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FOSTERING CREATIVITY, COGNITIVE ABILITIES AND ENTREPRENEURSHIP BEHAVIOUR THROUGH NEW EDUCATION MODELS

In this research the author makes an attempt to find the extent to which education encourages creativity and whether online programs in entrepreneurship contribute to business success and entrepreneurial career. Accordingly, she conducted a survey in a group of students from the Belgrade Business School, Serbia. The sample consisted of 98 students randomly selected. The author proposes the research methodology and discusses the key findings.

Keywords: creativity, cognitive abilities, entrepreneurship, education, e-learning, Serbia.

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РОЗВИТОК ТВОРЧОГО ПІДХОДУ, ПІЗНАВАЛЬНИХ ЗДІБНОСТЕЙ І ДУХУ ПІДПРИЄМНИЦТВА ЗАВДЯКИ НОВИМ МОДЕЛЯМ ОСВІТИ

У статті зроблено спробу показати, якою мірою освіта впливає на творчий підхід і як онлайн-програми з підприємництва сприяють успіху в бізнесі і підприємницькій кар'єрі. Проведено опитування серед групи з 98 студентів Школи бізнесу в Белграді (Сербія). Наведено теоретичні викладки, запропоновано методологію дослідження, за результатами зроблено відповідні висновки.

Ключові слова: творчий підхід, пізнавальні здібності, підприємництво, освіта, електронне навчання, Сербія.

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РАЗВИТИЕ ТВОРЧЕСКОГО ПОДХОДА, ПОЗНАВАТЕЛЬНЫХ СПОСОБНОСТЕЙ И ДУХА ПРЕДПРИНИМАТЕЛЬСТВА БЛАГОДАРЯ НОВЫМ МОДЕЛЯМ ОБРАЗОВАНИЯ

В статье сделана попытка показать, в какой степени образование влияет на творческий подход и как онлайн-программы по предпринимательству способствуют успеху в бизнесе и предпринимательской карьере. Проведен опрос группы из 98 студентов Школы бизнеса в Белграде (Сербия). Приведены теоретические выкладки, предложена методология исследования, по результатам сделаны соответствующие выводы.

Ключевые слова: творческий подход, познавательные способности, предпринимательство, образование, электронное обучение, Сербия.

Introduction. Creativity has long been thought to be characteristic of highly gifted and noble people; however, such an argument has been proved to be a wrong attitude. Although every individual has certain creative abilities, the extent to which these potentials will be developed largely depends on how much these abilities are encouraged and well-treated. It is in this view that education plays a crucial role and signif-

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icantly determines whether its outcome will be "passive imitators" or "active, creative contributors" (Radovic-Markovic, 2012).

In traditional learning students are passive participants at all the levels. Their personal creativeness is not encouraged, nor are they challenged to think critically and originally. On completing the process of formal education they are capable of more or less successfully reproducing the information they learned in the course of their schooling, however, they have not learned to implement the acquired knowledge in practice and use this knowledge as a basis for new ideas and making business decisions autonomously. The knowledge students acquired in the course of their education has frequently turned out to be not really applicable or even inadequate to meet the modern requirements of business. Therefore, the new economic environment should be accompanied by the change in educational environment.

Theoretical background. In the literature creativity has been regarded as a form of knowledge creation and how it can benefit learning opportunities (Craft, 2005). Moreover, creativity and innovation have close links with knowledge and learning. Hence, creative education involves a balance between teaching knowledge and skills, and encouraging innovation (NACCCE Report, 1999). There are more than 100 different definitions of creativity. However, in our research we focus only on creativity which is coming up with new ideas and contributes to the development of entrepreneurial abilities of students through education.

There is a strong relation between education and entrepreneurship (Celik, 2006). Especially higher education is of key importance for entrepreneurs. Education, in one hand, encourages entrepreneurship and sets the substructure of entrepreneurship culture; on the other hand, it develops qualities and competencies of entrepreneur when he sets up a company (Tusiad, 2002). Research shows that the youth who have education for entrepreneurship tend to be entrepreneurs (Ibicioglu et al., 2009). Education has also been noted as one means to infuse women more concretely into entrepreneurial experience (e.g., Peterman & Kennedy, 2003; Wilson, Kickul & Marlino, 2007). A recent study found that education plays different roles in countries' economic development at different stages (Van der Sluis et al., 2005). For example, in a developed country, the level of education was found to be one of the significant variables affecting the performance of female enterprises (Lerner et al., 1997). Considering the importance of education for entrepreneurs, it has recently become evident that the new age is looking for new forms of education, such as creative education. According to recent research (Liarokapis et al., 2011), the introduction of virtual environments into higher education has the potential to bring a positive change in the learning experience. The online learning environment is quite different from a traditional classroom. In the first place, it means that online courses require participants to take on new and different teaching as well as learning behaviors. In addition, e-learning content differs from other educational materials, i.e. it can be disassembled as individual learning objects, tagged, and stored for reuse in a variety of different learning contexts (Harris, 2005). "E-learning context is very important. It is common to find educators who perceive e-learning as internet-only education that encourages a static and content-focused series of text pages on screen. Others envisage the shallow and random online messages that are typical of a social real-time chat session, and wonder how that type of communication could add any value to aca-

