

# ANALYSIS OF EDUCATIONAL NEEDS OF THE STUDENTS

PROJECT

# FIND YOUR INNER INVENTOR



Co-funded by the  
Erasmus+ Programme  
of the European Union





## PROJECT DETAILS

Project Title: Find Your Inner Inventor

Project Acronym: FYII

Project Number: 2016-1-CZ01-KA202-024054



UNIVERSITY OF ICELAND  
SCHOOL OF EDUCATION



University  
of Bielsko-Biala



# FUNDAMENTAL BACKGROUND

## Fundamental starting points for teaching business (entrepreneurship) and enterprise at secondary schools

Terminological definition of teaching business and enterprise (entrepreneurship)

Garavan and O’Cinneide<sup>1</sup> distinguish between „entrepreneurship education“ or „small business education“ and „enterprising education“. The goal of entrepreneurship education is to develop entrepreneurial individuals and to impart an attitude towards an individual behavior with the use of appropriate learning processes. The goal of entrepreneurship education is to directly support entrepreneurship (including entrepreneurship).

According to various surveys, most business programs and courses are focused on business in terms of setting up and running the business.<sup>2</sup> However, these courses are usually based on education about entrepreneurship rather than educating for entrepreneurship. With exception they focus on the development of skills, attributes, and manner of behavior associated with business. Therefore, business education is often not perceived in a broader sense as the development of entrepreneurial behavior and does not take into account the fact that entrepreneurial behavior can take place in variety of environments, contexts, organizations and positions.

It is therefore possible to distinguish an entrepreneurial person and an enterprising person. An enterprising individual is creative, innovative, inspires others, and is able to do things differently from others. The entrepreneurial person is very similar to the enterprising one, however the entrepreneurial person thinks about the running of the business<sup>3</sup>.

### Approach towards the business education

Business education has been and is still dominated by the so-called procedural approach based on the idea of business as a linear process. The teaching usually takes place gradually from the identification of the opportunity through the development of the concept and the acquisition of resources to the implementation of the opportunity and the exit. According to this concept of teaching, one can well plan and predict the business. Recently, however, there is a growing interest in a creative approach. Entrepreneurship, according to the proponents of this approach, can no longer be taught as the linear process, but as a method, a way of thinking and acting under conditions of uncertainty<sup>4</sup>.

Significant elements of business education, which should be different from the traditional teaching practices, are accurately summarized by Gibb<sup>5</sup>:

- learning as a social and developmental process – business education should be understood as a social and developmental process that takes place through the exchange and sharing of knowledge in the interaction with different stakeholders;

- the process should lead to the interdisciplinary knowledge and functional approach;
- supporting and developing the ability to learn from many diverse sources;
- using of such pedagogical tools that amplify personal initiative;
- inclusion of feelings, motives and motivations into the learning process, interaction between cognitive, affective and conotative components.

New forms of learning are often named differently, e.g. active learning, self-directed learning, student-oriented education, humanistic education, progressive education. Their common feature is an effort to increase student participation<sup>6</sup>.

### Goals of the entrepreneurship and enterprise education

The objectives of teaching entrepreneurship and enterprise depend on the individual concepts of business (entrepreneurial) education. Thus, the goal could be the development of actions aimed to establish a new enterprise (whether alone or in a cooperation with other people) or in a broader concept, the development of entrepreneurial actions. Entrepreneurial behavior may relate to an individual, group, organization, or society and need not be of a commercial aspect. According to Gibb<sup>7</sup>, there are personal features associated with enterprising behavior, such as:

- initiative
- perseverance
- adoption of an adequate level of risk
- flexibility
- creativity
- autonomy
- need for performance
- imagination
- internal controls
- leadership
- diligence

According to Neck, Greene and Brush<sup>8</sup> during the teaching of enterprise as a method, not as a process, must be covered the five basic areas that they describe as practices. It is playing, empathy, creation, experimentation and reflection. Playing refers to the development of free thinking and imagination, allowing to see the wealth of choices, and the world of opportunities. Empathy can be perceived as an understanding of feelings, emotions, motives, conceptions and expectations of others. The tool for developing empathy in connection to enterprise and creativity is so-called design thinking. Creation requires total openness

to the world, and it relates to creative abilities to formulate and find opportunities and solve problems. Experimentation can be described as the act of trying new things, learning from these experiments and transferring the knowledge into further attempts. Reflection helps to find the meaning of the previous activities (playing, empathy, creating and experimentation).

The challenge of the entrepreneurial education is to develop the potential for creating new opportunities, managing the uncertainty and the complexity of today's world. The entrepreneurial education cannot be limited only to transferring the knowledge how to set up and manage a business, but it must focus on identifying and using the opportunities and developing a business-minded way of thinking.

## Teaching of the entrepreneurship and enterprise at the secondary schools in the Czech Republic

Teaching of the entrepreneurship and enterprise is regulated by the so-called Educational Framework Programs. During ones four-year grammar schools and at a higher grades of multi-year grammar schools, the pupils should acquire competences in entrepreneurship<sup>9</sup>, which is defined in a broader sense in six points (e.g. proactivity, purposefulness, taking advantage of opportunities), and in one narrower sense (to assess the possibility of implementing a business plan).

The issue of enterprise is further modified in the educational area "Man and the World of the Work", especially in the area of Market Economy. This area leads more up to economics and entrepreneurship than into key competences towards (enterprise) entrepreneurship.

In the case of secondary vocational schools, educational framework programs are developed for individual fields. One of the key competences in these programs is a competence to employment and entrepreneurial activities. This competence

focuses primarily on responsible building of a professional orientation and an orientation to the labor market, and at one point to understand the nature and principles of business. The focus of teaching entrepreneurship and enterprise varies by subject area.

In the evaluation of the current state, a number of critical responses can be found, for example:

- Entrepreneurial competencies are not sufficiently developed within schools, but they can be meaningfully developed in a number of disciplines and subjects, from mathematics to music and visual arts. However, a good form of the entrepreneurship education and the acquisition of entrepreneurial skills, to which schools and educators are often not adapted yet, is required<sup>10</sup>.
- In the transition into the training programs of individual secondary vocational schools, the sense of entrepreneurship completely disappears. In this case, the introduction of entrepreneurship in the broader sense, depends on the initiative of school management<sup>11</sup>.

Thus, teaching of entrepreneurship and enterprise should come from the educational curricula educational framework programs and schools should base their own, so-called school (educational programs) on it. Implementation of these programs in practice can impinge on certain barriers and obstacles. One way to effectively overcome these barriers is to develop appropriate methodological materials and corresponding courses.

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<sup>1</sup> GARAVAN, T. N. – O' CINNEIDE, B. Entrepreneurship Education and Training Programmes: A Review and Evaluation – Part 1. Journal of European Industrial Training. Vol. 18, No. 8, 1994, pp. 3-12.

<sup>2</sup> KIRBY, D. A. Entrepreneurship education: can business schools meet the challenge? Education + Training, Vol. 46, Issue: 8/9, 2004, pp.510-519

<sup>3</sup> KIRBY, D. A. Entrepreneurship education: can business schools meet the challenge? Education + Training, Vol. 46, Issue: 8/9, 2004, pp.510-519

<sup>4</sup> NECK, H. M., GREENE, P. G. Entrepreneurship education: Known worlds and new frontiers. Journal of Small Business Management, vol. 49, no. 1, 2011, pp. 55-70.

<sup>5</sup> GIBB, A.A. In pursuit of a new 'enterprise' and 'entrepreneurship' paradigm for learning: creative destruction, new values, new ways of doing things and new combinations of knowledge, International Journal of Management Reviews, Vol. 4 No.3, 2002 pp.233-69.

<sup>6</sup> CHRISTENSEN, C. R., GARVIN, D. A., SWEET, A. Education for Judgment. The Artistry of Discussion Leadership. Boston : Harvard Business School Press, 1991. ISBN-10: 0875842550.

<sup>7</sup> GIBB, A.A. In pursuit of a new 'enterprise' and 'entrepreneurship' paradigm for learning: creative destruction, new values, new ways of doing things and new combinations of knowledge, International Journal of Management Reviews, Vol. 4 No.3, 2002, pp.233-69.

<sup>8</sup> Neck, H. M., Greene, P. G., Brush, C. G. Teaching entrepreneurship. A practice-base approach. Cheltenham: Edward Elgar, 2014. ISBN 978 1 78254 069 4.

<sup>9</sup> The definition of key competences is based on the European Competence Reference Framework and builds on the key competences of the FEP Basic Education

<sup>10</sup> NÁRODNÍ KONVENT. Podnikavost a její podpora ve vzdělávání. Shrnutí a doporučení vyplývající z diskuze kulatého stolu Národního konventu o EU konaném dne 30. října 2015. Národní konvent, 2015 [cit. 22. 5. 2017]. Dostupné z: [http://www.spcr.cz/images/EU/Doporuceni\\_podnikavost.pdf](http://www.spcr.cz/images/EU/Doporuceni_podnikavost.pdf), s. 4.

<sup>11</sup> DIVIŠOVÁ, D. Výuka podnikání a podnikavosti na středních školách. VŠP Entrepreneurship Studies, vol. 1, no. 2, pp. 11-42, s. 19.



**SUPPORTING  
ENTREPRENEURSHIP  
WITHIN PUPILS FROM  
HIGH SCHOOL:  
POLISH EXPERIENCE**

The University of Bielsko-Biala was founded in October 2001 as an independent governmental academic institution. Previously, since 1969, it had been a branch of the Technical University of Lodz (Politechnika Łódzka). At the beginning the institution was focused on machine-designing, electrical and textile industries which were typical and characteristic for the region tradition. Within changing economy requirements new field of studies were open including management, humanities, environmental and computer sciences. At present there are about 7000 students studying at five faculties which employ experienced academic staff embracing professors and other experts from the region.

The University of Bielsko-Biala is open to new ideas and opportunities regarding modern educational tools; interdisciplinary fields of studies responding market demands; internationalization; education and research projects as well as third university's mission: including local society and activation all generation into the education process.

