of education on the development of entrepreneurial characteristics (e.g. 'With the right training anyone can learn entrepreneurship') and the second containing 6 items describing teachers' self-efficacy in the implementation of entrepreneurial education (e.g. 'I think I'm a good example to students of entrepreneurship or enterprise'). The questionnaire also contained socio-demographic questions, and questions about prior entrepreneurial experience. In the second measurement, conducted after the training, teachers (N = 21) additionally evaluated their satisfaction with various aspects of education (9 items estimated on a Likert scale of 5 degrees), and had to highlight, among the 21 topics listed, with which they were the most and the least satisfied. In the end, they were offered one open question in which they could give their comments, suggestions and praise.

## Results

In the following text the most important results of the testing are presented. First are presented the results of the project group and the control group on five variables, measured at 2 points in time (before and after attending the education program). Within each group of students, the differences between the first and second measurement are tested and shown, as well as the differences between two groups in both measurements. Due to the fact that control and project group samples were small, normal distribution assumption was initially tested (measures of skewness and kurtosis). As some of the variables showed violated normal distribution, nonparametric tests of differences were calculated (The Mann-Whitney test for the differences between groups, and The Wilcoxon test of differences within groups, from the first to the second measurement). Finally, the results of the teachers are presented, and compared in two measurements with the paired t-test.

### Student results

Table 1 shows that in the project group the results of all five variables differ significantly from the first to the second measurement and that in all variables, except for self-assessment of entrepreneurial skills (second, more specific measure of entrepreneurial self-efficacy), the average results of the second measurement are significantly lower compared to the results of the first measurement. In other words, after the completion of the entrepreneurship education program, the perception of desirability of entrepreneurship decreased, as well as the participants' assessment of their own entrepreneurial self-efficacy. The participants had lower entrepreneurial

**Table 1.** Means (M), the standard deviation ( $\sigma$ ), and Wilcoxon Signed Ranks test (z), for the different variables in the first (T1) and the second measurement (T2) in a project group (P; N = 28) and control group (C; N = 28), and the differences in these same variables (Mann-Whitney U) between the project and control group.

Variable	Project group (P)		Control group (C)		Mann-Whitney test (U)
	M	$\sigma$	M	$\sigma$	
Desirability T1	4,3	0,6	3,48	0,77	136,5**
Desirability T2	3,35	0,3	3,14	0,33	228**
Self-efficacy T1	3,66	0,59	3,07	0,87	243*
Self-efficacy T2	3,21	0,37	2,78	0,4	163**
Inclinations T1	3,77	0,3	3,5	0,38	231**
Inclinations T2	3,19	0,13	3,2	0,3	359,5
Intentions T1	4,1	0,79	2,50	1,06	85**
Intentions T2	3,07	0,48	2,59	0,64	183**
Self-appraised knowledge T1	2,98	0,62	2,97	0,63	387,5
Self-appraised knowledge T2	4,23	0,58	2,8	0,75	49**
Objective knowledge T2	30,71	4,96	20,06	4,24	39,5**

\* $p < 0,05$ ; \*\* $p < 0,01$

inclinations and stated entrepreneurial intentions to a lesser extent. On the other hand, their self-assessment of entrepreneurial skills increased.

The same table shows that in the control group a decline in the assessment of the desirability of entrepreneurship, entrepreneurial self-efficacy and entrepreneurial inclinations was also recorded between the first and the second measurement. However, their entrepreneurial intentions remain the same, as well as the self-assessment of various entrepreneurial skills.

In the last column of Table 1 the results of Mann-Whitney U test are shown for the differences between the two groups on all the variables of the first and second measurement. As it can be seen, the average results of the project group were significantly higher than the control group on most variables, except for the self-assessment of entrepreneurial skills in the first measurement (in the second measurement, the difference is statistically significant), and the assessment of their own entrepreneurial inclinations in the second measurement (when the average results of the project group somewhat lowered and became similar to the results of a control group).

## Teacher results

A total of 24 teachers participated in the short entrepreneurship education, but the questionnaires in both measurements were completed by 21 of them. Despite the fact that the period of time was quite short, it was tested whether there are significant differences in the perception of the desirability of entrepreneurship, entrepreneurial self-efficacy, attitudes about the possibility of an impact on entrepreneurial education on students, and teaching self-efficacy in the field of entrepreneurship education and entrepreneurial intentions.