demic discourse. Some may have experienced e-learning done poorly, and extrapolate their experience into a negative impression of all e-learning" (Demiray, 2010). In the education field intelligent agents are going to help students improve their skills, serving as tutors, this solution of agents is not new, but has not been widely developed because of many factors as computational processing and interfaces have not been developed to accomplish the communication between people and agents, also the integration of cognitive theories and computational theories did not permit a growth development (Sanchez-Guzman et al., 2009).

"Learning by doing" is a non-traditional approach in which students are actively engaged in experiences that will reinforce lessons and teach skills that will have a lasting impact and, thus, help them become better learners" (Dialogue Magazine, 2011). In this context, multiple perspectives take the educational experience beyond classroom to cultivate real-world applications and to elaborate the matter in question. "Service learning, community-based learning, community action research, internships, study abroad, and similar experiences all provide opportunities for authentic learning that engage students in using their critical skills to understand and to better the world" (Association of American Colleges & Universities, 2006). For instance, acquiring entrepreneurial knowledge not only helps students identify entrepreneurship activities, but also stimulates them to run their own businesses and to be more adaptable to the fast changing entrepreneurial environment. According to Ashmore (1991) students start to understand that although a business may be successful today by performing a given set of tasks, tomorrow a quite different set of tasks or skills may be required.

The effects of a new education strategy on fostering creativity. The effects of a new education strategy that focuses upon an individual and the development of his/her individuality can be viewed from a number of aspects, such as:

- a) cognitive aspect;
- b) behavioural aspect;
- c) integrated cognitive and behavioural aspects.

Fostering cognitive abilities in an individual helps develop their intellectual potentials. This can be achieved through varied modern forms of studying, such as:

- video games;
- computer simulations of real practical situations that require students solve the problem or make intelligent decisions;
- including students into research and projects and having them do their individual projects;
- networking students both within and outside school community so that they should share knowledge and experience;
- continuous discussions on certain topics, meant to develop critical thinking and personal attitudes etc.

Behavioural aspects should include the change in students' attitude to the manner of studying, as well as to the subject matter they are expected to master during the learning process. This primarily concerns more freedom in expressing their attitudes, which is the basis for fostering individuality. Besides, students are expected to be more independent in studying, while the role of teacher/lecturer is reduced to that of a coach. Namely, teachers will be expected to supervise students' work and guide them,

help them become autonomous and self-confident which will ultimately result in students' greater autonomy and resourcefulness when engaged in work.

In our opinion, no impressive results can be achieved in enhancing creativity in the educational process without integrating cognitive and behavioural results. Hence new learning strategies have to observe both these aspects. Moreover, it is not only observing the strategies that matters, but also their developing and changing so that they should be geared to the needs of both the individual and the society as a whole. These changes cannot be one-side, but should be viewed from the perspective of the student as well as from that of the teacher. Teachers will also be expected to be accomplished promoters of these changes in order for the effect of new educational strategies to be full. First of all, they will have to accept the role of a coach and be able to guide students in the desired direction, i.e., in the direction of enhancing their creativity, originality and logical reasoning. They should ensure a relaxed learning atmosphere (without stress), good communication and be always available to students (via modern technologies), show respect for every student and observe cultural, ethnic and gender differences. In order to achieve these goals, teachers will become more creative and master more modern, multidisciplinary knowledge. These will in turn be achieved through permanent education, but also through learning together and sharing experiences in the student-teacher relations.

Enhancing personal creativity for entrepreneurship. If we agree that an entrepreneur is not born but created, then education plays a very important role in this process. An entrepreneur needs multidisciplinary knowledge, i.e., the knowledge in various fields — business information science, business economy, business psychology. This knowledge should be presented in such a manner to help future entrepreneur generate a business idea and take business risks. Hence, it is necessary that the spirit of entrepreneurship to be developed in every individual and already in the course of educational process, from elementary school to university level. To achieve this, different techniques for testing ideas or rational decision-making should be implemented. Brainstorm techniques should be implemented primarily, followed by the creative problem-solving techniques. Namely, creativity can be fostered in many different ways, by using the following techniques:

- (a) Reverse brainstorming,
- (b) Gordon method,
- (c) Checklist method,
- (d) Free association method,
- (e) Forced relations method,
- (f) Scientific method, and
- (g) Parameter analysis.