University cooperates with regional high schools within visiting professors, professional training courses as well as internships. One of the most significant cooperation was created with II High School named by Adam Asnyk in Bielsko-Biała. The school is well experienced in entrepreneurship supporting their pupils as this is one of the profile and important part of their education path in secondary school. The entrepreneurship activities contain: pupils' start-ups, national projects and competitions; visits in companies as well as experts visits and lectures.

The research made within the project Find your inner inventor, realised within Erasmus+ Strategic Partnerships, was done in High School named by Adam Asnyk in Bielsko-Biała, within the management students from the University of Bielsko-Biala and teachers.

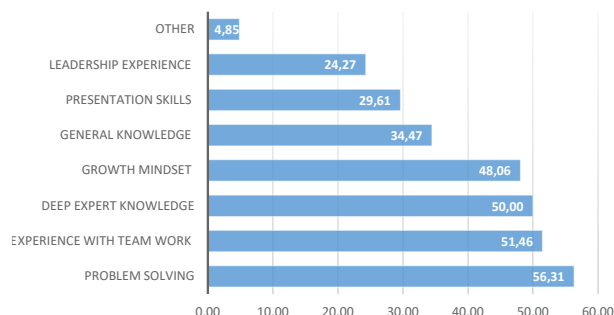
The research was conducted within 206 respondents - including 86 pupils, 110 students and 10 teachers. The research was done between 8th and 22nd of May 2017 within:

- four classes of Adam Asnyk high school;
- students from the area of management,
- teachers from entrepreneurship.

## Educational programme requirements

Question number one – regarding the elements of education which should be required by the pupils during their education (compare with chart number 1) - more than half of the respondents indicated that they should be able to: solve the problems (56.31%) and work in the group (51.46%). Moreover very important for respondents are theoretical knowledge (50%) and intellectual skills (48.6%). Those who indicted „other“ (4.85%) pointed out practical skills and interpersonal communication. Respondents were able to choose three most important elements of their education.

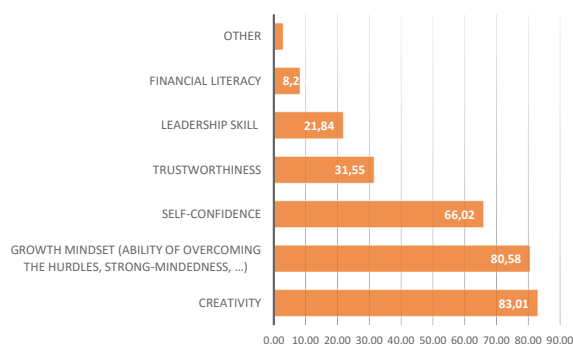
Chart number 1. Elements of education (%)



Source: own research

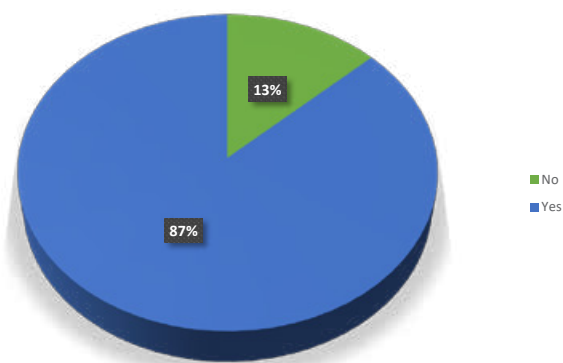
Entrepreneurship can be described as the art of dealing with various lifesituations. Those skills can be learnt and trained. Due to the fact respondents believe that developing entrepreneurship gene in young people requires creativity (83.01% of indications) and the ability to deal with difficult situations (80.58%). Very important is also self-confidence (66.02%). Less meaningful are those competences regarding: reliability (31.55%) and leadership (21.84%). The least important and the smallest number of answers appeared within economic situation - 8.2%.

Chart number 2. Entrepreneurship stimulatory features (%)



Source: own research

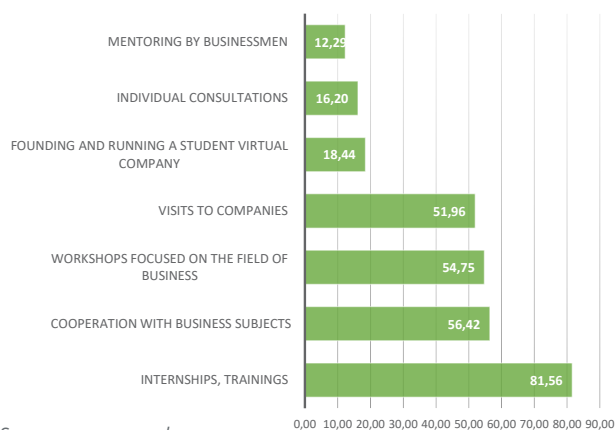
Chart number 3. Entrepreneurship in education programme (%)



Source: own research

Most of the respondents (87%) participated in the research considered that the measures supporting entrepreneurship should be a part of regular lessons (compare with chart number 3). They pointed out that the most important elements in this process should be workshops and practical training (81.56%). More than half of the respondents considered that no less important part are: cooperation with business entities (56.42%), entrepreneurship workshops and related topics (54.75%) as well as visits in companies (51.96%). Respondents confirmed that less important become practical activities related to entrepreneurship development such as: pupils' start-ups, individual consultations, or entrepreneurs patronage (compare with chart number 4).

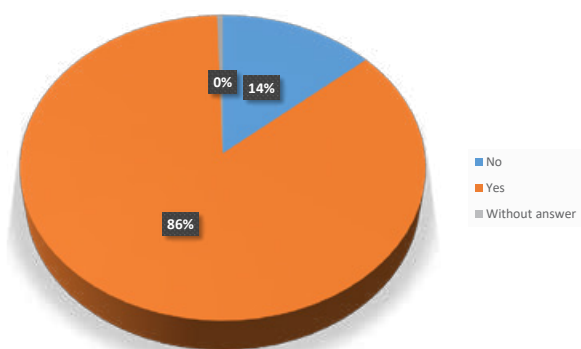
**Chart number 4. Activities, which support entrepreneurship among pupils (%)**



Source: own research

Ethics in business should be the fundamental value of every organization. Ethical behavior is considered in situations when decisions are made and executed in fair, honest, reliable way. Ethical behavior constitutes also personnel values and sense of responsibility, willingness to equal treat others, honesty and engagement. The respondents consider (86%) that ethics is a very important element of conducting business (compare with chart number 5). Moreover respondents stated that ethics should be one of the pillars of a company; helps in building positive image of the company; is basic value in good cooperation and relations with other people - „thank to it we know how to conduct business“ and „ there are rules in every field of the life“.

**Chart number 5. Ethic in business (%)**

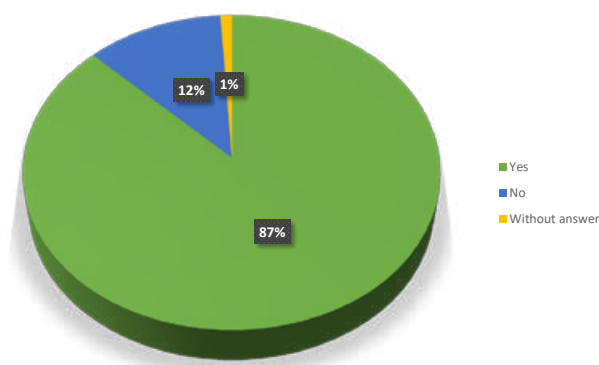


Source: own research

The main purpose of the practice is focused on: education through action, possibility of professional experience acquisition. The task of the practical placement is concentrated on: creating the conditions to intensify the knowledge gained during the lectures and confront them with the economic life practical issues; development of activity, entrepreneurship and teamwork.

Question related to the importance of vocational training and if it should be present in high school - 88% answered „yes“ (compare with chart number 6). According to the respondents' opinion – practical training allows gaining experience - „because it usually gives more than a few years of teaching.“ People who recognized that practice irrelevant have stated that „trainee is treated as the additional cleaning help“.

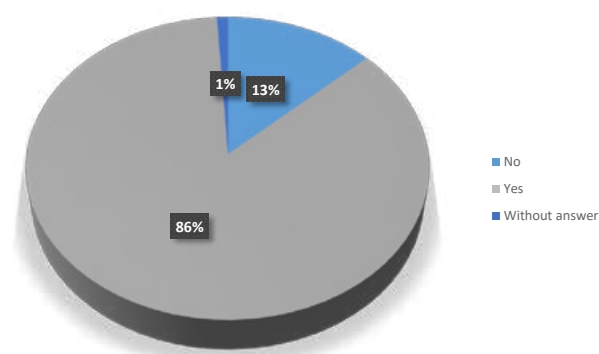
**Chart number 6. Practical placement role (%)**



Source: own research

86% of respondents believe that entrepreneurs participation in lectures has a significant meaning for pupils.

**Chart number 7. Entrepreneurs participation in lectures (%)**

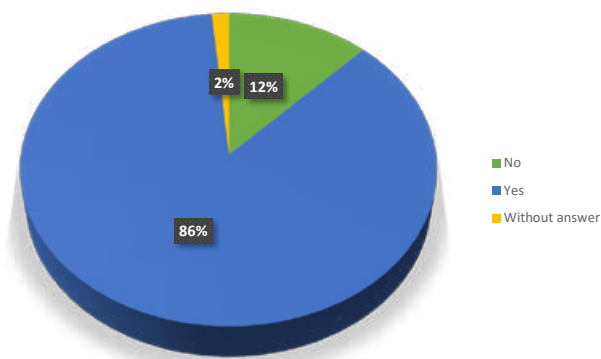


Source: own research

Entrepreneurs participation in lectures allows pupils to understand „how their work looks like in reality“. Entrepreneurs can „explain those issues, which can be predicted in the future“. They transfer practical knowledge during the lesson, indicates on real companies' requirements, provide current information, systems implemented in the company etc. Their participation increases the pupil's practical knowledge.



