Developing the Entrepreneurial University through Positive Psychology and Social Enterprise:

A Case Study of Curriculum Innovation in Russia

Philip Kazin, Stephen Hagen, Anastasiya Prichislenko, Andrey Zlenko

Received in April 2017

Filipp Kazin
Candidate of Sciences (History), Dean, Technological Management and Innovation Faculty, ITMO University. Address: 11/2 Chaikovsky St, 191187, Saint Petersburg, Russian Federation. E-mail: kazin@corp.ifmo.ru
Stephen Hagen
Professor Emeritus of the University of South Wales (UK). Address: University of South Wales, Pontypridd, Wales, CF37 1DL. E-mail: stephenhagenprof@gmail.com
Anastasiya Prichislenko
Head of Personal Development Center, Technological Management and Innovation Faculty, ITMO University. Address: 11/2 Chaikovsky St, 191187, Saint Petersburg, Russian Federation. E-mail: aprichislenko@gmail.com
Andrey Zlenko
Director of Center for Community Projects and Social Entrepreneurship, Technological Management and Innovation Faculty, ITMO University. Address: 11/2 Chaikovsky St, 191187, Saint Petersburg, Russian Federation. E-mail: anikspb@mail.ru

Abstract. This article provides an empirically-based insight into the operation and impact of socially-oriented entrepreneurship as an educational tool at the Russian Higher Education institution, ITMO University, St Petersburg. The experience suggests that consciously placing stress on the social and ethical dimension of entrepreneurship education provides a strong motivational factor which develops many students' interests towards contributing positively to society. The effective engagement of students in community projects creates a synergy between the project's practical objectives, students' awareness of self, and helps to refine the students' own life goals and values—invaluable for setting a career strategy.

Key words: higher education, entrepreneurship education, project management, socially-oriented entrepreneurship, the ITMO University, curriculum, motivation, students' life plans.

DOI: 10.17323/1814-9545-2017-3-110-131

1. Introduction

The ITMO University[1] case study focuses on an educational experiment to merge entrepreneurship skills with social and community values and evaluate the impact on students' own personal development and their resulting behavioural changes. This type of bottom-up student-centered case study of socially-focused entrepreneurial education has rarely featured in the literature on entrepreneurialism in Higher Education. Case studies of entrepreneurship education, written by the practitioners themselves, have been limited, with the exception of the eleven case studies in Coyle et al. [2013]. The emphasis in the past has largely been on corporate entrepreneurialism in universities [Burns, 2005], 'triple helix' models, technology transfer ('research output into society') processes and defining the place of entrepreneurship education in top-down 'Third Mission' initiatives and its relationship to *knowledge exchange* [Hagen, 2008]. Examples of socially-oriented entrepreneurial education in Russia, with insights and illustrations of entrepreneurship and innovation with a social outcome and community focus, are rare.

2. Entrepreneurial Education in the Literature

There is much debate in the literature over the breadth of different interpretations of entrepreneurialism in Higher Education [Nelles, Vorley, 2010; Hagen, 2008]. In some countries, such as the UK, the entrepreneurial transformation of Higher Education became an issue for public policy [Godin, Gingras, 2000]. For example, this led to subsidies like the UK's Higher Education Innovation Funding (HEIF) (http://www.hefce.ac.uk/kess/heif/) designed to trigger commercialization processes in Higher Education, largely with the intention of more effectively transferring university inventions into the national economy.

