# ACQUISITION OF ENTREPRENEURIAL SKILLS AND COMPETENCES: CURRICULUM DEVELOPMENT AND EVALUATION FOR HIGHER EDUCATION

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## ABSTRACT

*Entrepreneurship higher education is aimed both at providing the students with knowledge bases and stimulating their entrepreneurial thinking. There is a need to rather develop the students' general cognitions than their personal qualities. This is what forms the specialists who are ready for professional activity. In order to develop the education programs that fit actual economic requirements, the feedback needs to be obtained that includes the students' self-evaluation of their entrepreneurial thinking level basing on the results of higher learning. The participants of the research were 513 fourth-year students in "Economy" and "Management" specialties from 5 universities of Kazan, Cheboksary, Ioshkar-Ola and Elabuga. The reasons for this choice include the following: high level of readiness for labor market; interest to practical tasks; attendance/desire to attend special courses. Through the preliminary questioning, the focus-groups were divided into two main categories: the students that already have practical experience and those ones that do not have the experience of professional activity. The participants were asked to fill in the questionnaires. The survey was carried out in a written form. The main purpose of the questionnaire was to compare the formation level of the qualities that were needed for entrepreneurial thinking among the students with/without practical experience. The working students are critical in relation to educational program and environment of their university as a formative factor of entrepreneurial thinking. More than 50% of the participants who work in their specialty believe that the new subjects need to be introduced into curriculum, 32% out of them combine learning with work and additional courses (trainings, seminars, etc.). Only 23% of the non-working students make similar decision, 54% view their knowledge and skills as sufficient, whereas 23% of the working students view their entrepreneurial thinking level as insufficient for a successful start. In the participants' opinion, education programs that are used in universities where the research was carried out do not meet the students' needs in the formation of entrepreneurial thinking. This point is the necessity to create and introduce a course that would serve as a coaching for the future entrepreneurs. The results of the research can be used by universities that train the specialists in "Economy" and "Management" specialties in order to develop the programs of the students' entrepreneurial thinking formation.*

**Keywords:** Entrepreneurship Education, Higher Education Programs, Entrepreneurial Skills Development, Entrepreneurial Thinking, Entrepreneurial Environment.

## INTRODUCTION

Entrepreneurship education is usually divided into higher education and educational courses (Piperopoulos & Dimov, 2015). First of all, both higher education and courses are aimed at providing the students with certain knowledge bases and stimulating their entrepreneurial thinking. Consequently, both their general cognitions in this field and their personal qualities need to be developed that ensure the possibility to apply theory in practice (Gibb et al., 2012).

Educational programs for entrepreneurs positively influence the students who have previously demonstrated a week tendency towards entrepreneurial activity or had no appropriate knowledge bases (Gibb et al., 2012).

Higher education is capable to fundamentally focus upon the formation of competent entrepreneurs who are ready for practical actions. It can involve three main components: appropriate educational programs; appropriate teaching style; the instruments to create entrepreneurial environment on the basis of university (Mitchelmore & Rowley, 2010).

In the USA, the entrepreneurial environment is commonly created through the use or role-based games within student groups. The students' qualities that are necessary for the formation and development of entrepreneurial thinking are formed through the search for the decisions in a specific situations basing on specific cases and examples (Rauch & Hulsink, 2015).

By virtue of a big amount of start-ups, China faced an emerging tendency of *"live education"* in business-schools. The final-year students are invited to create their trial business project that subsequently can be realized in a form of a start-up. This motivates for both searching for the effective ideas and learning, through pointing to the specific opportunities in the field (Lin & Xu, 2017).

A relatively low level of entrepreneurship education in Nigeria is associated with the absence of entrepreneurial environment in universities. Due to the uncompetitive salary level, there is no opportunity to attract field-specific specialists-practitioners to the creation and participation in the courses. At the same time, such specialists often create their own education programs, such as business trainings, seminars, etc. (Maina, 2014).