**Chart number 8. Practical lecture (%)**

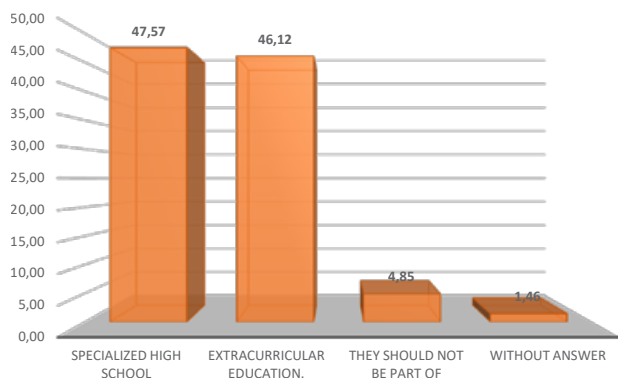


Source: own research

86% of the respondents confirmed that education programme at school should be fulfilled within practical workshops from the area of: finances management, taxes, accounting basic information, languages, preparing CV, business letters. The respondents considered that those topics are very important part of the education path and those classes:

- increase the practical knowledge of pupils,
- prepare them to the labor market requirements, allow them to obtain those qualifications which helps them in finding a job,
- enable them to acquire practical skills helpful during searching the job,
- provide the possibility of meetings with recruitment agencies.

**Chart number 9. Practical modification of education programmes (%)**



Source: own research

The respondents have a divided opinion where the basic information related to tax law, management, gaining funds for entrepreneurship development should be found (compare with chart number 9):

- 47.57% of respondents believe that they should be a part of high school curriculum,
- 46.12% of respondents states that those kind of information should be provided during additional lectures, workshops.

A small percentage of respondents (4.85%) considered that those activities are not needed at all.

**Table 1 Participation in lectures/workshops supporting entrepreneurship**

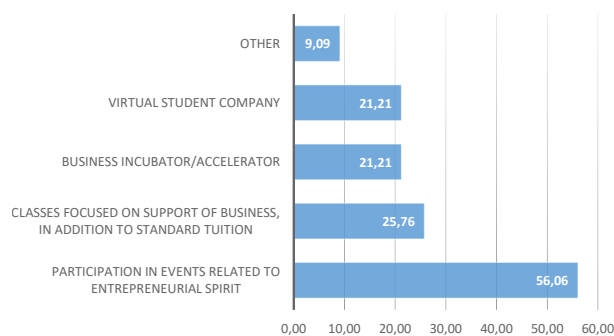
Are you participating in lectures/workshops, organized within your high school, which support the entrepreneurship?

| Answer             | N   | %      |
|--------------------|-----|--------|
| No                 | 134 | 65,05  |
| Yes                | 66  | 32,04  |
| Lack of the answer | 6   | 2,91   |
| Σ                  | 206 | 100,00 |

Source: own research

32% of respondents participate in such additional activities (32%).

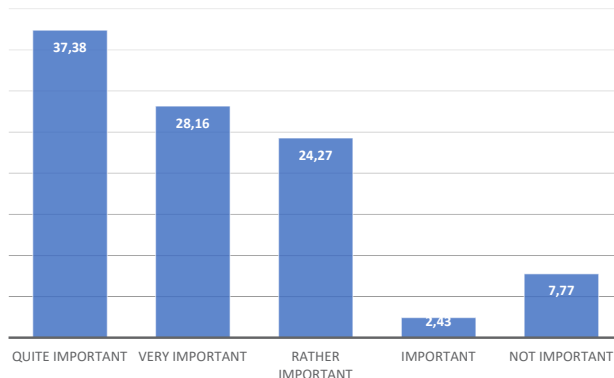
**Chart number 10. Workshops supporting entrepreneurship (%)**



Source: own research

High school pupils - who have the possibility to participate in events supporting entrepreneurship - attend those events organized by entrepreneurs (56.06%) and ¼ take additional lectures from entrepreneurship. Only 21.21% of them practice their competence in business incubators and pupils' start-ups. In the category other respondents mentioned the classes they have in their curriculum, business and entrepreneurship competitions (compare with chart number 10). In the survey, more than 92% of respondents consider that education, in the field of entrepreneurship, at school is very important (compare with chart number 11).

**Chart number 11. Entrepreneurship education meaning (%)**



Source: own research

The research recommended by the European Commission, the entrepreneurship education development and promotion have been one of the key priorities of the European Union institutions and its member states for many years. In the context of high rates of young unemployed, returning economic crises and rapid changes related to the technological and economic revolution, as well as development of a society based on the knowledge, sectional skills such as enterprising are crucial not only for the attitudes of young people but also for the development of entrepreneurship culture in Europe<sup>1</sup>.

Conclusions and recommendations:

1. Theoretical knowledge is not the most important skill that pupils should acquire at school (50% of indication), but skills of solving the problems are more important (56,31%).
2. Within entrepreneurship education programme, such competences among young people should be developed as: creativity (83%), dealing with difficult situations (81%), self-confidence (66%).
3. Entrepreneurship classes should be part of regular lessons (87%) in the form of workshops and practices (82%).

The recommendations predict innovative training programme supporting entrepreneurship within pupils of high schools. The programme should be focused on: raising interpersonal skills, negotiations and financial and business aspects.

The University of Bielsko-Biala recommends, based on the research, the following example programme:

### Creating business idea

The purpose of the training: to provide participants with practical knowledge in the field of creating business ideas using modern business models.

Training results:

- Learning about modern business models and how to use them
- Ability of creation individual or team business models
- Acquiring the ability to make choices based on your own interests and knowledge that will help you running your own business

|            | The training subject                                       | Duration | The programme   |
|------------|--|----------|---|
| FIRST DAY  | Introduction   | 20 min   | Main workshops and project issues presentation<br>The main training issues presentation<br>Increasing the motivation<br>Training needs analysis |
|            | Competences identification in the area of business running | 30 min   | Determination of ability and predisposition of running your own business and entrepreneurship attitudes<br>Business self-assessment             |
|            | Business models creation                                   | 40 min   | Presenting business models<br>Techniques supporting business models designing<br>Models testing (good practises)                                |
| SECOND DAY | Business models verification methods                       | 45 min   | Using tools - Design thinking - for ideas creation  |
|            | The Strategy of Blue Ocean                                 | 45 min   | Introduction to the strategy of Blue Ocean<br>Practical aspects of the Strategy of Blue Ocean   |
| THIRD DAY  | Fundamentals of marketing in small company                 | 45 min   | Communication and marketing campaign in practice<br>New media in marketing and its utility  |
|            | Academic entrepreneurship                                  | 25 min   | Academic business incubators  |
|            | Summary  | 20 min   | Discussion<br>Certificates<br>Evaluation questionnaire  |

<sup>1</sup> Report Entrepreneurship Education at School in Europe; www.eurydice.org.pl, 2016

## Entrepreneur image

The purpose of the training: supporting participants within necessary knowledge leading to creation professional business image.

Training results:

- Effective communication
- The ability of auto presentation controlling and designing the professional image
- Confidence strengthening during public speech

|           | The training subject               | Duration | The programme                                  |
|-----------|------------------------------------|----------|--|
| FIRST DAY | Introduction                       | 20 min   | Main workshops and project issues presentation |
|           |                                    |          | The main training issues presentation          |
|           |                                    |          | Increasing the motivation                      |
|           |                                    |          | Training needs analysis                        |
|           | Auto presentation                  | 55 min   | The elements of the image                      |
|           |                                    |          | Public speeches                                |
|           |                                    |          | Communication – verbal and non-verbal          |
|           | Positive image creation techniques | 40 min   | Individual potential analysis                  |
|           |                                    |          | Positive impression building                   |
|           |                                    |          | Savoir-vivre in business relations             |
|           |                                    |          | Own and business coherent image creation       |
|           | Summary                            | 20 min   | Discussion                                     |
|           |                                    |          | Certificates                                   |
|           |                                    |          | Evaluation questionnaire                       |

## Gaining European Funds’ – possibility of support your first company

Training purposes: the main purposes of training are concentrated on the basic knowledge from the area of gaining national/European funds, which may support pupils’ first enterprise.

The training results:

- Acquiring the theoretical knowledge from the area of gaining financial sources for starting your own company – within the financial perspective of the European Union
- Providing the practical knowledge from the area of searching the open competitions within the current programmes
- Adjusting planned activities to the right financial programme
- Basic information regarding the simple business plan

|           | The training subject                                   | Duration | The programme   |
|-----------|--|----------|---|
| FIRST DAY | Introduction   | 15 min   | Main workshops and project issues presentation            |
|           |  |          | The main training issues presentation                     |
|           |  |          | Increasing the motivation                                 |
|           |  |          | Training needs analysis                                   |
|           | European funds – the tool of co-financing your company | 20 min   | Regional, national and international financial mechanisms |
|           |  |          | The tools used within the financial programmes            |
|           | Business plan building                                 | 45 min   | The beneficiaries of the financing                        |
|           |  |          | The application form construction                         |
|           |  |          | Traps and difficulties in secure financing process        |
|           | Summary  | 10 min   | Discussion  |
|           |  |          | Certificates  |
|           |  |          | Evaluation questionnaire                                  |

## Negotiations in business

Training purposes: providing the practical knowledge from the area of business strategies and negotiations stages.