Table 2 shows that the results of the scales - desirability of entrepreneurship, entrepreneurial self-efficacy and entrepreneurial intentions did not significantly change from the first to the second measurement. Items related to the attitudes about the possibilities of entrepreneurship education and teaching self-efficacy in teaching entrepreneurship were analysed individually, because of low coefficients of internal consistency (Cronbach's alpha), which indicated that these were not homogeneous scales. Nine items that describe the satisfaction with the education showed a high internal consistency ( $\alpha = 0.94$ ), so their average is shown in table 2.

Among the 6 items that describe attitudes about the possibility of entrepreneurial education significant change between two measurements occurred in average scores of two statements. The agreement fell significantly for the claim 'A person is or is not suited for the entrepreneurship, it is something that we are born with' ( $Mt1 = 3.5$ ,  $\sigma = 1.0$ ;  $Mt2 = 2.0$ ,  $\sigma = 1.0$ ;  $t = 4.12$ ,  $p < 0.01$ ), and significantly increased for the statement

**Table 2.** Means (M), standard deviation ( $\sigma$ ), and paired t-test results in a sample of teachers (N = 21) on different variables in the first (T1) and the second measurement (T2)

Variable	M	$\sigma$	t
Desirability T1	3,73	0,75	2,09
Desirability T2	3,41	0,37	
Self-efficacy T1	2,9	0,41	-1,36
Self-efficacy T2	3,05	0,47	
Intentions T1	3,04	1,01	0,53
Intentions T2	2,94	0,48	
Education satisfaction	4,4	0,73	

‘It is never too late for an entrepreneurial career’ (Mt1 = 4.48,  $\sigma$ 1 = 0.6; Mt2 = 4.81,  $\sigma$ 2 = 0.4; t = -2.32, p < 0.05).

Among the six statements that relate to teachers’ self-efficacy significant change between measurements occurred with three items. In the second measuring, teachers evaluated significantly higher the items ‘I believe that I have enough knowledge about it to teach students entrepreneurship or enterprise’ (Mt1 = 3.05,  $\sigma$ 1 = 1.11; Mt2 = 3.86,  $\sigma$ 2 = 0.73; t = -3.3, p < 0.01), ‘I believe that I’m entrepreneurial enough to teach students entrepreneurship or enterprise’ (Mt1 = 3.62,  $\sigma$ 1 = 0.97; Mt2 = 4.29,  $\sigma$ 2 = 0.72; t = -3.57, p < 0.01), and ‘I think I’m a good example of an entrepreneurial person to students’ (Mt1 = 3.24,  $\sigma$ 1 = 1, 04; Mt2 = 3.9,  $\sigma$ 2 = 0.83; t = -3.57, p < 0.01).

On the nine items scale which measures satisfaction with the education, a high average grade was given M= 4.44 ( $\sigma$  = 0.73), with the highest average score (M = 4.7,  $\sigma$  = 0.56) obtained for the claim ‘The education has given me useful tools for usage in the classroom’. The lowest average ratings, though still high (M = 4.1) were given to items ‘Teachers themselves are an example of good coaches of entrepreneurship’ ( $\sigma$  = 0.94) and ‘The education had an optimal duration’ ( $\sigma$  = 0.99), which is reflected in the comments of a few teachers in the open-ended question, mentioning a too high intensity of the program.