A positive example of the involvement of specialists-practitioners can be found in the European universities. Besides, here, entrepreneurship education takes place within the courses that are not directly associated with it. A bright example is Instituto Marangoni that has its faculties in Milan, London, Paris, Miami and Florence. Initially, it was founded as a higher education institution for fashion designers, painters and sculptors. The program for each specialty necessarily included management course that was aimed at the formation of entrepreneurial thinking (Wach, 2014).

Within the post-Soviet space, there is the dynamics that is close to the Nigerian experience. Successful specialists do not strive to work in the state funded universities and prefer private education institutions. Or, they create their own courses and trainings (Rubin, 2015).

There is an important regularity within the system of entrepreneurship education. Its quality directly depends on a country's level of economic development. The most positive dynamics of the development and search for the new approaches to the higher entrepreneurship education is demonstrated by the countries with high level of economic development. Developing countries usually borrow education models from the more developed countries. Due

to a low education level, the less developed countries show a complete absence of interest to the entrepreneurship education (Lackéus & Middleton, 2015).

In relation to the Russian practice, mainly the students of the master's degree are trained for entrepreneurship activity. The Russian universities pay significantly less attention to the formation of the entrepreneurial skills among the students of bachelor's degree (O'Leary, 2017). This can be explained by the lack of hours for the contact work with students and with the difficulties in interpretation of competence formulations within the Federal State Education Standards (FSES) in the specialties that are associated with managerial activity, such as *"Economy"* and *"Management"*. For example, the ability to organize the performance of a small group which is formed for the realization of a specific economic project can be interpreted as an acquisition of the entrepreneurial thinking skills. But, at the same time, the economic components of the projects can be emphasized. Both aspects are important for the essence of the education program. But, considering the lack of the knowledge bases, namely the entrepreneurship aspects among the students, the first interpretation seems more actual. Besides, the bachelors need to enhance their entrepreneurial skills, because further education on the following levels of higher education can be continued in various education directions. The choice of a specific direction in the interests of a career plan will be more successful if the students are better trained in the field of entrepreneurial thinking.

The formation of competent and competitive specialists in the labor market is a key task for the economically developed countries. The quality of education in this direction can help to enhance the economic position of the developing countries as well (Bell, 2016). That is why, the formation of the competent specialists is an important issue. This is possible only through the formation of entrepreneurial thinking.

Is comprises the following personal qualities: motivation; proactive attitude, responsibility; creativity; sociability; tolerance to stress (Sousa & Almeida, 2014).

The development of these qualities among the students within higher education entrepreneurship course must form the specialists who are ready for professional activity. However, the theoretical part of education is not capable of this. That is why, the students need new approaches in education.

## METHODOLOGY

513 fourth-year students in *"Economy"* and *"Management"* specialties from 5 universities of Kazan, Cheboksary, Ioshkar-Ola and Elabuga were selected for the research (Table 1). The reasons for this choice include the following: their high readiness for labor market; interest to practical courses; attendance or desire to attend special courses; half-time work in their specialty.

| **Table 1**<br>**THE PARTICIPANTS OF THE SURVEY** | | |
|---|---|---|
| **The name of the education institution** | **Total number of the surveyed students** | **The number of the surveyed students (% of the total number)** |
| Kazan Institute of Entrepreneurship and Law (bachelor's degree in "*Management"* specialty). | 98 | 0.191 |
| Elabuga Institute of Kazan Federal University (bachelor's degree in *"Economics"* and *"Management"* specialties). | 95 | 0.1852 |
| Cheboksary Institute (branch) of Moscow University of Humanities and Economics (bachelor's degree in *"Economics"* and *"Management"* specialties). | 101 | 0.1969 |
| The branch of the Russian State Social University in Cheboksary (bachelor's degree in *"Economics"* specialty). | 81 | 0.1579 |
| Mari State University (bachelor's degree in *"Economics"* and *"Management"* specialties). | 138 | 0.269 |

The statistical error of the research is 2.6%.

