

# **The influence of educating critical thinking skills on strengthening the entrepreneurial personality. Case Study: University of Oradea students**

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**Abstract.** The practical objectives of the thematic researches related to the entrepreneurial personality aim to identify as precisely as possible those personality elements that correlate with the increased entrepreneurial performances. We consider that these implications should be interpreted in correlation with the new advances made by social capital theories and taking into account the current debates on the knowledge-based economy.

In Romania, the study of entrepreneurial behaviour involves taking into account specific aspects. Perceptions of entrepreneurship itself are constantly evolving. Data obtained from our research confirm the need to support the entrepreneurial phenomenon through coherent measures in education and appropriate public policy initiatives.

## **1. Introduction**

The evolutions registered in the economic sphere in Romania show the increased importance of the analyses regarding the behavioural economy and the entrepreneurial attitudes. The entrepreneur is always considered a dynamic figure and a man of his time. He is reacting opportunistically these days and is as attentive as possible to the new opportunities offered with the changes that the information society determines in the daily life plan. Information, as a strong resource of the modern economy, becomes a privileged entrepreneurial resource. On this basis, the nature of the entrepreneurial activity is constrained to significant changes. Entrepreneurial success is no longer a problem of balancing a review, a matter of pure financial profit, so the entrepreneur can no longer be a mere "hunter" of profitable opportunities.

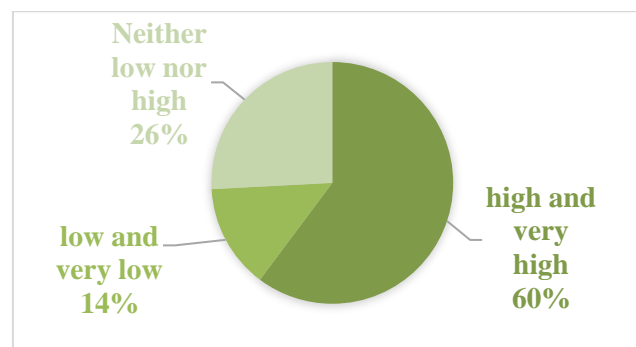
We can state that, in the modern competitive context, the entrepreneur cannot simplistically speculate opportunities, but must be able to identify needs that the market has not confirmed. Critical thinking skills allow entrepreneurs to recognize economic scenarios with the best chance of accomplishment. In addition, critical thinking will ensure a realistic insertion of one's own entrepreneurial actions within the wider framework of the changes that the information society brings. It is assumed that an increased level of critical thinking skills would be an important component of the entrepreneurial personality - even if the modern entrepreneur must be willing to take risks. Going through a higher education cycle is very likely a factor favouring the development of critical thinking skills. We aimed a preliminary investigation of the perception of students with entrepreneurial intentions on the usefulness of the process of developing critical thinking through education. The students who took courses in Critical Thinking in the educational plan were the main topic of our study.

## 2. Material and methods

The research was carried out by applying online anonymous questionnaires. The target group consists of 759 students, final year of study, from all the Faculties (engineering sciences, social sciences art and humanities) who answered questions during period 2017-2019. The questionnaire aimed to evaluate the extent to which students are aware of the skills acquired at the end of the studies. The main research questions refer to analysing why certain students seek to identify as precisely as possible those personality elements that correlate with the increased entrepreneurial performances in our study: critical thinking, innovation, ability to formulate and identify new ideas and solutions. (Some of our research questions: (1) How do you evaluate your own level of skills and abilities (creativity and innovation) acquired after completing the study program? Question focuses on assessing creativity and innovation dimension in correlation with study program and teaching style; (2) How do you evaluate your own level of acquired skills (critical thinking) after completing the study program? Why is important to be aware of certain abilities like critical thinking and how does it help this characteristic to succeed in career.

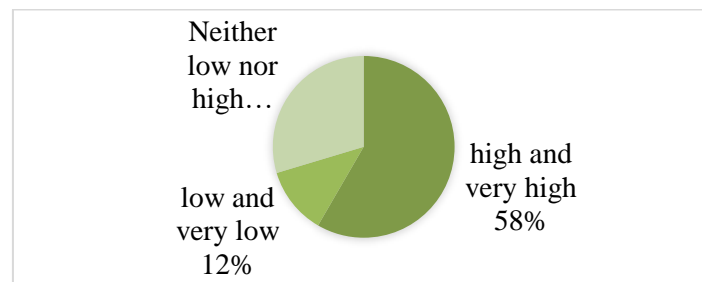
Data were collected from the Satisfaction questionnaire applied every year for topics in which is important to improve quality, such as: educational programs, teaching style, level of satisfaction with services offered by university and others.