## Discussion

The main objective of this study was to examine the effects of the entrepreneurship education of students on their assessment of the desirability of entrepreneurship (DE) as a career option, entrepreneurial self-efficacy (ESE), entrepreneurial inclinations (EI), entrepreneurial intentions (EINT) and an objective level of entrepreneurial knowledge (EK). The obtained results revealed some positive and some (conditionally speaking) negative effects of the entrepreneurship education. Positive effects were found on the self-appraisal of entrepreneurial skills (second, specific ESE measure), reflected through significant increase of its average result from the first to the second measurement. As the average results of control group on the same measure hadn't changed (and were similar to the project group average at the first measurement), this finding are certainly attributable to the education program itself, and not to some external factors (such as regular educational activities). Also, a significant effect was found on the objective knowledge test, as the project group scored 10 points more after completion of the program. These differences certainly testify to the content and construct validity of the program of entrepreneurship education. However, after attending the education, the project group members slightly but significantly lowered average scores on DE, ESE (general measure), EI and EINT scales. In other words, after the education the students consider entrepreneurship a somewhat less desirable career option, they intend to deal with it to a lesser extent, and find themselves to a lesser extent suited for engaging in entrepreneurship. That can be seen as a counter-effect of the education. However, compared with the control group, the project group members still (in the second measurement) find entrepreneurship more desirable, have a higher overall entrepreneurial self-efficacy, a larger number of them are planning to become entrepreneurs and they score higher on the knowledge test. The only non-consistent difference between the two groups in the second measurement was on the entrepreneurial inclinations scale, as the average result of the project group significantly decreased and became more similar to the control group result.

These results, although surprising at first glance, are not uncommon in this field of research. In a very similar quasi-experimental research design, Volery, Müller, Oser, Napflin and del Ray (2013) compared the effects of various programs of entrepreneurship education of vocational schools students, and compared them to a control group of students. The students voluntarily enrolled the programs of entrepreneurship education, which means that they already differed from the control group in the perception of the desirability of entrepreneurship, entrepreneurial self-efficacy and entrepreneurial inclinations. The authors measured all the variables be-

fore and just after the completion of the training program, as well as five months after the program. Their results showed that the attendance of the program had a significant positive effect on beliefs about entrepreneurship, the capacity to explore new opportunities and the entrepreneurial knowledge, but not on the other measured entrepreneurial qualities, nor entrepreneurial intentions. The lack of effects in this area was explained through the assumption that the attendance of entrepreneurial training led to a more realistic assessment of the complexity of entrepreneurial work by some portion of the students and led them to estimate that entrepreneurship is not suited for them.

In the study by Von Graevenitz, Harhoff and Weber (2010) it was found that entrepreneurial education, although it has positive effects on the so-called entrepreneurial skills, even tends to decrease entrepreneurial intention of participants. Counter-effects of entrepreneurship education were also found by Fayolle, Gailly and Lassas-Clerc (2006), who determined that in those students who had previous entrepreneurial experience or some form of a contact with it, entrepreneurial intentions significantly decreased upon completion of training.

Taking into account these research results, and given the low average age of our participants, as well as the fact that they volunteered in the entrepreneurship education program, we assume that our participants came into the program with a too optimistic or too unrealistic image of entrepreneurship. In the first measurement they had significantly more positive attitudes towards entrepreneurship, higher overall entrepreneurial self-efficacy, higher assessment of their entrepreneurial inclinations, and stated higher entrepreneurial intentions than the control group. For example, their average score on the desirability of entrepreneurship scale was as high as 4.3, and after the training dropped to 3.3. Obviously, the training provided participants with a clearer picture of the complexity and difficulty of the entrepreneurial lifestyle that led to a reduction of mystification of entrepreneurship, to which they, being underage, are particularly prone. This could certainly be further tested through some qualitative research, i.e. through interviews with participants in order to determine how the training experience affected their perception of entrepreneurial work and themselves as potential entrepreneurs.

It is also interesting that in the first measurement, the project group participants assessed their knowledge of specific entrepreneurial activities (on the second, more specific ESE measure) similar to the control group. This suggests that the perception of the desirability of entrepreneurship (as a career decision) and oneself as a potential entrepreneur is created independently of the rational assessment of how much one knows about entrepreneurial activities. This finding is consistent with research conducted by Miljković Krečar (2013) who tested one generation of Entrepreneurship

economics students with the same instrument, and found that there was no significant correlation between the expressed entrepreneurial intentions and self-appraised entrepreneurial skills (specific ESE measure). However, significant correlation was found between the general assessment of ESE and entrepreneurial intentions.