Training workshops:

- Acquiring the practical knowledge from the area of business negotiations planning, stages and styles
- Training skills from the area of negotiations techniques
- Using techniques necessary for designing negotiations

|            | The training subject          | Duration | The programme                                      |
|------------|-------------------------------|----------|--|
| FIRST DAY  | Introduction                  | 15 min   | Main workshops and project issues presentation     |
|            |                               |          | The main training issues presentation              |
|            |                               |          | Increasing the motivation                          |
|            |                               |          | Training needs analysis                            |
|            | Negotiations                  | 30 min   | Psychological aspect of negotiations               |
|            |                               |          | Elements of the negotiating environment            |
|            |                               |          | Stages of negotiations                             |
|            | Features used in negotiations | 30 min   | Features and predispositions of a good negotiator  |
|            | Summary                       | 15 min   | Case study, discussion                             |
| SECOND DAY | Negotiations' techniques      | 45 min   | Styles in negotiations                             |
|            |                               |          | Conventional and unconventional negotiating styles |
|            | Cultural models               | 30 min   | Protransaction culture                             |
|            |                               |          | Propaganda culture                                 |
|            |                               |          | Ceremonial cultures                                |
|            |                               |          | Non-monumental cultures                            |
|            |                               |          | Expressive cultures                                |
|            | Restrained culture            |          |  |
|            | Summary                       | 15 min   | Discussion   |
|            |                               |          | Certificates                                       |
|            |                               |          | Evaluation questionnaire                           |

## The survey's research results

Research

Number of records in this question: 206

Total number of records in research: 206

Percentage of whole: 100.00%

Summary of the fields for question no. 1

1. What kind of knowledge, experiences or skills should the student obtain at school?

| Answer                             | Number | Percentage |
|------------------------------------|--------|------------|
| Deep expert knowledge (SQ1001)     | 103    | 50,00      |
| General knowledge (SQ1002)         | 71     | 34,47      |
| Presentation skills (SQ1003)       | 61     | 29,61      |
| Experience with team work (SQ1004) | 106    | 51,46      |
| problem solving (SQ1005)           | 116    | 56,31      |
| Leadership experience (SQ1005)     | 50     | 24,27      |
| Growth mind-set (SQ1006)           | 99     | 48,06      |
| Other                              | 10     | 4,85       |

|          | Answer                      |
|----------|-----------------------------|
| Students | Practical knowledge         |
| Teachers | interpersonal communication |
|          | the skill of discovery true |
| Pupils   | Practical                   |
|          | Practice                    |
|          | Practical knowledge         |
|          | Practical skills            |

Summary of the fields for question no. 2

2. What kind of personal characteristics and skills are critical for successful business?

| Answer   | Number | Percentage |
|--|--------|------------|
| Creativity (SQ2001)  | 171    | 83,01      |
| Self-confidence (SQ2002)   | 136    | 66,02      |
| Leadership skill (SQ20003)   | 45     | 21,84      |
| Trustworthiness (SQ2004)   | 65     | 31,55      |
| Growth mind-set (ability of overcoming the hurdles, strong-mindedness, ...) (SQ2005) | 166    | 80,58      |
| Financial literacy (SQ2006)  | 17     | 8,25       |
| Other  | 6      | 2,91       |

| Answer   |   |
|----------|---|
| Students | Developing your own creativity  |
| Teachers |   |
| Pupils   | Young people should develop the awareness of social solidarity and equality within all people |

Summary of the fields for question no. 3

3. Do you consider the implementation of activities focused on support and development of business and entrepreneurial spirit into the tuition as important?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 179    | 86,89      |
| No (N)         | 27     | 13,11      |
| Without answer | 0      | 0          |

Summary of the fields for question no. 3B

If not, why?

| Answer |   |
|--------|---|
| Pupils | Because yes<br>Studies will be good place for it<br>It is not economic profile, not all should have it<br>They are too problematic and not all of pupils need them to be successful |

Summary of the fields for question no. 3A

| Answer   | Number | Percentage |
|--|--------|------------|
| Founding and running a student virtual company (SQ3001B) | 33     | 18,44      |
| Workshops focused on the field of business (SQ3002B)     | 98     | 54,75      |
| Cooperation with business subjects (SQ3003B)             | 101    | 56,42      |
| Internships, trainings (SQ3004B)                         | 146    | 81,56      |
| Individual consultations (SQ3005B)                       | 29     | 16,20      |
| Mentoring by businessmen (SQ30006B)                      | 22     | 12,29      |
| Visits to companies (SQ3007B)                            | 93     | 51,96      |
| Other  | 0      | 0,00       |

Summary of the fields for question no. 4

4. Do you consider business ethic as important part of education of business and entrepreneurial spirit?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 177    | 85,92      |
| No (N)         | 28     | 13,59      |
| Without answer | 1      | 0,49%      |

Summary of the fields for question no. 4B

If not, why?

| Answer         |  |
|----------------|--|
| Answer         |  |
| Without answer |  |

Summary of the fields for question no. 2

2. What kind of personal characteristics and skills are critical for successful business?

| Answer   | Number | Percentage |
|--|--------|------------|
| Creativity (SQ2001)  | 171    | 83,01      |
| Self-confidence (SQ2002)   | 136    | 66,02      |
| Leadership skill (SQ20003)   | 45     | 21,84      |
| Trustworthiness (SQ2004)   | 65     | 31,55      |
| Growth mind-set (ability of overcoming the hurdles, strong-mindedness, ...) (SQ2005) | 166    | 80,58      |
| Financial literacy (SQ2006)  | 17     | 8,25       |
| Other  | 6      | 2,91       |

| Answer   |   |
|----------|---|
| Students | Developing your own creativity  |
| Teachers |   |
| Pupils   | Young people should develop the awareness of social solidarity and equality within all people |

Summary of the fields for question no. 5

5. Do you think hands-on experience is necessary part of specialized high school education?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 180    | 87,38      |
| No (N)         | 24     | 11,65      |
| Without answer | 2      | 0,97       |

Summary of the field for question no. 5A

If yes, what form do you see the best?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

| Answer |   |
|--------|---|
| 4      | Working on particular tasks at companies.   |
| 5      | To involve the students in teams working on real problems.  |
| 6      | Hands-on experience with exactly given agenda, so the student really learns something practical.  |
| 7      | Professional experience in companies.   |
| 8      | In my opinion, the best form of practice is to work at company, where the student can go through different positions and experience different processes, which allow him to imagine the future work in wider context. |
| 10     | From a week-long to 14 days long continuous internships.  |
| 16     | Hands-on experience achieved at companies.  |
| 18     | Long-term internships taking place in the graduation period lead by experienced specialists.  |
| 19     | I do not know.  |
| 21     | Close cooperation with person from the work field, which the students are preparing for.  |
| 26     | Working directly in the company.  |
| 28     | Working on individual project at external workplace, at company etc. and being supervised by experienced employees.   |

Summary of the fields for question no. 5B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

Summary of the fields for question no. 6

6. Do you consider the participation of businessmen and self-employed in tuition as important?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 177    | 85,92      |
| No (N)         | 27     | 13,11      |
| Without answer | 2      | 0.97%      |

Summary of the fields for question no. 6A

If yes, please be more specific about the way:

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

| Answer |  |
|--------|--|
| 4      | Lectures, excursions, competitions.  |
| 5      | Workshops, consultations. Leading some parts of tuition of specialized subjects, allowed by legislation.   |
| 6      | Lectures and discussions about how to run a business, what are the difficulties, how to start.   |
| 7      | Sharing experience, being a role model for the students, motivation.   |
| 10     | Teaching the examples from practice.   |
| 16     | Workshop.  |
| 18     | Workshops.   |
| 19     | I do not know.   |
| 21     | Interesting lectures where real and practical situations are presented, introducing the difficulties of the job but also joy and success coming from the work. |
| 26     | It is good to let successful people give us advice.  |
| 28     | Providers of internships, workshops at schools.  |
| 28     | Working on individual project at external workplace, at company etc. and being supervised by experienced employees.  |

Summary of the fields for question no. 6B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

| Answer |   |
|--------|---|
| 8      | Not directly in the tuition, the hands-on experience is important though. |

Summary of the fields for question no. 7

7. Do you think the tuition of general subjects (math, physics, history, foreign language, etc.) should contain practical examples such as math: calculations of personal/household finances, calculations of profit, interest, taxes; foreign languages: writing CV and formal letter in foreign language?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 179    | 86,41      |
| No (N)         | 25     | 12,14      |
| Without answer | 3      | 1,46       |

Summary of the fields for question no. 71

If yes, please give the examples:

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

| Answer | Number | Percentage |
|--------|--------|------------|
| 4      |        |            |
| 5      |        |            |
| 6      |        |            |
| 7      |        |            |
| 8      |        |            |
| 10     |        |            |
| 16     |        |            |
| 18     |        |            |
| 19     | 208    | 100        |
| 21     | 0      | 0          |
| 28     |        |            |

Summary of the fields for question no. 7B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 208    | 100        |
| Without answer | 0      | 0          |

| Answer | Number | Percentage |
|--------|--------|------------|
| 26     |        |            |





Summary of the fields for question no. 8

8. Information about taxes and national and European laws concerning business and support of entrepreneurship should be part of:

| Answer  | Number | Percentage |
|---|--------|------------|
| Specialized high school education. (SQ8001)                               | 98     | 47,57      |
| Extracurricular education. (SQ8002)                                       | 95     | 46,12      |
| They should not be part of education at specialized high school. (SQ8003) | 10     | 4,85       |
| Without answer  | 3      | 1,46       |

Summary of the fields for question no. 9

9. Do you run some kind of program of business support for high schools students, or are you participant in anyone?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 66     | 32,04      |
| No (N)         | 134    | 65,05      |
| Without answer | 6      | 2,91       |

Summary of the fields for question no. 9A

| Answer   | Number | Percentage |
|--|--------|------------|
| Classes focused on support of business, in addition to standard tuition. (SQ9001A) | 17     | 25,76      |
| Business incubator/accelerator. (SQ90021)  | 14     | 21,21      |
| Virtual student company. (SQ9003A)   | 14     | 21,21      |
| Participation in events related to entrepreneurial spirit. (SQ9004A)               | 37     | 56,06      |
| Other  | 6      | 9,09       |

Summary of the fields for question no. 10

10. How do you evaluate the importance of education of entrepreneurial spirit at specialized high schools?

| Answer                   | Number | Percentage |
|--------------------------|--------|------------|
| Very important. (A101)   | 58     | 28,16      |
| Quite important. (A102)  | 77     | 37,38      |
| Important. (A103)        | 50     | 24,27      |
| Rather important. (A104) | 5      | 2,43       |
| Not important. (A105)    | 16     | 7,77       |
| Without answer           | 58     | 28,16      |

Summary of the fields for question no. 11

| Answer                      | Number | Percentage |
|-----------------------------|--------|------------|
| Student. (A1)               | 110    | 53,40      |
| Teacher. (A2)               | 10     | 4,85       |
| Employee/entrepreneur. (A3) | 86     | 41,75      |



**ENTREPRENEURSHIP  
AS AN EDUCATIONAL  
TOPIC:  
CZECH EXPERIENCE**

## Entrepreneurship in education

One of the basic premises defined by the current knowledge of business or entrepreneurship development is a strong belief that an individual's entrepreneurial qualities and abilities are not inborn but they can be changed by means of nurture, education and other life experiences. Entrepreneurial competences are generally formed at school which is regarded as an essential educational environment, thus teachers at all levels of education can be considered as very important factors contributing to entrepreneurship education.