This is not true in the Russian Federation. The most recent Russian federal investments in Higher Education have targeted the enhancement of research outputs (e.g. the 'National Research University' (NRU) program), rather than entrepreneurship education, and unam-

[1] ITMO University—St. Petersburg National Research University of Information Technologies, Mechanics and Optics—is one of the leading higher education institutions in Russia, providing training and research in advanced science, humanities, engineering and technology. Founded in 1900, it acquired the status of the "National Research University" in 2011 blending the culture of innovation and discovery with world-class education. It is located in the heart of St. Petersburg. The University serves over 13,000 students. Its 15 departments offer 104 bachelor degree programs, 39 specialist degree programs, 146 master degree programs, 45 additional training programs, as well as doctoral and postdoctoral programs. Some of its best-known research work is in Photonics, Fine Mechanics, Computer Science and Information Technology. ITMO University has been selected to become part of a distinguished group of Russian universities to participate in the "5 to 100" federal program aimed at helping them reach the top 100 ranking in the QS World University Ranking by 2020. It is also the only six-time champion of the World Championship in Programming (ACM International Collegiate Programming Contest).

biguously attempted to improve the ratings of Russian universities in global university rankings (e. g. the '5–100 Competitiveness-Growth' program)[2].

A frequent criticism of entrepreneurialism in Higher Education is its overly narrow focus on top-down tendencies, and notably the five-element 'entrepreneurial architecture' of structures, systems, strategies, leadership and culture [Burns, 2005; Nelles, Vorley, 2010], which downplays entrepreneurial education despite its rapid growth in Italian universities [Riviezzo, Napolitano, 2010].

Shattock [2008] extended entrepreneurialism in universities beyond the mere economic to social and community development. Gibb [2013] places great emphasis on highlighting the growing pressures to broaden student experiential learning during the early part of the 21st century, particularly with the pressures to grow the small and medium enterprise sector of the economy, including social or community enterprises.

What is clear from the ITMO Case Study is that new 'social enterprise' ventures excite students with their societal or social purpose and have the added value of engaging with a wider range of social and community partners, including charities and organizations aimed at the public good.

This wider 'social' orientation, which is increasingly evident in universities and involves significant interaction with not-for-profit organizations, is re-echoed by Baker [2013], who argues that, in his institution—Brighton University, UK—the commercial imperative of exploitation for university gain is not (and is unlikely to be) one that drives strategy or action in the future. He goes further by stating that *social engagement resonates strongly as a basis for the university's pursuit of innovation* [2013:30].

Brighton University's knowledge exchange is primarily determined by local, rather than, institutional need. There are other movements evident inside universities suggesting that entrepreneurship education is developing in different forms with a less utilitarian focus than has been the case in the past. This has been a tendency which has arisen more from within teaching-led public or community universities, whose mission is less determined by the research imperative, and where the teaching focus gives rise to wider opportunities for student experiential learning with extra-curricular experiences alongside entrepreneurial and enterprise skills development [Gibb, 2013].

Nonetheless, the ITMO case study suggests a new direction towards *socially-oriented entrepreneurial education* marked by a greater emphasis upon student ownership of learning and engagement in assessment processes; where efforts are being made to engage the

[2] See Interfax on Russian Universities: http://www.univer-rating.ru/rating_common.asp

local community and other 'social' stakeholders in the processes of curriculum design, delivery and student competitions. The ITMO case study illustrates a move from Mode 1 forms of learning, where the university is configured as a space for discovery and learning, to a Mode 2 type of organization with high levels of engagement in learning and knowledge exchange with a wide range of stakeholders.

ITMO's example of *socially-oriented entrepreneurial education* fits with Gibb's [2013] Mode 2 description of an organization with high levels of engagement in learning and knowledge exchange with a wide range of stakeholders. It led to a strengthening of the university's capacity for knowledge exchange and stimulated closer partnerships between students and external stakeholders, with more focus on social needs, learning from practice and the discovery of new ways of expressing, extracting and distributing knowledge.

In the Mode 2 model, knowledge development and production becomes more contextualized to different situations, more problem/issue centered and more reflective of use in practice. This demands more trans-disciplinary approaches which, in ITMO's case, has led to the creation of new interdisciplinary concepts and paradigms, notably, for example, in the introduction of the Life Navigation program.[3]

In a rapidly changing world the mission of ITMO University as a socially responsible institution focused on the development of the individual acquires a particular urgency [Kivinen et al., 2016]. The education of graduates capable of solving the complex problems of today's society necessarily has to include a practical component. ITMO University has implemented a methodological approach based on the inclusion of projects to provide students with practical experience. Such an approach follows Dewey's pedagogic model [Tomina, 2011], which has also been adopted, and shown to be effective, in influencing the educational system in a number of countries [Rogacheva, 2016].