Each of the techniques mentioned above will be explained in brief and their use will be shown in the following sections. Accessing the problem through the reverse brainstorming technique is identical to brainstorming, only this method allows criticism. As the matter of fact, the technique relies on discovering mistakes. This technique should be used as a supplement for other techniques in order to stimulate creative thinking. The process includes the identification of everything wrong regarding the idea. The ways to overcome errors are discussed later on.

Gordon's method relies on the interview of a group of people who do not know the problem's essence. Usually, an entrepreneur starts with providing general information on the problem. The group of people responds by offering many ideas. Later on, an entrepreneur analyses all the ideas and develops a new concept while maintaining the existing one. In the checklist method, new ideas are developed by means of a list of given suggestions. An entrepreneur can use a list of questions, which can serve as sort of a guide for new ideas development. The checklist method may have any form or length.

However, one of the simplest methods for generating new ideas is free association. This technique is useful in developing a completely new approach to a problem. First, a word or a phrase, which is directly related to a problem, is examined and later on, other words are added, while every word should add something to the previous in order to create a chain of ideas. Yet, the method represented is another technique in a group. Questions about a certain problem are also asked here, with the efforts to develop a new idea which would result from the new combination of different ideas and opportunities. A new concept is developed through the process, which consists of 5 phases, as follows:

- (a) Separation of problem elements,
 - (b) Finding relations between these elements,
 - (c) Registering all relations,
 - (d) Analyzing the results of all new ideas in order to find a good idea or a model,
- and
- (e) Development of new ideas from these models.

The scientific method is widely used in many research areas. This method is used in observation technique as well as in experimental techniques. The approach includes defining a problem, problem analysis, data collecting and analysis, the development and testing potential solutions and the choice of the best solution. Finally, the parameter analysis includes 2 aspects - identification of parameters and creative synthesis. Identification of parameters includes analysis of variables, thus determining their values. Creative synthesis is developed through developing parameters and relations.

Enhancing creativity, innovation and entrepreneurship abilities through e-learning: an evidence of Serbia. Serbia does not have extensive experience deploying online studies and virtual faculties. Forming an international learning network may enhance e-learning opportunities in Serbia as well as in other countries that are developing or in transition (Radovic-Markovic, 2007) Because the functionality of technologies and the benefits of virtual learning to learners and professors have been misunderstood, the entrepreneurial process, although improved in Serbia, has been impacted due to the lack of awareness (Radovic-Markovic, 2007a).

As Radovic-Markovic and Bodroski-Spariosu (2010) mention in their study, Serbia does not have broad experience deploying online education and virtual faculties. Forming an international learning network may enhance e-learning opportunities in Serbia as well as in other countries. An aggravating factor for faster development of Internet studies lies in the fact that the Internet education in Serbia has a low level of interest among students. Furthermore, most students cannot imagine "a classroom without walls", as well as quite a different way of learning (Radovic-Markovic,

2012). If the Serbians or citizens of other nations become more familiar with the techniques, potential learners as well as educators may be able to effectively discern the pros and cons of how e-learning would enhance and improve education (Radovic Markovic and Bodroski Spariosu, 2010). Recently a number of studies have been done in Serbia to investigate different aspects of e-learning, especially in the field of business and entrepreneurship (e.g., Radovic-Markovic, 2007; Radovic-Markovic et al., 2009; Radovic-Markovic and Bodroski-Spariosu, 2010). Building a more inclusive distance learning environment in Serbia involves making technological choices built on flexibility and an ability to respond quickly to changes in constantly evolving technology and informational resources. Collaboration, involving teachers, mentors, and instructional designers who truly represent hard to reach learners, and a willingness to invest in developing a cyber-infrastructure that reaches all learners regardless of where they live will be crucial (Radovic-Markovic, 2009a).

Methodology. The questionnaire is designed to investigate the concepts of "e-learning"/"distance learning" and "entrepreneurship" from the point of view of students in this field. This questionnaire is applied to Belgrade Business School, Serbia. The sample consisted of 98 people randomly selected.