Through the preliminary questioning on the stage of focus-group formation, the students were divided into two main categories: the students with or without practical professional experience (Table 2). The first group includes the students with professional experience in the context of their education. This allows them to get acquainted with practical aspects of a modern entrepreneur's activity and to borrow this experience, or, in other words, to master necessary competencies.

| **Table 2**<br>**FOCUS-GROUPS OF THE STUDENTS ACCORDING TO THEIR EXPERIENCE OF PRACTICAL WORK** | | |
|---|---|---|
| | **The students with practical experience** | **The students without practical experience** |
| Total number of the surveyed students | 184 | 329 |
| The percentage of the students with or without practical experience | 0.3587 | 0.6413 |

The participants were offered to fill in the questionnaires. The survey was carried out in a written form. Prior to the research, the permit for the survey and further use of the data was obtained from the administration of universities. The survey was conducted by the student groups' tutors in their universities during the classes that were devoted to their professional orientation.

The main aim of the questionnaire was to compare the formation levels of the qualities that were necessary for the entrepreneurial thinking among the students with and without practical experience. Besides, the aim related to the identification of the level of the need for the creation of entrepreneurial environment within universities that taught the students in *"Economics"* and *"Management"* specialties.

The questionnaire consisted of two parts. The first part offered the students to evaluate their qualities that were important for the formation of entrepreneurial thinking. They were asked to evaluate their own qualities by the scale from 1 to 10 (where *"1"* stood for *"I don't possess such quality"*, whereas *"10"* stood for *"This quality is highly developed"*). The aim of the

survey was to motivate the students to reflect upon the necessity of both forming and identifying such traits in themselves (Table 3).

**Table 3**
**QUESTIONNAIRE No 1**

| Quality | Activity | Responsibility | Creativity | Sociability | Motivation | Stress resistance |
|---|---|---|---|---|---|---|
| Scores (from 1 to 10) | | | | | | |

The second part of the questionnaire consisted of the questions that diagnosed the students' perception of the university environment as entrepreneurial. The questionnaire included 5 questions and three alternative answers to each of them (Table 4).

**Table 4**
**QUESTIONNAIRE No 2**

| | A | B | C |
|---|---|---|---|
| Can you characterize the environment of your university as formative of entrepreneurial thinking? | Yes | No | Not sure |
| Does your current education program meet your needs for the formation of entrepreneurial thinking? | Yes | No | Not sure |
| Do you consider the introduction of the new subjects to be necessary for the formation of entrepreneurial thinking? | Yes | No | Not sure |
| Do you attend additional training/courses/seminars for the formation of entrepreneurial thinking? | Yes | No | - |
| Do you consider your current level of entrepreneurial thinking to be sufficient for a successful start in a profession? | Yes | No | Not sure |

4.5% of the sheets that were filled in by the students turned out to be irrelevant. In 3.5% of cases, questionnaires were filled in by under 50%, and 1% of participants returned unfilled sheets.

The main limitation of the research is the impossibility to conduct the program-corrective experiment that would be able to introduce some changes into students' education for a certain time. This is conditioned by the fact that the final-year students have a busy schedule due to the need to prepare their diploma projects and to prepare for the final exams.

At the same time, the survey among junior students will not bring clarity into the necessity to form entrepreneurial thinking. The sample is relevant for the research, because it represents the group of students who prepare to start their career in the specialty that is associated with entrepreneurship.

## RESULTS

The first part of the questionnaire demonstrated that the final-year students whose future work might be associated with entrepreneurship highly evaluated their personal qualities that formed entrepreneurial thinking.

Thus, the average total score of the non-working students' personal qualities equalled 49 points out of 60 possible, whereas among the working students it was 37 (Figure 1).