The issue of entrepreneurship as an independent educational topic, which was set aside from economic or business education, appeared in the 40's of the last century in the traditional centre of entrepreneurial and business education at Harvard Business School where the first worldwide course of entrepreneurship was realized in 1947. The entrepreneurship started to be taught here in the 70's, while the real beginning of entrepreneurship education at university level was in the 80's (Morris, Kuratko, Cornwall, 2013). In Europe, teaching entrepreneurship was a part of economic or business subjects for a long time.

Visible changes in educational system can be dated back from the beginning of the millennium when the Lisbon Strategy was issued by the member states of European Union which, at Spring European Council in 2000, set the goal of the most competitive and dynamic knowledge economy capable of sustainable economic growth with more and better jobs.

The proposed strategic goal was based on the analysis from the previous period, and it was continuously evaluated, supplemented and extended at regular Spring European Councils. At the same time, many weak points were identified among which was, in relation to our topic, the existence of a number of bureaucratic barriers to setting up new enterprises and their funding.

One of the main components of the Lisbon Strategy was defined as the Elimination of barriers to entrepreneurs, especially to small and medium enterprises. The European Council also repeatedly stated that member countries showed low willingness to take a risk in business, and that entrepreneurial spirit and culture in Europe could not be compared to the USA from this point of view. In member states, there is no link between companies and research and technological development, between enterprises and financial markets, or between entrepreneurial sphere and training institutions and advisory services.

The support of entrepreneurial spirit was embodied in the Lisbon Strategy not only in connection with economic development but also in the social field which, among others, emphasizes the need of lifelong learning and defines the framework of basic skills that must be developed: skills in ICT, foreign languages, technological and entrepreneurial culture.

From the point of view of many official political documents appearing on European and Czech platform in the last decade, there has been clear and publicly acceptable demand for the development of entrepreneurial spirit of pupils and students and for the support of entrepreneurially-friendly culture. These efforts find their response in a number of theoretical scientific papers.

## From educational goals towards entrepreneurship

When defining the goals of entrepreneurship education, it is very important to explain where and why there is a borderline between competence to entrepreneurship and education to entrepreneurship in work. English terminology which works with the concept of entrepreneurship education – common in European curriculum documents – usually does not distinguish between nurture and education. It is considered as the study of entrepreneurship, or it concerns entrepreneurship education (the nurture to profession – the nurture of future entrepreneurs) even enterprising education (the improvement and development of a particular specific quality – entrepreneurial spirit).

In the wide field we are able to meet a term called enterprising education where education means any situation when you do a kind of study and learn (Průcha et al., 2009). Education in this meaning include an upbringing which helps to develop the knowledge, skills, attitudes and values which are closely connected to „personality of the person with an aim to get positive changes at himself“ (Průcha et al., 2009, s. 345).

According to a wide field of activities which is possible to include under the term called entrepreneurial education and at the same time delimit it from an economic education which must not lead to develop enterprise, we are inclined to the term Enterprising Upbringing. The main aim of work is to catch the specific area which is characterized by deliberate impress to promote advancement of enterprise. Enterprising Upbringing is understood as a wide term and primarily defined with an aim to specific educational event which is cultivation and advancement of specific quality – enterprise.

Although, even general “strong” concept of competence as was described by Janík et al. (2010), is in accordance with concept of educational activity, the binding of the concept of competence term usually used to delimitation in curriculum documents (mostly is this competence integrate with a work competence) would likely lead to terminological bilingualism. For those purposes of work is term competence used only with a reference on requirements for curriculum documents and education policy.

The very term Enterprise, whose interpretation are closely related with a term Entrepreneurship is even more complicated in the field of its content. The center of individual concepts of entrepreneurship determinate, whether it is related to the concept of Entrepreneurship as a process or as a approach or as a value orientation. In definition of entrepreneurship in the meaning of approach and a value orientation is entrepreneurship understanding mostly known as “the individual's effort to exploit opportunities to solve the problem in the creative way” (Gibb, 2002), from which it follows understanding of entrepreneurship not only as the conditions of entrepreneurship but as a profession and also as personal qualities or individual or social values which content life-style (Junger, 2001).

The process of advancement of Entrepreneurship can be processed through formal, non-formal and inform educational activities, although only in case that concrete unbringing-educate action leads to unbringing aim which is able to improve enterpreurship

skills in the complex way which oscillate between 3 types of formative functioning.

The question is, how the issue of entrepreneurial development should be taken best into the educational process what is to be taught, by what methods and which of them would be an organization of teach process, does not have yet a clear answer as points out. In Didactics of Entrepreneurship Education (Malach, 2007) also argue to be careful in defining aims of entrepreneurship unbringing with an objective regard to its concept and recommends to distinguish between entrepreneurship education or small business education and enterprising education. The aims of entrepreneurial unbringing relate on individuals regards of entrepreneurial unbringing, when the main aim of it is straight support entrepreneurship (include intra-entrepreneurship) and develop negotiation aimed to established a new business or in broader sense to develop entrepreneurial behavior.

Entrepreneurial behavior may be related to an individual, group, organization or society and does not necessarily involve a profitable aspect.

Intermediate objective of business education is then to ensure that pupils and students:

- develop their creativity,
- acquire the ability to search for and exploit opportunities and bear an associated risk,
- embrace the innovative approach to solving problems and tasks and use their knowledge of project management at that,
- learn to work in a team and for the team,
- increase responsibility for their own lives and careers,
- master specific knowledge about business (selected ones).

At the most general level, we can describe the objective of entrepreneurial education as development of the potential for creating opportunities and managing of uncertainty and complexity of today's world.

## Conclusion

The survey, completed by The Technical University of Ostrava, was attended by 110 respondents, most of whom were students and employers. The relatively low participation of teachers was surprising.

Another interesting finding was that even though 93% of respondents consider important to include entrepreneurship and business support into curricula, in fact only 16% of them operate or participate in such an educational programme. Moreover, the mentioned forms of support/ programmes do not contain proven interactive procedures (incubators, virtual business) but prefer static forms of education (lectures, lessons, excursions).

On the contrary, the approach of the respondents to the business ethics was pleasing. 88% of them consider business ethics important. Not very good state of business ethics in the Czech Republic was also mentioned. Furthermore, the respondents argue that ethics is important not only for the business. Respondents agreed that:

- Doing business ethically and correctly is the basis for long-term success.
- The entrepreneur should be someone who through their behaviour contributes to the culture of the society.
- Ethics is inherent prerequisite for a healthy society and ethics in the Czech Republic lags behind
- Respondents also commented that the depth of knowledge depends also on the specialism of the school. Acquired knowledge of a specific field should be deeper than general knowledge at specialized schools, because general knowledge should be provided by other non-specialized schools. It is also important to include entrepreneurship, including financial literacy into general school subjects. Mathematics, for instance, should include the practical application of everything what students learn to understand that math is a tool for everyday use. Social sciences should include less memorizing and more linking data in perspective and teaching of modern history. These forms of education are considered ideal by the respondents:
- Involvement of the students into teams solving real problems.
- School practice should include detailed program to ensure that students really learn something practical.
- The best form of practice is directly in a company or firm where a student passes through different positions and processes and after that is able to imagine the work in a broader context.



**ENTREPRENEURSHIP  
EDUCATION:**

**THE ICELANDIC  
EXPERIENCE**

## Introduction

**The University of Iceland (UI)** was established 17th June 1911, in Reykjavík. UI is the leading institution of research and higher education in Iceland; it is a progressive educational and scientific institution, renowned for research in the global scientific community. The University of Iceland is a state university, situated in the heart of Reykjavík, the capital of Iceland. A modern, diversified, and rapidly developing institution, the UI offers opportunities for study and research in 400 programs, spanning most fields of science and scholarship. The UI is organized into five schools: Social Sciences, Health Sciences, Humanities, Education, Natural Sciences, and Engineering. About 14 thousand students are enrolled and around thirteen hundred staff and faculty are in its employ.

**The School of Education at the UI**, educates teachers for preschools, primary schools, and upper secondary schools, sports and health sciences, social educators, and leisure professionals. All academic programs at the School of Education are strongly linked to the workplaces of those professions the school educates, such as schools and other societal institutions. The programs provide a wide range of professional options, and serve as a good foundation for further studies. The School of Education is divided into three faculties: the faculty of Education Studies, the faculty of Teacher Education and the faculty of Sport, Leisure Studies and Social Education.

The School of Education is the principal institution in the fields of education and training in Iceland, and has around 1050 students enrolled in undergraduate programs, and an increasing number of master's and doctoral students. In the year 2017, there were 84 doctoral students and 715 master's students doing their graduate degree training at the School of Education, many from other European countries. The School of Education also hosts vibrant exchange student programs.

At the School of Education diverse research is carried out in the field of education, pedagogy and training for the purpose of creating new knowledge for the benefit of society. The faculty at the School of Education comes from diverse scholarly and vocational disciplines, providing a truly interdisciplinary training and research in the field of education. As a result, research collaboration is common, both domestically and with researchers and teams in Europe. Emphasis is placed on a strong support service for teaching, studying and research, and the support service alone employs about 30 people.

**The Educational Research Institute** is an academic and research institute within the UI, housed in the school of Education. The Institute conducts research and provides advice

and services within the aim of strengthening research in the field of education and related fields.

Twenty-two research centres belong to the School of Education, all of them fall under the Educational Research Institute. The School of Education, mostly through research enjoys close ties with the workplace, especially as it provides advice, empirical evidence, and guidelines for those interested in education, training, and skill acquisition.

The main role of the Educational Research Institute is to promote research and strengthen the research environment within the School of Education. The institute supports research units and individual researchers by providing assistance to researchers applying for research funding, both for domestic and foreign competitive research grants and for other funding. The institute also provides advice and assistance in the dissemination of research results, assistance in organizing research, and support to development projects within the School of Education. The aim is to promote research and seek to ensure that the structure and development of the Icelandic education sector is based on the best available knowledge at any given time.