Non-critical appraisal of our own mental resources or denying the importance of practical business knowledge and skills before engaging in entrepreneurship can be easily associated with a high rate of decline of new companies. For example, an analysis of Ltd. companies in the period from 2002 to 2010 showed an overall survival rate of 58.4%<sup>4</sup>. This means that almost half of them do not survive the so-called 'valley of death', the period of the first few years, before the company begins to make a profit. This fact reflects the most the importance of entrepreneurship education, even if it means that some individuals will afterwards permanently give up entrepreneurship. In other words, despite the now very popular attitude that entrepreneurship should be encouraged at all levels of education and in all layers of society, entrepreneurship education should not send a non-critical message that everyone can be a successful entrepreneur. Such a thing cannot be argued for any form of business activity, let alone for entrepreneurship which is particularly complex and requires the individual to be a 'master of all trades'.

This study had certain methodological shortcomings that should be pointed out. The first is the small sample size, which disables the possibility of generalization of the findings. Also, although other data were collected that may be relevant in interpreting the findings (such as previous experience with enterprise and entrepreneurship in the family), due to the low number of respondents complex statistical analyses were not possible to carry out. Furthermore, this was a so-called quasi-experimental research design, which means that the respondents were not initially equal on all relevant variables, which makes it difficult to estimate the exclusive effect of the education program. Ideally, a larger group of students who were initially equally motivated for entrepreneurship and entrepreneurial education, considered themselves equally successful as future entrepreneurs and had similar entrepreneurial inclinations should have been chosen. Then, they should have randomly been divided into the project and the control group. However, in practice it was difficult to find a larger number of students who would be willing to be exempted from the regular school program for three months, which was especially problematic in students from higher grades, especially graduates.

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<sup>4</sup> [http://www.minpo.hr/UserDocsImages/STRATEGIJA%20RAZVOJA%20PODUZETNI%20A0TVA\\_PRVI%20NACRT\\_06%2003%202013\\_javna%20rasprava.pdf](http://www.minpo.hr/UserDocsImages/STRATEGIJA%20RAZVOJA%20PODUZETNI%20A0TVA_PRVI%20NACRT_06%2003%202013_javna%20rasprava.pdf)

Also, communication between members of the project and the control group should have been disabled during the program and measurements. It seems that this factor in particular impacted the decrease on the DE, ESE (general measure) and EI scores in the control group recorded in the second measurement. Namely, as they were all the students of the same school, or even the same class, we assume that the members of the project group conveyed their education impressions to their classmates, and thus affected their impressions as well. Other potential causes of the changes recorded in the results of the control group could be found in some common, external factors that could affect all students, and be related to regular school content or to current media content, which could have been negatively connoted towards entrepreneurship at the time.

Only time will show the real effects of the implemented entrepreneurship education. Although many previous studies have shown positive effects of entrepreneurship education on the formation of positive attitudes about entrepreneurship, entrepreneurial self-efficacy and entrepreneurial intentions, the most valuable answers are obtained only through longitudinal monitoring. Namely, the subjects of our project group, despite the significant decrease in the results of several variables, continue to be a specific population, different than the average student. This means that the possibility of them becoming entrepreneurs one day should in no way be excluded, especially if we take into account the fact that this is a young population (mostly third grade students), which typically do not engage in entrepreneurship.

Finally, the teachers who have undergone training program have also reported some positive effects. As the main purpose of this training was not to encourage teachers to become entrepreneurs, the lack of changes on DE, ESE and EINT does not come as a surprise. On the other hand, the education has to a large extent helped teachers to challenge and change some of their too deterministic beliefs about the possibilities of the impact of education on students' entrepreneurship, an example of which is a significant drop in the average agreement with the statement 'A person is or is not suited for entrepreneurship, it is something that we are born with'. Also, teachers increased self-efficacy in the field of teaching entrepreneurship, an example of which is significantly greater agreement with the statement 'I believe that I have enough knowledge to teach students about enterprise' in the second measurement. Besides that, teachers expressed a high average satisfaction with the completed education which, in addition to the acquisition of specific knowledge, helped their mutual rapprochement, which was particularly pointed out in the open-ended question. The main guideline for the next cycle of education, as seen by several teachers, is to increase the number of days of training, or to plan a less intense pace of work.