## 3. Results



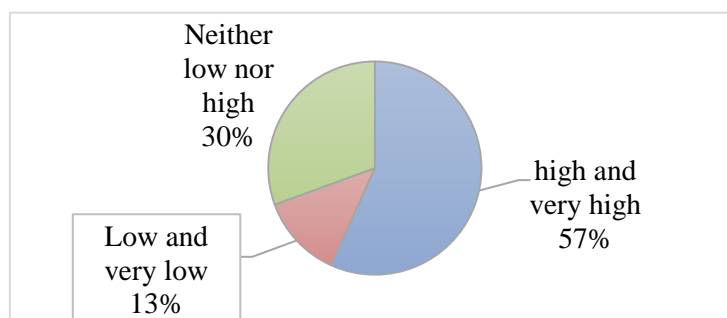
**Figure 1:** Own level of abilities acquired after completing the study program: Creativity and innovation, 2017-2019 (source: own calculation)

It can be observed (Fig. 1) that a significant majority (60%) of the surveyed subjects appreciate that graduating a university study program contributes (at a high and very high level) to the acquisition of creative and innovative skills. The proportion of respondents who are not satisfied with the institutional support for creative skills development (14%) worth a separate analysis - the motivation of this type of response should be detailed. As a general consideration - we advance the hypothesis that the turning of the university education from the new university centres towards "skills training" (requirement according to the current Law of education) creates frustration among the students with increased research potential - they consider the "applicative turns" as forms of trivialization of academic discourse.



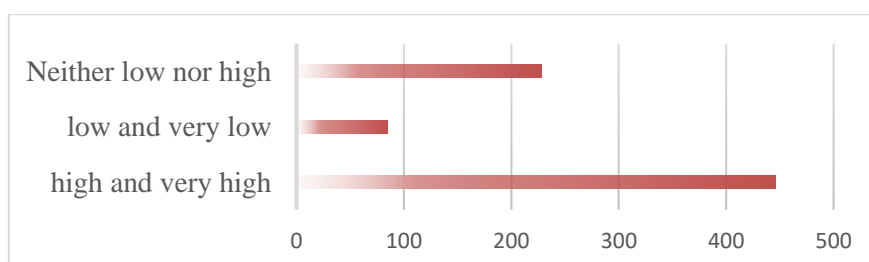
**Figure 2.** Own level of abilities acquired after completing the study program: Ability to formulate new ideas and solutions, 2017-2019 (source: own calculation).

Responses follow closely the results obtained in the previous item, securing the obtained data under statistical report. We note that the majority group reconfirms its perception - 58% of the subjects being of the opinion that the university education contributes (to a large and very large extent) to the increase of the personal capacities to formulate new ideas and solutions. The increase from 26% to 30% of the undecided group can be interpreted in relation to the uncertainty expressed by the students with weaker results than their ability to solve difficult problems (at this item the specific question "the ability to offer new ideas and solutions").



**Figure 3.** Ability to identify new opportunities as a result, 2017-2019 (source: own calculation).

Education is perceived as an important facilitating element in the process of identifying opportunities. The fact that 57% of the subjects (Fig.3) consider education to be very important reflects the general character of the association between education and success (career success). At the level of the common mentality, education (associated with the ability to think and act on its own) enjoys presumptive prestige. Subjective assessment remains problematic as we have not measured the actual value of the subjects' skills and abilities, but their conviction that graduating a higher education program contributes to the development of skills for identifying market opportunities remains significant.



**Figure 4.** Personal capacity, critical thinking perceived by respondents, 2017-2019 (source: own calculation)

The fact that 446 (approx.59%) of students (Fig.4) consider that the programs of studies followed have contributed significantly to the increase of the personal capacities of critical thinking shows the positive perception that the thematic courses have among the students.

#### 4. Discussion

Entrepreneurial activity is today a scientific research topic. When the possibility of a new science is invoked - *entrepreneurology* [1] older economic theories can be reassessed based on this new perspective. Some redoubtable hypotheses can be arguments for considering the possibility of analysing an entrepreneurial personality. Gartner (1990) lists eight themes that support the conceptual framework meant to identify the nature of the entrepreneurial spirit: "entrepreneur, innovation, organization creation, value creation, profit or non-profit, growth, uniqueness, and owner-manager". In the same order of Morisson's reasoning [2], it focuses on the social, psychological and cultural dimensions of the entrepreneurial personality, appreciating that "the entrepreneurial process has its basis in person and intuition, society and culture." [3]. As can be seen, approaches appeal to concepts from different areas of knowledge. The entrepreneurial resource, more than any other resource of the contemporary knowledge-based economy, implies human quality: the entrepreneur is not a mere creator of products or services, he proposes simultaneously a social model and a conception of social relations within a society. The practical objectives of the thematic researches related to the entrepreneurial personality aim to identify as precisely as possible those personality elements that correlate with the increased entrepreneurial performances. We consider that these implications should be interpreted in correlation with the progress of social capital theories and taking into account the European debates on the knowledge-based economy. Entrepreneurial personality has been linked, by some studies, to a specific form of motivation. The incentives that motivate individuals were also analysed by Cialdini, who validated the so-called "principles of influence" [4]. Entrepreneurial motivation is, as can be seen intuitively, a necessary but not sufficient condition for performance. Our hypothesis points to the fact that the presence of increased critical thinking skills is a key component of the entrepreneurial personality. The concept of "critical thinking" does not yet have the precision pursued by the sciences. We can speak in a generic way about critical thinking as being - that way of thinking - about any topic, content or problem - in which the thinker improves the quality of his / her analysis by lucidly examining, evaluating and reconstructing the subject concerned by the thought process. There are several formal definitions of the concept: critical thinking is according to the National Council for Excellence in Critical Thinking (1987) "the disciplined process of the intellect to conceptualize, apply, analyse, synthesize and evaluate, in an active and conscious way, the information obtained or generated from observation, experience, meditation, communication ". [5]