**In connection to the Icelandic study** we have to take into account that the school system in Iceland differs from that in Poland and Czech Republic. The students choose their educational path at 16 years of age. Then most children (95%) choose to apply for secondary schools. Either they chose classical book learning or they choose vocational education. Majority of students that chose vocational education are older as they often start later in vocational education.

In this study the focus was on students aged 18+ (as children under 18 is the age that we need to get permission from their parents to submit a survey).

In evaluating the secondary schools that offer vocational studies, we choose to work with the School of Technology in Reykjavík. We approached the school and introduced the project "Find your inner inventor" and got permission to send the survey to 800 vocational students 18+ and their teachers.

The survey was reported to the Icelandic Data Protection Authority and got permission nr. S8367. The survey was conducted digitally and was sent out to the students/teachers on their school's e-mail. Not all participants choose to use the school e-mail, or check it regularly - but this is the only e-mail that the school has. The survey was open for two weeks (30th Oct to 14th of November 2017) and 120 student/teachers started the survey.

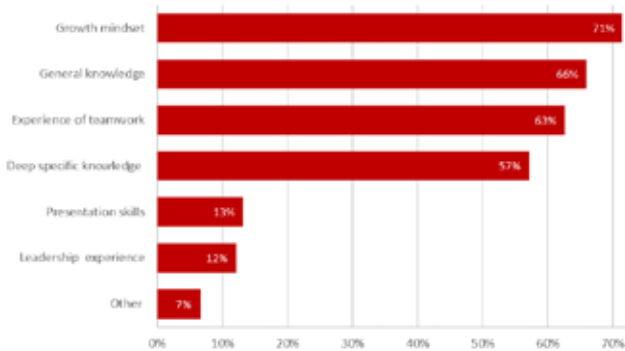
Processing the survey only 97 answers from students/teachers were admissible. As some of the participants glanced at the questions and choose not to answer.

**Figure 1. Division between students / teachers and gender**

|              | Males     |             | Females   |             | Unidentified |             | Total     |             |
|--------------|-----------|-------------|-----------|-------------|--------------|-------------|-----------|-------------|
|              | n         | %           | n         | %           | n            | %           | n         | %           |
| Students     | 51        | 93%         | 39        | 98%         | 2            | 100%        | 92        | 95%         |
| Teachers     | 4         | 7%          | 1         | 3%          | 0            | 0%          | 5         | 5%          |
| <b>Total</b> | <b>55</b> | <b>100%</b> | <b>40</b> | <b>100%</b> | <b>2</b>     | <b>100%</b> | <b>97</b> | <b>100%</b> |

## Educational stimulatory features

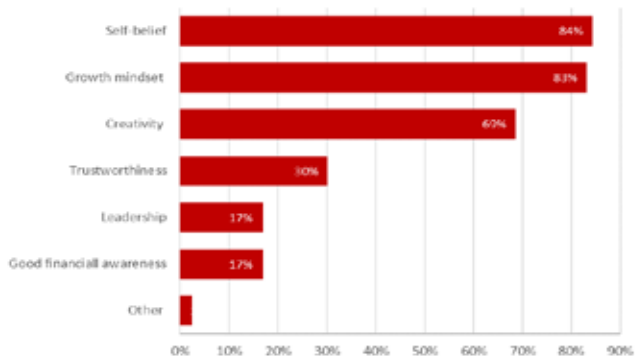
**Figure 2. What kind of knowledge, experience or skills should a student gain during his studies?**



When we ask the participant to choose what kind of knowledge, experience or skills should a student gain during his studies (each participant could choose up to three most relevant items). As presented in figure 2 the highest scores were for increasing their mind-set (71%), general knowledge (66%) and experience of teamwork (63%) and deep specific knowledge (57%).

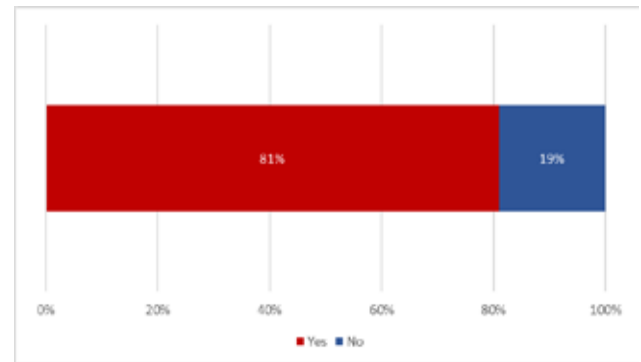
7% of the participants choose other and they were asked to explain in an open text. The following was what they listed: Independent working methods and self-improvement, broader practical skills in all areas, building methods for obtaining information, experience that benefits the job market, methodology of design and entrepreneurship, process from idea to marketing, importance of good management and marketing, make a business plan and ethics relating to substance use and copyright

**Figure 3. Which personality traits and skills are key for a successful entrepreneurship?**



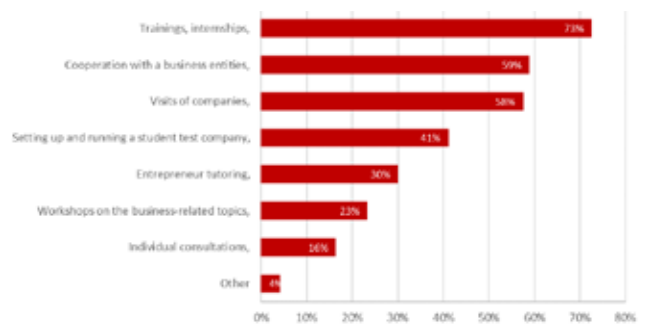
Which personality traits and skills are key for a successful entrepreneurship (each participant could choose up to three most relevant items). The self-belief, growth mind-set and creativity was the one that were most selected (see figure 3). Under other: they said desire.

**Figure 4. Do you think that some specific activities, related to the support of business / entrepreneurship, should be included in your lessons?**



When they were asked do you think that some specific activities, related to the support of business / entrepreneurship, should be included in your lessons – most answered yes or 81%. For the one that answered no that they thought that they did not need any specific activities and why, they answered: just, not all need to be or all want to be entrepreneurs, it does not fit in to my study, most entrepreneurial projects do not perform successfully, we learn as it is quite enough about running businesses and perhaps it should be a part of alternative choose but not compulsory.

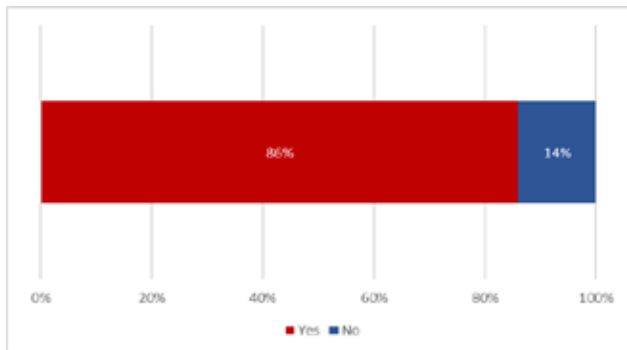
**Figure 5. Do you think that some specific activities, related to the support of business / entrepreneurship, should be included in the lessons?**



When we asked them what they thought should be included in the lessons to support entrepreneurship (each participant could choose up to three most relevant items). Most of them answered training, cooperation with business and visiting companies (see figure 5) – so in other words closer to the actual business. 4% choose other and specified it as: lacking the opportunity to get internship to receive a letter of imprints, it would be good to be able to go live and see actual projects, and more practical education.

## Business ethics

**Figure 6. Do you find a business ethics to be important part of business / entrepreneurship education?**



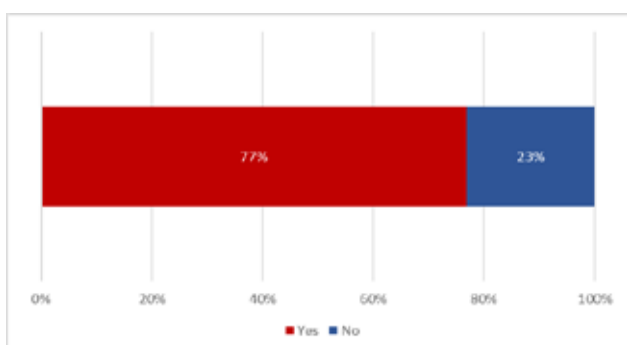
Most of the participants agreed that business ethics was important part of entrepreneurship education.

The ones that answered no, were asked why not? Some did not understand the question and chose to say no rather than yes, ethics and business have limited coherence. We should learn about ethics in our upbringing and we don't need to learn it separately. Education should offer the tools and association to support us in self-development, and each individual creates his own morality.

The ones that answered yes, were asked why? Important to build trust and honesty because entrepreneurs often end up in a situation / business that holds money; because ethics matter; teach people to conduct fair business; Increased morality in business is a prerequisite for progress; society benefits if greed is not the only motivation for running business and trust, respect and long-term success is based on business ethics etc.

## Entrepreneurs participation in lectures

**Figure 7. Do you consider a participation of freelancers / entrepreneurs in lessons as important?**

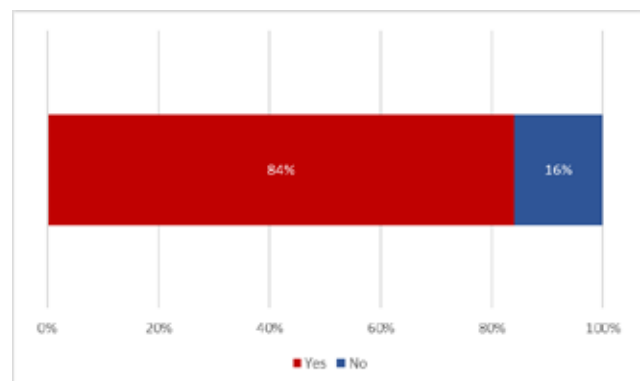


Most of the participants agreed that participation of entrepreneurs in lessons is important. But 23% did not see it as such. When we asked them why not, following answers came as example: not all are interested; we don't intent to start our own business and we don't have interest in what others are doing.