One major criticism of Dewey's work concerns his overly narrow focus on acquiring experience. A worthy practical project involves undertaking actual and useful tasks in the locality. Practical projects in the curriculum need to include a series of everyday material tasks in order to be measured for assessment purposes. However, an overly strong concentration on practice alone does always allow the student the opportunity to relate the experience of the project to his or her coursework or to acquire a broader understanding of project management and its systematic role in problem-solving beyond the narrow confines of the task in hand. In the ITMO University case study there has been an attempt to unify these two approaches. First year students undertake the "Life Navigation" program in order to develop an understanding of the interconnectedness of such diverse social projects and how they can more broadly impact on society as a

[3] See in more detail below.

whole. The second year involves a competition between different social projects, called “People need you!”, in which practical problems are solved by students using a service learning approach. In this, the emphasis is on them understanding the clearly defined link between the skills acquired through their social and community project activities and the development of a more generalizable socially-oriented entrepreneurial approach to life, including a passion for changing things for the better.

3. Entrepreneurship Education at ITMO University

According to GUESSS[4], entrepreneurship courses were not available to 60% of Russian university students not specializing in Economics, or related subjects like Business Studies, in 2014. Moreover, at the same time, Russian students were ready to commit up to 30% of their time to entrepreneurship courses (which is 5% higher than in comparable surveys of the HE sector outside Russia).

ITMO University has adopted the Glukhikh [2014] framework for entrepreneurial education, in which he asserts that in the process of entrepreneurship education “knowledge and competences are learned and applied much more efficiently if they are taught in a systematic, logical sequence”. He proposes three phases for realization of the entrepreneurial potential:

1) *Conception Phase*. This includes how a person’s activities can be adapted to reinforce his/her entrepreneurial capabilities, including the presence of his/her inner reflection on the social aspects and stimulating the readiness of the individual to become enterprising and create the necessary conditions and resources;
2) *Formation Phase*, which consists of two sub-phases:
a) *Preparation sub-phase*. This starts after a person has taken the decision to start a business and includes information gathering and preparatory work;
b) *Creation Phase*, which starts at the registration of the individual’s business and continues for three years (according to Russian law) or until business closure;
3) *Development Phase*, which represents business activity after the first three years.

It is the University’s view that the knowledge component of entrepreneurial education, that is, teaching ‘about’ entrepreneurship, rather than teaching ‘for’ entrepreneurship, does not, by itself, lead to entrepreneurial thinking, it is the combination of both theory and practice that optimizes the process. A critical success factor, however, is

[4] Global Universities Entrepreneurial Spirit Students’ Survey (Russia, 2013–2014, pp. 1–52, published online, August 2014) http://www.guesssurvey.org/

the support from the top: the Rector, Vladimir Vasilyev, has committed the university to developing entrepreneurial thinking in its students appropriate to the requirements of the modern knowledge economy [Vasilyev, Sukhorukova, 2014], referring in particular to: *taking the initiative, demonstrating creativity and accepting responsibility*—capabilities which, teaching staff believe, can be systematically nurtured in university.

There are other essential success factors: firstly, practice-oriented education is reliant on students' high motivation and, secondly, on the skill of the teaching faculty in delivering an enterprise-embedded curriculum. Thirdly, there are environmental variables: students can additionally absorb entrepreneurial characteristics if submerged in a university like ITMO where there is a pervasive culture of entrepreneurship following the four-phase Glukhikh [2014] model.

The conception phase at ITMO University is based on the selection of projects which can be systematically integrated within Bachelor's and Master's degree courses and which are aimed at the development of students' universal core competences (including 'soft skills'). Co- and extra-curricular programs may be included at the heart of the system, e. g.