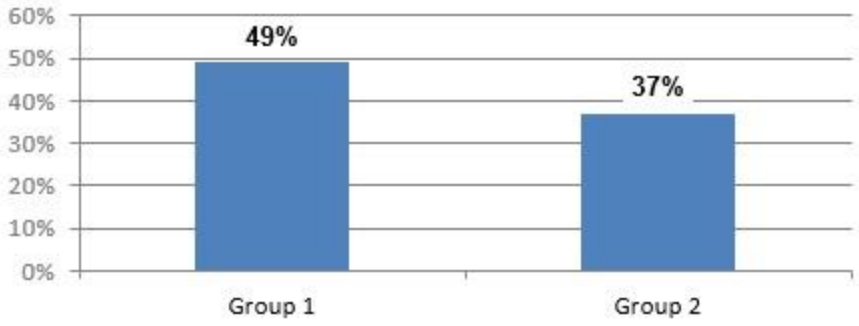


**FIGURE 1**
**THE TOTAL SCORE OF THE PERSONAL QUALITIES IN TWO FOCUS-GROUPS**

However, it is interesting to note that these qualities were higher evaluated by the students who do not have practical experience of work. In this case, we have a classic example of Dunning-Kruger effect, according to which the persons with low level of qualification are not aware of their factual skills and abilities and overestimate them. Whereas highly qualified persons, on the contrary, view themselves as less competent in their field.

At the same time, the following qualities obtained the highest scores among non-working students: proactive attitude, motivation. On the average, these qualities obtained 9 points from the participants of this focus-group (Group 1). The working students view motivation and tolerance to stress as their strong qualities. On the average, these qualities obtained 8 points from the participants of this focus-group (Figure 2).

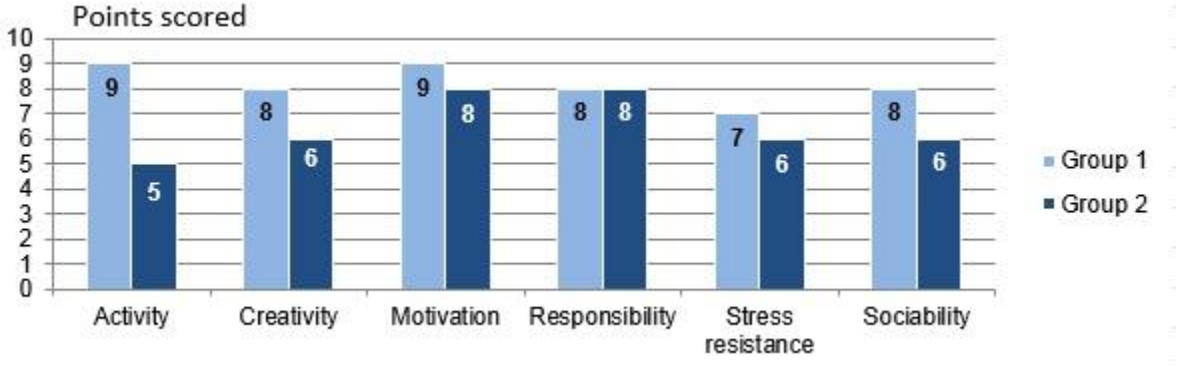


**FIGURE 2**
**THE RESULTS OF THE QUESTIONNAIRE NO 1 IN TWO FOCUS-GROUPS**

The participants of both focus-groups evaluated responsibility in a similar way. This can point to the fact that the need to make the choice of work and the existing work make the students feel responsible for their future.

Working students evaluate their level of tolerance to stress higher than non-working students. First of all, this is associated with emotional burn-out that is often caused by combining work and learning (in fact, this is nervous and physical exhaustion). Besides, they feel themselves as less creative and sociable. This also points to the emotional decline. First of all,

the emotional burn-out is proved by the low activity level among working students. This very aspect obtained the lowest points from them.

Working students give lower points to the knowledge base of university that must form their entrepreneurial thinking (Figure 3).