Our research included 9 questions as follows (Radovic-Markovic, 2012c):

1. Do you intend to run your private business as soon as you graduate?
 - A) Yes
 - B) No
2. Why do you like to be an entrepreneur?
 - A) This is the only way to get a job
 - B) I can earn more than working for someone
 - C) I have a good business idea which I want to realize
3. Do you have any role model among successful entrepreneurs?
 - A) Yes
 - B) No
4. Is it necessary to receive formal education for entrepreneurship ?
 - A) Yes
 - B) No
5. Do you believe that distance learning would be a good solution for future young entrepreneurs?
 - A) Yes
 - B) No
6. Would you like to attend one of these distance learning programs ?
 - A) Yes
 - B) No
7. What would be the most important in selecting such a program, and ways of learning?
 - A) Acquisition of knowledge
 - B) The faster and easier way to graduate
 - C) Flexibility in studying
8. What do you think is crucial to be successful in entrepreneurial career?
 - A) To be highly motivated to succeed
 - B) Have the innovative ability and original business ideas

C) Having good business contacts

9. The last question was supposed to find the most appropriate direction for educational strategies to be developed in order to reach the mentioned goal to encourage the entrepreneurial abilities of students. Therefore, the following choices were provided based on the indepth interviews:

- A) To be more oriented towards the individual needs of students
- B) To increase an individual's level of independence and freedom
- C) To increase creative abilities and original thinking
- D) All of the above.

Key findings.

The author started this research with the question "Do you intend to run your private business as soon as you graduate?" Very interesting is the opinion of the respondents, since about 90% are really ready to launch their own businesses as soon as they graduate. The explanation lies in the fact that the respondents attend business studies. Certainly the results would be different if we put the same question to the students from a technical university or a college. For students is of key importance "to earn more if they work for themselves" (45%). 50% answered "No" 42% said "Yes' to the question "Do you have any role model among successful entrepreneurs?". Namely, the young people in Serbia do not have role models among successful entrepreneurs because the high level of corruption generates successful unethical businesses. 50% answered "Yes" to the question 4. As many as 90% believe that distance learning would be a good solution for future young entrepreneurs. Women and men equally mostly believed that distance learning would be a good solution for future young entrepreneurs. A large number of the respondents gave a positive answer to question 6. The explanation can be found in the fact that, first of all, students like to see how e-learning works in practice because it is still not too widely applied in Serbia. It should be noted that the top priority for the respondents in selecting some e-learning program is "flexibility in studying". Question 8 is "What do you think is crucial to be successful in entrepreneurial career?". The second option ("Having good business contacts") is marked by 70 respondents.

At last, a correlation is discussed between entrepreneurial intention and entrepreneurship e-learning program selection for business success. As it is illustrated in the following tables and figures, intention has a positive meaningful impact on success. As F-value is greater in the linear model, this model best fits our case (Radovic-Markovic et al., 2012b).

Table 1. Curve estimation for Intention-Success in Serbia

Model Description		
Model Name		Intention-Success in Serbia
Dependent Variable	1	DSERBIASUCCESS
Equation	1	Linear
	2	Logarithmic
	3	Quadratic
Independent Variable		DSERBIAINTENTION
Constant		Included
Variable Whose Values Label Observations in Plots		Unspecified
Tolerance for Entering Terms in Equations		.0001

Source: (Radovic-Markovic et al., 2012b).

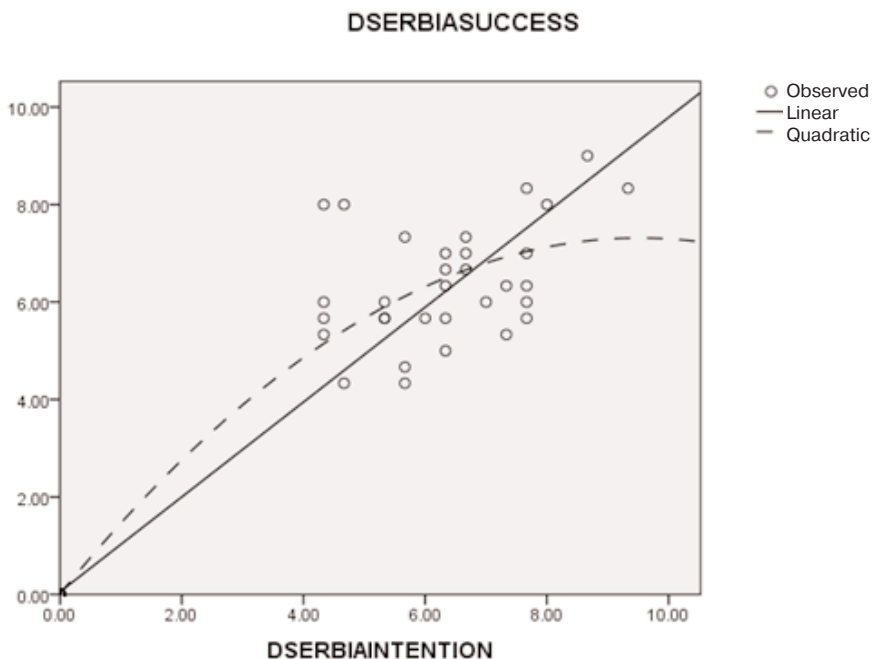
Table 2. Model Summary and Parameter Estimates for Intention-Success in Serbia