3.1. Bachelor's Degree Level

First Year. Life Navigation course. This course was validated by the Faculty of Technology Management and Innovation in the autumn semester, 2015. Nine groups of first year students accomplished this course.

Second Year. Project Management course (including voluntary participation for all interested students in a social or community enterprise project competition called "*People Need You!*"

Third Year. Entrepreneurship Fundamentals Course. Its aim is the implementation of commercialization of projects spun out of ITMO University's scientific laboratories and research groups. It incorporates a student competition, 'Commercialization of Innovations', within the framework of this course.

Fourth Year. The Bachelor's degree Finals examination became a tool for the practical assessment of the commercialization activity from the spun-out research, or projects, undertaken on courses a year earlier. Following a selection process, the most viable projects were accepted onto a full-scale acceleration program based in ITMO University's business incubators, called SUMIT and Future Technologies business accelerators.

The step-change in the University's thinking, which led to this change in curriculum development, came out of the belief that instigating innovation in society and the economy was, in essence, a people-issue, not a technology-related issue. The real challenge in developing innovation in the knowledge economy was changing people's motivation, transforming the culture: i. e. making people more adaptable and flexible, ready to 'think change', accept it and then implement it.

The underlying academic strategy was to ensure students on ITMO University's Bachelor's and Master's degrees acquired a range of entrepreneurial competences, thus enhancing their chances for future employability. This was set out in three principles of the University's declared mission:

- *person-centeredness,* which is the focus of the first year's Life Navigation course,
- *social responsibility*, achieved through social and community enterprise projects and in the framework of the second year social enterprise competition, "People Need You!",
- *entrepreneurship*, achieved in Years 1 and 2 through the values and competences taught and developed from the commercialization projects, as well as from the third and fourth years of their degree and, later on, from Master's degree study.

4. Introducing Community Project Management into the Education Process

According to Etzkowitz [2013], the "fourth helix element"—the civic society—is a critical stimulus to innovation, by which innovations can often appear in response to social requests, or "societal challenges". The success of innovations coming to market depends on the interaction of the three other triple helix elements—*government, Higher Education, business*—[Etzkowitz, 2008] often in response to the fourth.

If this can be extrapolated to the formation of business strategies, the one driver which is often overlooked is a company's social, or more broadly, its ethical strategy. This element has come to the fore with examples of investors choosing whether to invest or not on the basis of the social, ethical, or community strategy of the target investment company. Certain investors prefer only 'green' investments or 'ethical' investments, including those approved by certain religions or faiths over others. For many students today, the ethical dimension of a business, whether profit-making or not-for-profit, is an essential discriminating component of a company's strategy. A good example here is the TOMS Shoes success in the American shoe market.[5]

What does this increasingly-evident behavioural tendency imply for training or developing individuals in innovation, creativity and entrepreneurship? In its role as a leading technology university, ITMO University has adopted the mission of educating students to become future managers of innovation and technology entrepreneurs, but this aim has now been refined with reference to the social or community context of a future venture.

The implication of this means fostering students' awareness of the social or community dimension of their future business, or employment, and of the social value of the product or service. This means

[5] See details at: http://www.toms-russia.ru/about.html

nurturing his/her entrepreneurial competence within the context of the social or community values—the society where he/she lives—and developing their perception of his/her civic awareness and social responsibility.

In the ITMO learning model, entrepreneurial education is deliberately and systematically embedded into project activity and set within the local social or community context. A revised learning methodology is employed in developing the new-style entrepreneurial student, which is termed *service learning*. This method is based on combining the teaching of project management and entrepreneurship competences within a community-focused environment with a social purpose. *Service learning* is a powerful means of nurturing socially-aware people. It teaches students team-working, tolerance, active participation in improving the local environment and applying these competences in practice. Initially, this awareness is delivered through the Life Navigation course.