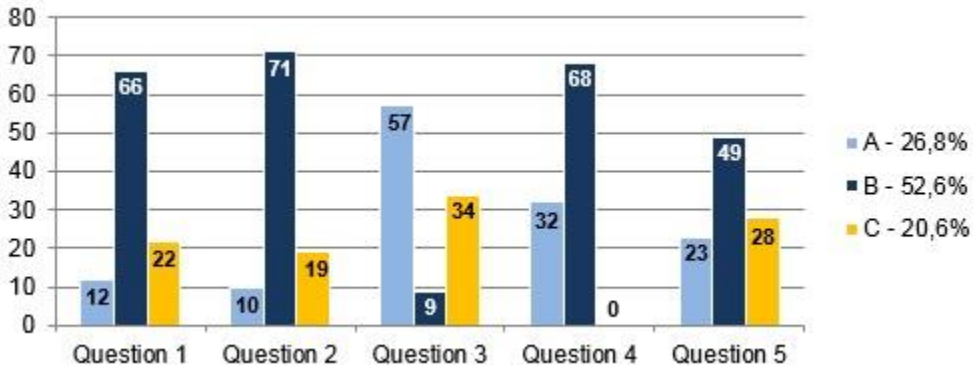


**FIGURE 3**
**THE RESULTS OF THE ANSWERS TO THE QUESTIONNAIRE NO 2 WITHIN THE FOCUS-GROUP OF THE STUDENTS WORKING IN THEIR SPECIALTY (LIGHT BLUE: ANSWER A, DARK BLUE: ANSWER B, YELLOW: ANSWER C)**

In the majority of cases, the students without practical experience were not sure whether the knowledge from the curriculum was sufficient for them (Figure 4).

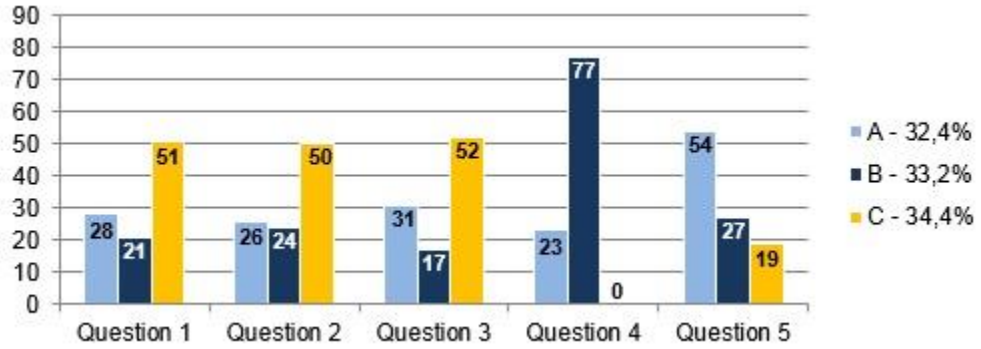


**FIGURE 4**
**THE RESULTS OF THE ANSWERS TO THE QUESTIONNAIRE NO 2 WITHIN THE FOCUS-GROUP OF THE STUDENT WHO DO NOT WORK IN THEIR SPECIALTY (LIGHT BLUE: ANSWER A, DARK BLUE: ANSWER B, YELLOW: ANSWER C)**

The difference between the answers of the two focus-groups is seen even by the unaided eye. First of all, non-working students are critical in relation to the curriculum and education environment of their university that forms their entrepreneurial thinking. In other words, they view the knowledge base and opportunities that are provided by university as insufficient for a successful start in a career.

More than a half of working participants of the survey think that this problem can be solved through the introduction of the new subjects into curriculum.

32% of this group combine their learning with work and additional courses (trainings, seminars, etc.). Only 23% of the final-year non-working students make similar choice.

In this case, again, we see the above-mention Dunning-Kruger effect. 54% of non-working students views their existing knowledge and skills as sufficient for a successful start in a career. Whereas only 23% of working students (more than two times lesser), despite of the existing minimal practical experience, consider their current level of entrepreneurial thinking to be insufficiently developed for a successful moving up the career ladder.

We can point to another important tendency. The students who combine their learning with work choose a specific answer option in more cases. Whereas the students without work experience are inclined to choose *"Not sure"* option. This can be directly associated with the absence of the basic understanding of the skills and knowledge that were provided by university and that they may need in the future.

However, both groups have a rather high percentage of the students who believe that the current program do not meet their needs in the formation of entrepreneurial thinking. This point is to an urgent need to create and introduce an independent course that would serve as a coaching for the future entrepreneurs and provide them with a basic understanding of what they may expect in their future work. This can both prepare the students for a start of their career and warn and defend them against a possible emotional burn-out.