For the ones that agreed that it was important – they were asked why? Very positive answers. Example of their answerers are the following: Gain more understanding, insight and knowledge of what is out there after schooling; positive to building future goals for young people; it is important to hear real experience from other; increases openness; interesting to see how other have used their education etc.

## Teaching of a classical subject

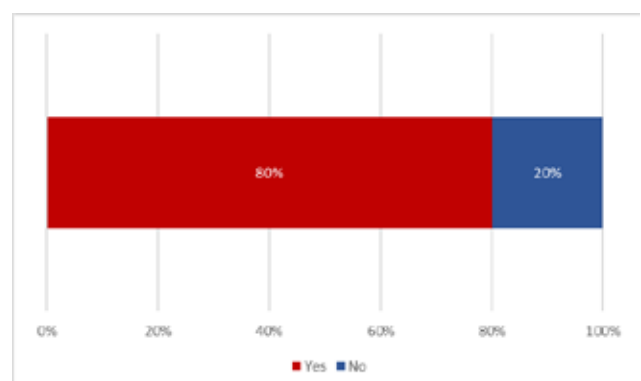
**Figure 8. Do you think that teaching of a classical subjects (maths, physics, history, languages) should involve some practical exercises, e.g. maths – home/personal finance and profit/loan/taxes calculations?**



Most (84%) agree that teaching classical subjects should involve some practical exercises. The ones that don't agree were asked why not? You can get that knowledge out of school hours; only for those who are interested, not obligate it for all, make this creative and interesting; not as duty but as a choice, etc.

For the ones that agreed that it was important – they were asked why? We learn more of practical exercises; to interest and facilitate connections to daily life; more variety; it can prove to be practical tools for the future, etc.

**Figure 9. Do you think that teaching of a classical subjects should involve practical exercises, e.g. writing a CV in a foreign language or a formal letter?**



Most agree that teaching should involve teaching such things as writing a CV or formal letter in foreign language. For the ones that agreed that it was important – they were asked why?

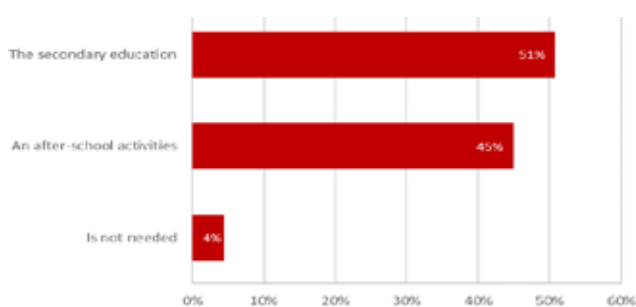


Prepare students for the future; everyone needs to be able to express themselves, on their own terms; such a good thing, and it does not take a lot of time. Educational counsellors could even handle such education; everyone needs to be able to do these tasks; this knowledge is useful in real life; this is already included in our studies, etc.

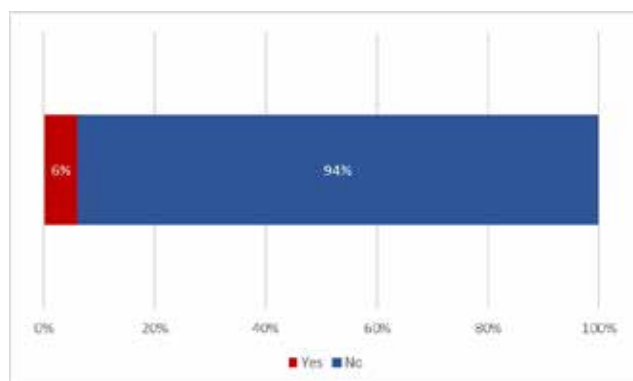
The ones that don't agree were asked why not? The Internet can help you with this and it is part of some courses that we attend. It depends on the tracks that individual is following; we learned this in elementary school.

The participants were asked if they thought that general information about taxes, local government and EU policies regarding business and support of entrepreneurship, should be part of secondary education, after school activities or were not needed. 51% of the participants thought that it should be part of secondary education, but 45% prefer that it should be taught as an after-school activity (see figure 10).

**Figure 10. Do you think, that general information about taxes, local government and EU policies regarding business and support of entrepreneurship, should be part of: The secondary education, after school activities or is not needed.**



**Figure 11. Do you attend (or run) a particular business support programme for secondary school students?**

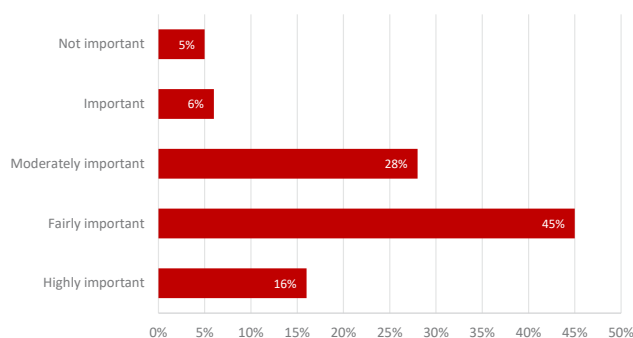


94% of the participants did not attend (or run) a particular business support programme for secondary school students. Only 6% answered this question with a yes. We then asked the ones that answered positive to tell us what kind of support courses they were involved in. 2% were taking part in

experimental business for students. 2% were participants in an event connected to entrepreneurship. The other 2% were partaking in lectures and other unexplained.

### Ratings of the importance of a pro-business/ entrepreneurship education.

**Figure 12. How would you rate the importance of a pro-business/entrepreneurship education in the secondary schools?**



We also asked the participant to value the importance of business /entrepreneurship in secondary education. Around 61% of the participant thought it is fairly or highly important (see figure 12).

**Conclusions:** There seems to be interest with the participants to learn about entrepreneurship or increase their knowledge. Most of the participants also agree that there should be stronger connection between the school and the real entrepreneurship / businesses – that it is valuable for students to see real life example.

Overall the majority of students that answered the survey think that entrepreneurship education is important in secondary school education (moderately-highly 89%). However, a vast majority of them does not run or attend a business support program. There seems to be fertile grounds in this cohort for entrepreneurship education. The challenge for getting these students to attend such a course is according to our discussions with school administration to fit it in the overall organization of the school's curriculum. If this were to become an offer to students outside of the daily time-table and whether or not it would give credits is another challenge.



# ANNEX I

## THE RESULTS OF QUESTIONNAIRES (VSB - TUO)

TOTAL NUMBER OF ANSWERS  
IN THE RESEARCH: 110

Summary of the fields for question no. 1

1. What kind of knowledge, experiences or skills should the student obtain at school?

| Answer  | Number | Percentage |
|---|--------|------------|
| Deep expert knowledge (SQ1001)  | 32     | 29.09 %    |
| General knowledge (SQ1002)  | 89     | 80.91 %    |
| Presentation skills (SQ1003)  | 66     | 60.00 %    |
| Experience with team work - cooperation in education and problem solving (SQ1004) | 81     | 73.64 %    |
| Leadership experience (SQ1005)  | 23     | 20.91 %    |
| Growth mindset (SQ1006)   | 54     | 49.09 %    |
| Other   | 10     | 9.09 %     |

| Answer |  |
|--------|--|
| 4      | To get to know the practice in companies.  |
| 21     | The depth of obtained knowledge depends on the level of school specialism. Knowledge of particular field of study obtained at specialized schools should be deeper than general knowledge obtained at other unspecialized schools. |
| 26     | Schools provide lack of leadership courses, especially IT specialized institutions.  |

Summary of the fields for question no. 2

2. What kind of personal characteristics and skills are critical for successful business?

| Answer  | Number | Percentage |
|---|--------|------------|
| Creativity (SQ2001)   | 76     | 69.09 %    |
| Self-confidence (SQ2002)  | 78     | 70.91 %    |
| Leadership skill (SQ20003)  | 63     | 57.27 %    |
| Trustworthiness (SQ2004)  | 52     | 47.27 %    |
| Growth mindset (ability of overcoming the hurdles, strong-mindedness, ...) (SQ2005) | 92     | 83.64 %    |
| Financial literacy (SQ2006)   | 82     | 74.55 %    |
| Other   | 7      | 6.36 %     |

| Answer |                             |
|--------|-----------------------------|
| 19     | Patience, diligence, honest |

Summary of the fields for question no. 3

3. Do you consider the implementation of activities focused on support and development of business and entrepreneurial spirit into the tuition as important?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 102    | 92.73 %    |
| No (N)         | 8      | 7.27 %     |
| Without answer | 0      | 0.00 %     |

Summary of the fields for question no. 3A

| Answer   | Number | Percentage |
|--|--------|------------|
| Founding and running a student virtual company (SQ3001B) | 58     | 56.86 %    |
| Workshops focused on the field of business (SQ3002B)     | 56     | 54.90 %    |
| Cooperation with business subjects (SQ3003B)             | 61     | 59.80%     |
| Internships, trainings (SQ3004B)                         | 67     | 65.69%     |
| Individual consultations (SQ3005B)                       | 21     | 20.59%     |
| Mentoring by businessmen (SQ3006B)                       | 36     | 35.29%     |
| Visits to companies (SQ3007B)                            | 64     | 62.75%     |
| Other  | 0      | 0.00%      |

Summary of the fields for question no. 3B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 8      | 100.00 %   |
| Without answer | 0      | 0.00 %     |

Summary of the fields for question no. 4

4. Do you consider business ethic as important part of education of business and entrepreneurial spirit?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 97     | 88.18%     |
| No (N)         | 13     | 11.82%     |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 4A