There are certainly, reason to believe that the critical thinking process includes a broader set of skills such as:

- solving problems: finding solutions requires creativity, identifying the paths that have been overlooked;
- reframing: changing our interpretation / perception of an event, situation, behavior, person or object;
- mind mapping: it allows the generation of ideas in an associative, organic way, starting with a key concept starting from which other possible connections are found later;
- insight: an intuitive "break through" of the problem, finding solutions without going through the classical stages of the problem solving process.

These skills work dynamically on a background of *entrepreneurial opportunism*. The main qualities that facilitate the rapid identification of opportunities (according to Phalla Mot with reference to Ardichvili and Cardozo, 2000) are: prior knowledge, entrepreneurial vigilance, social network and personality traits. The four interact and can obviously face certain limitations in context. At the entrepreneurial personality level, identifying the opportunity is that ability to perceive a situation in which goods, ideas can be introduced in the social circuit to form new meanings, to solve or generate new needs, to diminish the uncertainties. Identifying entrepreneurial opportunities is a process that is

divided into stages: the search for opportunity, the recognition of the opportunity, the evaluation of the opportunity [6]. On a detailed examination of the problem, we find that we have two types of opportunities: *specific opportunities* - open only to innovators, as no one else is able to achieve innovation, respectively broader *contextual opportunities*, because it is based only on seeing an untapped market using generally available information [7].

The identification of opportunities within the process of conducting entrepreneurial activities is, in our opinion, closely linked to the capacity to exploit critical thinking skills. The entrepreneur does not always have more information than others (although this can be useful), but he has the courage to use the information he has creatively using the skills of analysis and synthesis, implicitly critical thinking. The critical thinking with which the entrepreneurial personality operates is specific to the *Thinking System 2* (slow thinking) as described by Kahneman in his work *Fast Thinking, Slow Thinking* [8]. For an entrepreneur to make a decision that best responds to the identified opportunity and, at the same time, keeps the cost / effort ratio in a profitable range - he needs to activate his *Thinking System 2*.

For the time being, there is little concern in order to validate with data the hypothesis of the link between the level of development of critical thinking skills (for example through academic education) and the entrepreneurial personality. Is it slow thinking or not - a real support for what we might call (at first reading) entrepreneurial thinking?

There are (or not) an "entrepreneurial thinking"? In a summary analysis, we can admit that entrepreneurial thinking appears as a functional necessity for any modern economic market. Entrepreneurial activity becomes possible only within a certain type of mentality - of a particular way of thinking. Three of the most frequent functional roles of entrepreneurs are associated with the main schools of thought regarding entrepreneurship:

1. Risk taking: entrepreneurs described by Cantillon or Knight choose to take the associated risks and seek to take advantage of the uncertainty. This simplistic form of initiative characterizes times of instability and their successes can be linked to a set of personal qualities or a contest of circumstances.
2. The appetite for innovation: the entrepreneurs described by Schumpeter and Drucker are quick to generate, disseminate and implement innovative ideas. Entrepreneurial success is determined by the ability of visionary understanding of some advances in science or techniques. This kind of entrepreneurship exploits the practical value of knowledge. "Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for different businesses or services" [9]
3. Seeking Opportunity: Entrepreneurs described by Kirzner identify opportunities and make a profit from them [10]. They speculate market errors and seek to correct them by making a profit from administering these corrections.

A knowledge of one's own social network is beneficial both for finding new opportunities, but also for disseminating new information, according to one's own interests. The more an individual has a denser and diversified social network, the more he is connected with several nodes, and in relation to disseminators of information, the easier he will have access to opportunities. Recognizing the opportunity can be considered the fundamental concern of entrepreneurial thinking.