Dependent Variable: DSERBIASUCCESS								
Equation	Model Summary					Parameter Estimates		
	R Square	F	df1	df2	Sig.	Constant	b1	b2
Linear	.945	2148.687	1	124	.000	.053	.973	
Logarithmic ^a						.000	.000	
Quadratic	.959	1445.248	2	123	.000	.010	1.534	-.081

The independent variable is DSERBIAINTENTION.

^a The independent variable (DSERBIAINTENTION) contains non-positive values. The minimum value is .00. The Logarithmic and Power models cannot be calculated.

Source: (Radovic-Markovic et al., 2012b).

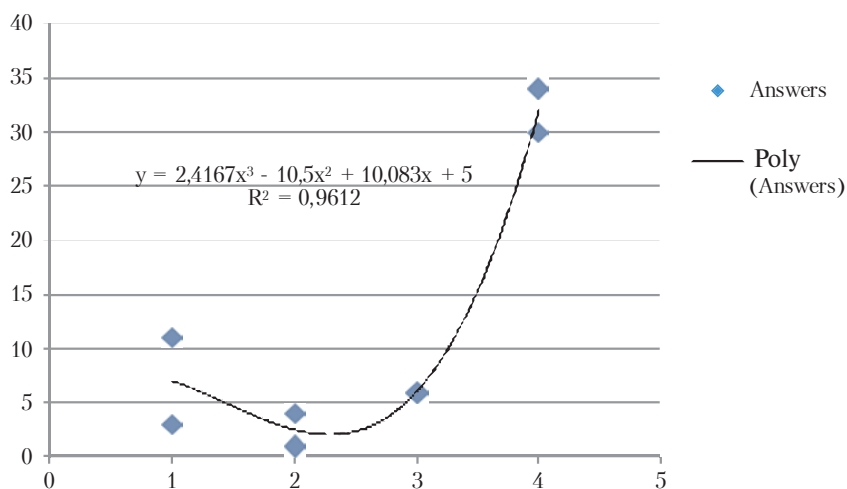


Source: (Radovic-Markovic et al., 2012b).

Figure 1. Curve estimation for Intention-Success in Serbia

The findings on students perception regarding the most appropriate direction for educational strategies to be developed in order to reach the abovementioned goal, i.e. to encourage creativity and entrepreneurial abilities of students, show that new educational strategies should encourage creative abilities and original thinking, individuality and freedom of learning. It is showed by regression $y = 2,4167x^3 - 10,5x^2 + 10,083x + 5$ (Figure 2).

Our research shows that education based on freedom of learning and teaching helps to foster creativity. Accordingly, the existing education system should be redefined as well as educational programs for entrepreneurship (Radovic-Markovic, 2012).



Source: Radovic Markovic (2012d).

Figure 2. In what direction educational strategies should be developed?

Conclusion. New learning strategies and models will play an essential role in future and encourage many of those who did not have enough ideas, courage or certain skills to follow an entrepreneurship path. In line with this, a creative education and training should help people raise their creativity, logical thinking and entrepreneurial activity (Radovic-Markovic, 2012a). Besides, this approach best reflects the autonomy of an individual. In addition, in this way many people will acquire business freedom and personal satisfaction through the realization of their individual potentials developed through all the phases of their education. Namely, fostering creativity in an individual also creates a clear vision of his/her future business he/she is expected to enter with less risk, which in turn would further result in a longer life cycle of a newly-established firm.

Furthmore, we should not forget the role of new technologies. New technologies allow for exploration of new areas of learning and thinking. They could support creative learning and innovative teaching and foster individual potential. For these reasons, Serbia should use all the possibilities that new technologies offer in education. First of all, it is necessary to promote e-learning among students and teachers in Serbia.

Finally, we can conclude that education should create new models of learning geared to the students' needs and new knowledge that will be synergic with the demand at local, regional and global labour markets. More than ever before we need knowledge that can be applicable to the 21st century economy, which is a knowledge-based economy.

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