## DISCUSSION

There is an established serious approach to the formation of entrepreneurial thinking within the Western practice. In the opinion of the administration of the numerous education institutions, it is necessary both for the students of field-subject specialties and, for example, for students-engineers, because it creates a systematic approach during elaborating the projects (Fleischmann, 2018).

One of the main qualities that form entrepreneurial thinking is creativity. This very quality allows entrepreneurs to realize and develop their projects, to create the spin-offs for them and to become serial entrepreneurs. This is one of the latest tendencies in this field (Grădinaru et al., 2018).

It is supposed that creative thinking needs to be developed both among the students and education institutions that train specialists in the field of entrepreneurship. Potentially, this implies flexibility in approaching the students' needs, the creation of a favorable entrepreneurial environment and education programs that will bring practical benefit, at least at the initial stage of a career (Audretsch, 2014).

In order to develope personal qualities that form the basis of entrepreneurial thinking, the USA education institutions try to extend the psychology course within entrepreneurship education. It explains the meaning of such notions as motivation, proactive attitude, responsibility and tolerance to stress in a clear way. It is not capable to directly develop a student's personal qualities. However, it explains the mechanism of how these traits originate and function (Wheadon & Duval-Couetil, 2016).

Besides, the private business-schools that teach by MBA system have separate subjects that are introduced into education program and aimed at the formation of the leadership skills, declamatory skills and creative thinking. In sum, these three subjects are responsible for the formation of entrepreneurial thinking among the students (Czaplewski et al., 2015).

In Europe, entrepreneurial thinking is perceived as social technology. Here, it is commonly fixed within sociology course. However, many universities offer a separate special

course (that can be chosen by the students themselves as extra-curricular) of *"Creative economics"* that is also aimed at stimulating the students' qualities that are necessary for entrepreneur (Krueger, 2017).

Florida University and Arizona Polytechnic University researched the formation of such kind of thinking within interdisciplinary courses. The aim was not to emphasize these qualities as the only ones that are needed by entrepreneurs, but to combine a lot of students with different way of thinking into discussion groups. It was found out that students-humanitarians were the quickest to develop such character traits (Neumeyer & McKenna, 2016).

In the Baltic countries, especially Lithuania that currently experiences a boom of start-ups, a separate course is offered within private and state universities that is aimed at helping the students to create their first business. It considers both technical steps and forms motivation and tolerance to stress among the students (Shams, 2016).

In the countries with developing economy, education program is often unsatisfactory for the students and incapable to train qualified specialists for the labor market (Mantulenko et al., 2016). Here, such courses as *"Psychology"*, *"Business psychology"*, *"Economics sociology"*, etc., tell about entrepreneurial thinking. But such subjects are rather descriptive than formative in their character (Chepurenko, 2016).

Within the countries that are not able to ensure an adequate level of entrepreneurial thinking level, the most successful courses within university include short-term programs on business education: trainings, seminars, etc. In the developed countries such courses are usually attended by the persons who do not have entrepreneurship education, whereas in the developing countries they are popular among those ones who have already obtained or obtaining field-subject education in university (Hnátek, 2015).

The simplest and most effective way to solve this problem of the acquisition of entrepreneurial experience can be the introduction of *"live"* projects into education courses within which the final-year students would acquire practical experience in their own projects on the basis of university. In certain sense, it is a genuine entrepreneurial environment that forms entrepreneurial thinking in the most qualitative way (Gibb et al., 2012).

Currently, such approach is mainly offered by the private universities that also use innovative technologies, for example, games-simulators and VR-realities in order to create the students' first business projects (Costin et al., 2018; Safin et al., 2016).

Global problem of entrepreneurship education is the absence of a uniform program of entrepreneurship education on the basis of higher education institutions. Nowadays, such thinking is treated rather than a subject than an object. It is not provided with a due place within education system (Audretsch, 2014). Underestimation of the significance of work with psychological skills of future entrepreneurs generates incompetent specialists who are unable either to start a successful career or to bring new ideas into the economy of their country (Chang & Rieple, 2013). Theoretical significance of the research is based on its potential to deepen, specify and extend the scientific notions of the essence of teaching and methodological support and its role in improving the quality of specialist training.