The entrepreneurial personality implies the assembly of a complex of attributes whose analysis requires a broader discussion. In any case, the operationalization of most of these attributes is directly related to the capacity for critical thinking precisely because critical thinking does not operate in a viran terrain. It strongly depends on a number of elements such as: previous and continuous knowledge (to know the field and the entrepreneurial environment), the location as an important node in a diversified social network (to have multiple and relevant connections), the existence of some personality traits useful to this activities (optimism, motivation, analytical spirit), accepting their own vulnerabilities, a native curiosity, resilience and antifragility [11], observational spirit, initiative spirit, offensive character, avoiding assumptions and looking for facts, ability to form a network of sources and ability to confront sources (which gives credibility to information), anticipation of new events and elements that complement other topics, sense of duty (ability to meet deadlines for teaching materials), "sense of

urgency" (speed), "sense of knowledge" (flair) ), persuasion (mastery of influence techniques essence), a certain dose of skepticism (it should not take anything good), tenacity, memory, presence of spirit, common sense (necessary to select the most significant details of an event), ability to change registers (to avoid disagreements), availability and ability to listen. Also, the ability to reorganize the details (on the grounds that beautiful expression will not compensate for the weak structure), emotional distancing, accuracy (accuracy), brevity (without unnecessary elements) and clarity, a developed sense of comparisons in the subjects can appear as very necessary complex, appropriate education, ability to synthesize.

Without much psychologizing, the analysis can admit that a good empirical knowledge of social reactions and *an above-average empathic capacity can turn into arguments for entrepreneurial success*. The successful entrepreneur is an informed man, he maintains complex social networks - but he can do so only on the basis of a (SQ) "social intelligence" [12] well practiced. Of course this profile list is not exhaustive - it can be reconsidered or completed. Precisely by assuming these limits, it confirms the difficulties raised by a research (measurement) of how to use critical thinking in entrepreneurial activities. Quite modest in terms of methodological report, our hypotheses aim to test preliminary:

1. Perception on critical thinking skills in relation to one's own perception of opportunities to identify opportunities.
2. Perception of the role played by the university education on creative competences and innovation skills, respectively its relation to the perception of the abilities (acquired after graduating the university welding programs) of identifying opportunities.

Naturally, the research will continue by identifying the existence of the availability of subjects to start up a business in the period immediately following obtaining the graduation diploma. In the current phase, the investigation is limited to the subjective perception of the group regarding skills (the defining "entrepreneurial personality") that could be useful for a future involvement in the entrepreneurial activity.

## 5. Conclusion.

(The key role of slow thinking in the process of forming the entrepreneurial personality)

In the context of the *knowledge-based economy* [13] the effort of theoretical interpretation of the concept "entrepreneurial personality" [14] it takes place in direct connection with the changes that have occurred in the plane of economic production and which involves massively technologies whose productivity depends essentially on the level of knowledge. The evident orientation of the modern economy towards innovation and technological progress entitles us to talk about an entrepreneurial society. According to Frank Knight an entrepreneur is a man who believes in his own chance, has certain skills and besides, he is chancy, the economists of the Austrian school (I Kirzner) argue that, for the success of the business, a certain personality type or a skill is not necessary but rather a special kind of knowledge of the present, a kind of insight: "Entrepreneurial knowledge can be described as the highest category of knowledge" [15]. Contextualizing the statement we can admit that entrepreneurship involves skills of critical thinking - the mechanism that allows access and knowledge at the highest level.

The expansion of the new technologies (and the improvement of the management methods and techniques) causes radical changes in the plan of the relations of the entrepreneurial activity with the innovation and, especially with the scientific knowledge. It is vital that the entrepreneur can evaluate the scenarios and make the entrepreneurial decisions on a solid professional basis. The control of a business that involves production technologies or advanced technical knowledge (which the entrepreneur knows) is relative. The stress, the professional obligations, the pressures of a social nature and the accelerated pace of changes in the business environment require the entrepreneur more and more qualities: intelligence and emotional stability, openness and innovative spirit. Entrepreneurial behaviour changes and these changes can be related to the profile of a certain personality type. Investigating the personality of the entrepreneur is an important part of the behavioural economics concerns.

Participation in critical thinking courses appears in the students' perception plan as a factor favoring their own ability to identify market opportunities and, in general, as a contributing factor to

entrepreneurial success. We have every reason to believe that the introduction of critical thinking courses in entrepreneurial education studies is a significant plus for the accentuated process of entrepreneurial personality.

Our study reconfirms the increased interest of the subjects for the applied seminars of critical thinking and shows that there is an increased perception of the needs of creativity and innovative decision in the entrepreneurial activities. This research comes as a complement to the studies undertaken by authors in the field of entrepreneurship [16] [17] as well as in the analysis of students' needs for entrepreneurial skills [18].

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