5. Life Navigation and Social/Community Project Management

The Life Navigation course at ITMO University focuses on a student's personal development and helps create his/her plans and dreams (see Annex). The University's research shows that students who from the first year link their learning goals to their life goals achieve these goals much faster and easier than those who do not do this. A constructed image of a preferred ideal future helps students make effective choices and facilitates personal and professional development. The Life Navigation course raises the student's self-awareness, which, in the experience of the University, is the starting-point for an individual to reach their own personal entrepreneurial potential.

The University started teaching 'Life Navigation' in parallel to entrepreneurship in 2015 in order to initiate a stage of self-reflection, including personal exploration and development of students' innate entrepreneurial capabilities, leading to improved self-evaluation, social and psychological preparation, with an analysis of external conditions and resources.

The model is a practice-oriented course aimed at teaching students to set their own goals and priorities, determine necessary resources, create self-development programs and match content to goals. The aims and content of the ITMO Life Navigation program draw on the work of two different schools of modern psychology—'Positive Psychology' and 'the Subject-Genetic Approach' [Ognev, Gonchar, 2013].

Positive Psychology focuses on developing a positive attitude towards problem-solving (Seligman, 2006), including the study of positive feelings, revealing positive aspects of the personality, intellect and physical development, and recognizing the positive features of society's institutions of society (such as democracy and family) to enhance the development of the best human qualities. The second school—

Subject-Genetic Approach—asserts that a person needs to take responsibility for his/her personal actions, results, successes and losses.

The original Life Navigation course was conceived by Ognev & Gonchar [2013] at the Sholokhov Moscow State University solely for the Humanities but has been adapted for technology faculties at ITMO University. There are similar examples of curriculum innovation in a range of top universities. Most are designed to equip students with 'life skills' and have a range of emotive titles: 'Wisdom curriculum' (Sternberg, Yale University), 'Going for the goal', Penn Resiliency Program (Seligman, University of Pennsylvania), 'Personal synthesis program' (Great Britain) and 'Happiness' (Tal Ben-Shahar, Harvard University); 'The Art and Science of Happiness' (Dr. Holly Sweet, MIT; e. g. http://ocw.mit.edu/courses/experimental-study-group/es-s60-the-art-and-science-of-happiness-spring-2013/).

5.1. Review of the Impact of the Life Navigation Course

The creation and inclusion of this course was prompted by external stakeholders. Feedback from local employers confirms the importance of adding this course for students. According to one employer, Irina Muraviova, Staff Director of the Netrika Company, students fail to find employment for a number of reasons:

- The first failing noted by employers is students' inability to formulate what they really want, i. e. they do not have even a rough life-plan. In this situation, the employer is at a loss to understand what the individual's life goal might be.
- The second is a lack of awareness of their own abilities and inabilities. Essentially, the implication is that the student has little knowledge of what he/she lacks in his/her professional life. She/he cannot make progress without self-knowledge. Muraviova proposes that students should read the CVs of successful job applicants and compare their own.

This justifies the addition of a special seminar on designing an effective CV as part of the Life Navigation Course.The third most frequent discovery is that a student's lack of time-planning skills is a major failing. The employer feedback was then incorporated into the course, *Life Navigation.*

5.2. Results from the Life Navigation course 2015

More than 120 first year students of the Faculties of 'Technology Management & Innovation' (FTMI) and 'Natural Sciences' completed this course in the Autumn Semester 2015. Students' feedback questionnaires showed that the course helped to visualize their dreams, set concrete goals, determine the necessary resources for their achievement, create action plans and self-development programs, find companions and 'start to act'.

A total of 77% of the students responded that the Life Navigation course had helped them to understand themselves better, deter-

mine how to progress and had helped them not only in personal matters, but also in learning other subjects. An example of the impact of the course is based on a series of practical exercises ('Course activities'), one of which demonstrates how students' attitude toward their life plans has changed during their first academic semester.