If yes, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 97     | 100.00%    |
| Without answer | 0      | 0.00%      |

| Answer  |
|---|
| 4 Running business in ethical way is a basis for long-term success.   |
| 5 Business should not be just about making profit. Businessman should be someone who contributes to cultivation of society by their behaviour and actions.  |
| 6 It is important because students should know that business is not just about making profit, but there is also certain common decency.   |
| 7 For long-term success in business.  |
| 8 In today's fast and over-mechanized times the ethic and morality are disappearing. Everyone is focused on performance and profit and that is bad for society. We should inculcate different priorities than just money in young people minds. |
| 10 The ethic is a basis for trustworthiness.  |
| 16 The end does not justifies the means.  |
| 18 It is not possible to live and make business without morality.   |
| 19 To avoid a lot of traps.   |
| 21 If we are supposed to be lead on business, it should be ethic business and we should know the rules clearly defined and introduced.  |
| 26 It is logical.   |
| 28 In Czech republic the ethic is limping a bit. In my opinion, ethic is an integral assumption to healthy society and business. In addition, the ethic is worth it - good company reputation is a basis.                                       |



Summary of the fields for question no. 4B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 13     | 100.00%    |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 5

5. Do you think hands-on experience is necessary part of specialized high school education?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 101    | 91.82%     |
| No (N)         | 9      | 8.18%      |
| Without answer | 0      | 0.00%      |

Summary of the field for question no. 5A

If yes, what form do you see the best?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 101    | 100.00%    |
| Without answer | 0      | 0.00%      |

| Answer   |
|--|
| 4 Working on particular tasks at companies.  |
| 5 To involve the students in teams working on real problems.   |
| 6 Hands-on experience with exactly given agenda, so the student really learns something practical.   |
| 7 Professional experience in companies.  |
| 8 In my opinion, the best form of practice is to work at company, where the student can go through different positions and experience different processes, which allows him to imagine the future work in wider context. |
| 10 From a week-long to 14 days long continuous internships.  |
| 16 Hands-on experience achieved at companies.  |
| 18 Long-term internships taking place in the graduation period lead by experienced specialists.  |
| 19 I do not know.  |
| 21 Close cooperation with person from the work field, which the students are preparing for.  |
| 26 Working directly in the company.  |
| 28 Working on individual project at external workplace, at company etc. and being supervised by experienced employees.   |

Summary of the fields for question no. 5B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 9      | 100.00%    |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 6

6. Do you consider the participation of businessmen and self-employed in tuition as important?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 90     | 81.82%     |
| No (N)         | 20     | 18.18%     |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 6A

If yes, please be more specific about the way:

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 90     | 100.00%    |
| Without answer | 0      | 0.00%      |
| Without answer | 0      | 0.00%      |

| Answer |  |
|--------|--|
| 4      | Lectures, excursions, competitions.  |
| 5      | Workshops, consultations. Leading some parts of tuition of specialized subjects, ff allowed by legislation.  |
| 6      | Lectures and discussions about how to run a business, what are the difficulties, how to start.   |
| 7      | Sharing experience, being a role model for the students, motivation.   |
| 10     | Teaching the examples from practice.   |
| 16     | Workshop.  |
| 18     | Workshops.   |
| 19     | I do not know.   |
| 21     | Interesting lectures where real and practical situations are presented, introducing the difficulties of the job but also joy and success coming from the work.         |
| 26     | It is good to let successful people give us advice.  |
| 28     | Providers of internships, workshops at schools.<br>Working on individual project at external workplace, at company etc. and being supervised by experienced employees. |

Summary of the fields for question no. 6B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 20     | 100.00%    |
| Without answer | 0      | 0.00%      |

| Answer |   |
|--------|---|
| 8      | Not directly in the tuition, the hands-on experience is important though. |

Summary of the fields for question no. 7

7. Do you think the tuition of general subjects (math, physics, history, foreign language, etc.) should contain practical examples such as maths: calculations of personal/household finances, calculations of profit, interest, taxes; foreign languages: writing CV and formal letter in foreign language?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 97     | 88.18%%    |
| No (N)         | 13     | 11.82%     |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 71

If yes, please give the examples:

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 97     | 100.00%    |
| Without answer | 0      | 0.00%      |

| Answer |  |
|--------|--|
| 4      | Examples written above.  |
| 5      | The subject of math should contain the practical application of what the students learn, to understand that math is a tool we use on everyday basis. In social science class I prefer less of memorizing of data, better connection with the context and larger extent of education of modern history so the children do not tend to read Aeronet and vote for the communists. Foreign languages - there is a lack of tuition of technical foreign language. |
| 6      | Math, foreign language, accounting.  |
| 7      | It would be more interesting for the students, thus they gain practical experience.  |
| 8      | Financial literacy is important for the students of both elementary and high school. Students who have experience with this kind of education often give their parents advice. To be able to calculate interests and wage, to be able to present themselves on the labour market and other skills are absolutely necessary for independent life of every individual.   |
| 10     | Students have to see the usefulness of the subject in practice.  |
| 16     | Writing, argumentation, gaining information.   |
| 18     | Writing the requests, complaint = administrative style, presentation, propagation, making a speech.  |
| 19     | I do not know.   |
| 21     | Definitely meet the education with practical situations. Foreign languages - communication with customers, writing business letters, math, physics - giving examples from particular professions, using wider context. No distinguishing math and physics, teaching calculations using in real situations.   |
| 28     | I agree with the examples written above.   |

Summary of the fields for question no. 7B

If not, why?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Answer         | 13     | 100.00%    |
| Without answer | 0      | 0.00%      |

| Answer |  |
|--------|--|
| 26     | Do not make walking calculators from the students. |

Summary of the fields for question no. 8

8. Information about taxes and Czech and European laws concerning business and support of entrepreneurship should be part of:

| Answer  | Number | Percentage |
|---|--------|------------|
| Specialized high school education. (SQ8001)                               | 83     | 75.45%     |
| Extracurricular education. (SQ8002)                                       | 32     | 29.09%     |
| They should not be part of education at specialized high school. (SQ8003) | 10     | 9.09%      |

Summary of the fields for question no. 9

9. Do you run some kind of program of business support for high schools students, or are you participant in some one?

| Answer         | Number | Percentage |
|----------------|--------|------------|
| Yes (Y)        | 18     | 16.36%     |
| No (N)         | 92     | 83.64%     |
| Without answer | 0      | 0.00%      |

Summary of the fields for question no. 9A

| Answer   | Number | Percentage |
|--|--------|------------|
| Classes focused on support of business, in addition to standard tuition. (SQ9001A) | 4      | 22.22%     |
| Business incubator/accelerator. (SQ90021)  | 5      | 27.78%     |
| Virtual student company. (SQ9003A)   | 9      | 50.00%     |
| Participation in events related to entrepreneurial spirit. (SQ9004A)               | 6      | 33.33%     |
| Other  | 2      | 11.11%     |

Summary of the fields for question no. 10

10. How do you evaluate the importance of education of entrepreneurial spirit at specialized high schools?

| Answer                   | Number | Percentage |
|--------------------------|--------|------------|
| Very important. (A101)   | 24     | 21.82%     |
| Quite important. (A102)  | 44     | 40.00%     |
| Important. (A103)        | 33     | 30.00%     |
| Rather important. (A104) | 6      | 5.45%      |
| Not important. (A105)    | 3      | 2.73%      |
| Without answer           | 0      | 0.00%      |

Summary of the fields for question no. 11

11. I am?

| Answer                      | Number | Percentage |
|-----------------------------|--------|------------|
| Student. (A1)               | 54     | 49.09%     |
| Teacher. (A2)               | 7      | 6.36%      |
| Employee/entrepreneur. (A3) | 49     | 44.55%     |
| Without answer.             | 0      | 0.00%      |





## ANNEX II

# PROPOSAL OF THE COURSE FIND YOUR INNER INVENTOR

| Day                    | Topic   | Content  |   |
|------------------------|---|--|---|
| 1.                     | Motivation and entrepreneurship                           | Who is an enterprising person?<br>Why do people start their business<br>How to start a business?   |   |
|                        | Personality of an entrepreneur and an enterprising person | Personal characteristics of an entrepreneur<br>The Timmons Model of Entrepreneurship<br>FACETS Model   |   |
|                        | Motivation for business                                   | Push/pull factors<br>Motivation 2.0  |   |
|                        | Business options  | Types of business (e.g., freelancing, startups, social entrepreneurship, etc.)   |   |
| 2.                     | Ideas and opportunities                                   | Where do the business opportunities come from?<br>How to detect opportunity?<br>When should we rather make a plan?<br>When should we rather act?       |   |
|                        | Business opportunities                                    | Definition of business opportunities.<br>Window of opportunity<br>Opportunity as a merger of interests, knowledge and contacts                         |   |
|                        | Trends  | Technological, social, demographic and political- regulatory   |   |
|                        | Problems  | Way of thinking "problem = opportunity"  |   |
|                        | Market niches   | Search for market niches   |   |
|                        | Business plan   | When and why to plan when to act<br>The basics of a business plan development  |   |
|                        | 3.  | Creativity and innovations   | How to develop your own creativity?<br>Where do innovations come from?<br>How to innovate successfully?                   |
|                        |   | Creativity and development of creativity   | Methods of creativity<br>Process of creativity<br>Development of creativity<br>Human-centered design                      |
| Innovation             |   | Sources of innovations<br>Examples of successful innovations   |   |
| 10 roles of innovation |   | The ten faces of Innovation by T. Kelley   |   |
| 4.                     |   | Resources and networking   | How to create, maintain and use contacts in business?<br>What are the necessary resources?<br>How to work with the risks? |
|                        |   | Networking   | Creation, maintenance, and use of social contacts   |
|                        | Risks   | Evaluation and management of risks Acceptable risk level   |   |
| 5.                     | Presentation and sale                                     | How to introduce and present yourself?<br>How to present your ideas?<br>How to successfully promote your product/service?<br>How to manage the growth? |   |
|                        | Self-presentation   | Nonverbal speech<br>Rhetoric<br>New forms of presentation  |   |
|                        | Presentation of the idea/product/service (elevator pitch) | Elevator pitch policy<br>Elevator pitch examples   |   |
|                        | Modern marketing and sales                                | Marketing in the time of the Internet<br>Advertising and sales promotion<br>Marketing communications   |   |
|                        | Growth  | Internal growth strategy<br>External growth strategy   |   |



# ANALYSIS OF EDUCATIONAL NEEDS OF THE STUDENTS

PROJECT

## FIND YOUR INNER INVENTOR



Co-funded by the  
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