To conclude, the project described is of great importance for the Croatian education system. Thanks to the project activities, any secondary school in Croatia or abroad has a complete, free of charge package for implementing Entrepreneurship as an elective or facultative subject, or extra-curricular activity. Other than creating learning and teaching materials in Croatian and English, the project has secured the foundations for developing entrepreneurship as a cross-curricular topic as part of the Comprehensive Curricular Reform started in 2015. Introducing entrepreneurial content in Croatian secondary schools through this project also encouraged activity in key institutions of the education system- namely the Agency for Upbringing and Education. The Agency has incorporated the project experiences and conclusions into its regular system of professional development of teachers, leading to various programs being organized to develop enterprise in students. This project has placed First Grammar School (I. gimnazija) in a leading position among Croatian grammar schools when it comes to securing financing from EU funds in order to improve and advance the education system through conducting projects of national significance. Based on the positive experiences arising from this project and the materials developed during its course, First Grammar School (I. gimnazija) has continued teaching Entrepreneurship, which is currently offered to students as a facultative subject. It is also necessary to commend the ingenuity of the teaching staff of First Grammar School (I. gimnazija) who formed the work group, and whose work has garnered attention from both experts and the media, and will hopefully ultimately have a concrete educational and economic effect.

## Conclusion

The state of entrepreneurship education in Croatia is far from ideal, and is still limited to specialized higher education programs or individual courses in economics secondary schools. The importance of entrepreneurship education has been recognized in the context of the strategic goals of the Council of Europe, which in 2002 adopted a framework of the eight key competencies that every individual should develop throughout life, i.e. which will develop through lifelong learning (Miljković Krečar, 2010).

Taking this into account, the implemented project *School of Entrepreneurial Competitiveness in the Labor Market for Secondary Grammar School Students* is a unique and praiseworthy effort of bringing entrepreneurial education closer to those parts of the education system that are traditionally excluded from it. A number of implemented project activities were aimed to ensure all necessary conditions for

the successful introduction of Entrepreneurship as an elective or optional subject in secondary grammar schools.

This paper presents the results of measurements of the effects of the pilot program of 120 hours of entrepreneurship education conducted on 28 students of First grammar school (Zagreb, Croatia). Significant positive effects of the program have been recorded in the area of self-assessment of entrepreneurial skills and the objective level of entrepreneurial knowledge of participants. On the other hand, after the program the participants slightly, but significantly decreased their perception of desirability of entrepreneurship, their suitability for entrepreneurship and entrepreneurial intentions. Such a 'counter-effect' of entrepreneurial education has been found in several previous studies, and was interpreted as the effect of demystification, or acquiring more realistic and (self) critical image of entrepreneurship and entrepreneurs.

This research also showed that teachers are in need of training for teaching entrepreneurship and enterprise, and that the acquisition of practical skills and knowledge is as important as the empowerment of teachers' self-efficacy and changing their attitudes towards entrepreneurship.

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## **Planiranje, provedba i evaluacija projekta »Škola poduzetničke konkurentnosti na tržištu rada za gimnazijalce«.**

### **Sažetak:**

Projekt Škola poduzetničke konkurentnosti na tržištu rada za gimnazijalce, financiran iz predpristupnih fondova Europske unije, pokrenula je I. gimnazija iz Zagreba. Njegov osnovni cilj bio je potaknuti razvoj osnovnih poduzetničkih kompetencija kod gimnazijalaca. U tromjesečnom programu poduzetničke edukacije (120 nastavnih sati), sudjelovalo je 28 učenika I. gimnazije. S ciljem empirijskog utvrđivanja efekata ove edukacije provedeno je istraživanje u dvije vremenske točke - prije i nakon njena završetka. Mjerenjem su zahvaćene varijable: poželjnost poduzetništva (PP), poduzetnička samoefikasnost (PSE), poduzetničke sklonosti (PS), poduzetničke namjere (PN) i objektivna razina poduzetničkih znanja (PZ) polaznika. Mjerenjima je pristupilo i dodatnih 28 učenika (kontrolna skupina) iste rodne i dobne strukture. Rezultati ukazuju na neke pozitivne efekte poduzetničke edukacije, ali i određene kontraefekte, o čemu se detaljnije govori u nastavku teksta.

**Ključne riječi:** Hrvatski obrazovni sustav; poduzetnička edukacija; poduzetnička samoefikasnost; EU projekt; kvazi-eksperimentalni nacrt istraživanja