Case Study of Course Activity. In this particular exercise students make a 2–3 minute video in which they present their life plans especially with reference to the dimensions of family, work, study, finances, hobby, etc. Each student has to set priorities, choose challenges and set him or herself the targets they expect to achieve in them. Russian psychologists relate such descriptions of life aspirations to the category of dreams, which they define as people's ability to model their future and themselves in it (Dodonov, 1978). To outline a route to their dream is the task of the following stages of the course.

Students formulated their career goals as follows: "to find work that gives you pleasure", "to work in a profession I have gained", "after university graduation, to find my place in the world". The topics of family, health and financial well-being also turn out to be important. Students remarked that they would like to "create their own family and also support their parents", "do sports and care for my health", "keep up my hobby, maintain a healthy lifestyle and keep my body in shape".

Four months later, at the end of the course, the students were told again to remake the video about their life plans. In this video, the most significant changes were as follows: in their responses taking the course was perceived by the vast majority (86%) as helping students achieve the first stage in the realization of their life-plans. One student stated: "I was setting priorities and I noticed that in order to achieve my goals I need to complete the university well, so I had to assign top priority to the study".

After a four-month period, the students not only indicated what they would like to achieve, but also set out how they would achieve it: to follow their own pursuits, to network with important people, to plan their time effectively. This marked a change of formulation from "I would like" to "I'm going to achieve this, and I have done ... for this (purpose)", showing an essential change of students' attitude toward their own life plans; moving from stargazing to visualizing dream-goals.

Both videos were analyzed to find out other changes were occurring in students during their first semester. Most students start the second video with the words: "Nothing has changed for me globally, but...". This reflects the tendency of young people to expect some radical changes from their first year at university, which is characteristic of the "generation Z" who are now entering universities.

Following the "but", students began describing their particular discoveries and changes in their life, quotations from their feedback include: "I started to write down my plans", "a solution can always be found", and "we need learn from our mistakes", "the great is built out of a tiny start", so "we need to learn to control our lives", "I recognized

that nothing may be postponed until the last minute", "I have learned to express my thoughts", and now "I'm planning every day", "we need to do everything on time and postpone nothing till the last moment", "the main thing is to analyze myself and my own activities".

Teaching staff noted that students' plans became more structured and concrete. They have conceived which plans are needed to achieve their goals; their obstacles were analyzed within the course to help them to coordinate their activities in order to meet deadlines for the planned objectives.

6. Involving Students in Social Enterprise and Project Planning

6.1. The Competition 'People Need You'

This competition is designed to combine elements of pedagogical, educational, and innovative learning activities in order to deliver a social enterprise project. The competition consists of four stages.

At the first stage, students apply for participation, design project proposals and arrange interaction with non-governmental organizations (NGOs) which provide facilities for project implementation.

The second stage includes a series of training seminars and master-classes in the field of project activities and social enterprise planning organized with representatives of non-profit-making organizations and universities in St. Petersburg and other Russian cities participating in the network program "University and Society" (http://socialprojectspb.ru). The third stage involves the practical realisation of the social projects in cooperation with the relevant NGO. The length of this stage is typically from 3 to 5 months depending on the content of the project. The fourth stage involves report preparation and pitching to the jury board.

The story of the competition "People need you!" illustrates how quickly the socially oriented activities have been developing during the recent year first in a particular University, then in the city of St. Petersburg and then in the country and internationally.

Only 60 students took part in the St Petersburg universities' first competition in 2013 and only 18 community projects were implemented. The organization of the competition resulted in a little growth in the number of students' projects in St. Petersburg by 2014: 200 students from 10 HEIs participated in the competition, implementing 48 projects. A series of training seminars was carried out as part of the competition to address project management and social enterprise projects, after which all participants received individual advice from relevant experts.