The evaluation system of the quality of teaching and methodological support of the main higher education programs that was developed can serve as a theoretical basis for further researches of the issues associated with evaluating the quality of specialist training within the system of basic and further professional education (Bochkareva et al., 2018).

Practical value of the research is based on the potential of the approaches to the evaluation of the quality of teaching and methodological support of the main higher education

programs to ensure the improvement of the quality of specialist training. They favor the improvement of the pedagogical activity quality.

Taking into account the availability of modern techniques, ordinary lectures are not sufficient to acquire the knowledge in a specific discipline. Master's degree programs online are an educational product of a new kind. The use of distance learning forms is an instrument that can't be ignored (Askhamov et al., 2016). Moscow Institute of Physics and Technnology offered the first online course for master's degree in the field of technological entrepreneurship. The format of such program allows to acquire a complete set of knowledge on designing, development and launching of high-technology products. An important feature of online master's degree programs is the work with one's own project. This will allow to practically test the knowledge that was acquired (Rusnano, 2018). The students can choose both a project of a company or enterprise where they currently work or offer their own project and elaborate it under the guidance of a program mentor. If the project is absent, it will be offered by a mentor. Being personally guided by a mentor during the whole learning process is extremely important (Falyakhov, 2018). Online master's student in the field of technological entrepreneurship needs to come to Moscow only twice: in order to pass a state exam in the major subject and to defend his master's thesis. It is important to note that online master's degree programs are oriented rather to those people who have already tried their hand at entrepreneurship and to those who already have practical experience of work at the enterprise.

## CONCLUSION

The formation of competent specialists is the main purpose of the universities that train specialists who are oriented towards the development of entrepreneurship in the country. This is possible only through the formation of interdisciplinary methods within business education that allow to effectively develop the students' organizing and managing knowledge and skills. It comprises the following personal qualities: motivation, proactive attitude, responsibility, creativity, sociability, tolerance to stress. Through the preliminary questioning of 513 students, we found out that the final-year students whose future profession was associated with entrepreneurship tended to highly evaluate their personal qualities that formed personal business thinking. The average total score of the personal qualities among non-working students was 49 points, whereas among working students it was 37. Here, we see Dunning-Kruger effect according to which the people with low qualification level are not aware of their factual skills and abilities and overestimate them. More qualified persons, on the contrary, view themselves as less competent in their field.

In comparison to non-working students, working students view their level of tolerance to stress as lower. First of all, this is associated with emotional burn-out that is often caused by combination of learning and work (in fact, this is nervous and physical exhaustion). They also feel themselves as less creative and sociable. This also points to a psychological decline. First of all, emotional burnout is proved by a low activity level among working students.

The working students are more critical in relation towards education program and environment of their university that forms entrepreneurial thinking. In other words, they view the knowledge basis and opportunities that are provided by university as insufficient for a successful start in a career. More than a half of the students who work in their specialty think that this problem can be solved through the introduction of the new subjects into curriculum, 32% of them combine learning with work and additional courses (trainings, seminars, etc.). Whereas, only 23% of the final-year non-working students make similar decision.

Here, the above mentioned Dunning-Kruger effect is evident: 54% of non-working students view their current knowledge and skills as sufficient for a successful start in the career. And only 23% think that their current level of entrepreneurial thinking is not sufficiently developed for a successful moving up the career ladder.

However, both groups include a lot of the students who think that the current program doesn't meet their needs in the formation of entrepreneurial thinking. This point is to the need to create and introduce an independent course that would serve as a coaching for the future workers and provide them with basic understanding of what they might expect in their practical work.

The results of the research can be used by the universities that provide education in the field of *"Economics"* and *"Management"* in order to form entrepreneurial thinking among the students. The creation of favorable conditions for the formation of entrepreneurial environment and thinking can be one of possible directions of further researches.

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