In 2015, the inter-university competition "People Need You!" was conducted in cooperation with a prominent international university partner—the University of California, Los Angeles (UCLA), USA. This involved exchanging experience in the field of social enterprise, project planning and entrepreneurship. The purpose was to review international best practice in the field of social entrepreneurship and to develop universal entrepreneurial competencies ("soft skills") in students

from different countries. In June 2015, a decision was taken to conduct the first *International Festival of Social Entrepreneurship* (IFSE) in St. Petersburg. The festival was conducted in association with two partner universities—UCLA and Zhejiang National University, China, in the form of a short-term acceleration program for students of the partner universities. During the project, the contestants implemented their projects in China, USA and Russia using a common general approach and methodology. Later on, in June 2015, they participated in a face-to-face acceleration program in St. Petersburg where, on the basis of their projects, they developed business-plans, financial forecasts and presentations on the further commercialization of their projects.

In 2016 the Competition "People need you!" grew into a nationwide project involving 81 HEIs from 48 cities and 37 regions of Russia; 256 socially-oriented (or simply 'social) projects were implemented by participating students and the general network of University-based socially oriented project management was created. By the end of 2016, the second international Festival of Social Entrepreneurship had been held in ITMO university and teams from India and Switzerland were added to the Russian-American-Chinese triangle.

The question then arises about how the greater participation of students in socially-oriented projects should be interpreted. At present there is little evidence to suggest a rising level of interest from students in socially-oriented projects as a matter of principle. On the other hand, there is a *prima facie* case of Russian students' growing interest in social projects as instruments for developing their own life skills and competencies and for designing future career pathways. In other words, the rising interest in undertaking social projects can be reduced to two factors:

1. The awareness that they can bring real change by their own actions;
2. The wish to have their achievements recognized by external reference (e. g. the University assessors as well as social stakeholders).

Social projects often provide an opportunity because they can be short-lived and can bring quick and tangible results. This dual motivation is more powerful: the change is tangible and the reward of external recognition is rapid. The reward does not have to be material recognition, it can equally be non-material or symbolic; e. g. public praise or expressions of respect from members of the local community. Not only do social and community projects serve as very fruitful ground for developing practical competencies in students who employ their energy and motivation in a productive and structured manner. Social projects help them to realize themselves, receive emotional satisfaction and develop their own significance within society.

This leads to a latent demand for social projects among students, which needs to be formulated, guided and placed into a clear institu-

tional and assessable format. The experience of implementing this at ITMO University by the completion of the "People need you!" program has proven to be positive. This successful outcome was further borne out by data from the Vladimir Potanin Foundation, which sponsors student's social projects[6], which identifies how students use social projects as the basis for their career development, especially through social networking, which underlines the educational value of including these in the curriculum.

7. The Evolution of the Three-stage Cycle of Entrepreneurial Education at ITMO University

The GUESSS national report states: "the HEI can become a center for the creation and application of knowledge for regional socio-economic development and educate students not only as professionals in their fields, but also as entrepreneurs creating innovations in the workplace".[7]

The development of a system of entrepreneurship education shall become one of the priority directions. This system shall be able to nurture the entrepreneurial intentions of students and provide them with various educational services plus institutional and resource support. This requires consideration of the necessity to modernize existing education systems to take into account contemporary trends and to create infrastructure facilitating not only the introduction of entrepreneurship courses, but also initiation of support projects for students' entrepreneurial intentions. In other words, it is a necessity to implement full-scale changes and formation of a new educational trajectory is a challenge of today.

Modern higher education in Russia has entered a period of radical transformation characterized by the fact that a graduate's success in the labor market depends now not only on his/her professional knowledge and capabilities, but also on his/her motivation, creativity, and adaptability.

These qualities have always been useful for graduates, but under the conditions of the information society, they become critical. The higher technical education shall be oriented not only towards the creation of professional competences, but also to the formation of social skills necessary for a young specialist entering social and economic life. It shall not only prepare students for professional activity with utilization of modern technologies, but also promote them to a new cultural level corresponding to these technologies.

On the basis of this understanding, ITMO University has formed a general cycle of socio-entrepreneurial education consisting of the following sequence of stages:

---

[6] See 2016 Yearly Report of the Vladimir Potanin Foundation http://www.fond-potanin.ru/media/2017/05/24/1269025795

[7] Global Universities Entrepreneurial Spirit Students' Survey (Russia, 2013–2014, pp. 1–52, published online, August 2014) http://www.guesssurvey.org/

Stage 1. In the framework of the general block of social science and humanity disciplines (1–2 years), students acquire knowledge, skills and habits of organizational and managerial activities to develop practical competences for effective future project activity and further professional activity ("soft skills"). In the process of learning these disciplines or during his/her extra-curricular work a student (or a team) may conceive an idea (a project idea).

Stage 2. Students who have a project idea participate in different student contests, for example, the "People Need You!" contest described above. Through realization of their projects in the framework of contests, students consolidate their acquired competences. The projects are registered in portfolios for subsequent obtainment of the practical experience certificate.

Stage 3. Students' projects undergo expert review in regard to commercialization prospects. The most successful projects go into the business incubator of ITMO University and/or a startup acceleration program which make projects into startups aimed at a market launch of the project's products or service.

In this way, generation and development of social enterprise projects in the university becomes a continuous sustainable process, leading to:

- education of students' minds, their social awareness, and character;
- societal and social benefits;
- improvement of the project-to-innovation cycle at the university;
- regular transformation of students' projects into startups and small innovative enterprises.

8. Conclusion

The case study of ITMO University illustrates how student voluntarism is being more widely adopted together with a social enterprise orientation. This is somewhat unusual in the context of Russia, a country which is known for its stronger emphasis on a more directive curriculum, ministerial interventions and the fixed requirements of technology-dominated curricula. The often latent demand from students to engage with, and thereby add greater value to, their society and local community is recognized in many international universities as a driver for change. Sir Peter Downes, Vice-Chancellor of Dundee University, a highly-ranked UK university, argues that the answer to producing more entrepreneurial graduates will not come solely or mainly from formal approaches to teaching, but it will come instead from the example of a university that is fully engaged with the economic, social and cultural needs of society [Downes, 2013].

To be effective, entrepreneurship education needs to generate a high level of student motivation. Motivation often increases when there is a personal identification with the social or community aims of social and community projects. The Life Navigation course described in the Case Study helped to stimulate motivation and provided the tools necessary for the achievement of students' goals.

In this regard, the Life Navigation course was an important step towards the development of *socially-oriented entrepreneurial thinking*—for example, it taught students to pose questions and seek structured answers from which they could formulate their own life plans in the context of their local community and society.

This course is only one step in the development of comprehensive entrepreneurial education in ITMO University. But it is an essential one. The evidence suggests that the student turns into an active, motivated person with the effective tools for self-analysis, able to evaluate their environment in the context of his/her tasks and goals. The earlier a student forms such an analytical matrix in his/her mind and learns to use it during problem-solving, the earlier he/she is ready for practical entrepreneurship and prepared to join the labor market.

ITMO University's experience demonstrates the presence of a high latent demand for project-management skills and the competence to undertake projects and ventures within a social and/or local community context. This in turn creates an ongoing demand from students for such skills thus enhancing and embedding a socio-entrepreneurial culture and spirit across the University, in turn producing a self-generating interest in following this pathway from incoming students.

The Life Navigation course complements entrepreneurship education. It cannot by itself achieve the same results and needs to be combined. The model is transferrable to other HEIs. The form of the social enterprise competition "*People Need You*!", for example, has also been piloted at the federal level in HEIs and supported by the Ministry of Education and Science. The next stage, which is already in progress, is to organize a similar competition in Russian secondary schools and take the concepts into a younger stage of thinking.

The ITMO experience in the Russian context demonstrates the link between a course of study and the development of students' own personal and social values when focused on the broader areas of society's needs. The 'Life Navigation' course taken together with the "People need you!" competition constitute a program concerned with developing the individual's capacity to embrace a combination of experience/knowledge and deeper understanding of a world of uncertainty and complexity within a context of social awareness.

Annex. Life Navigation Course Content

The course consists of ten modules:

1. "Life aspirations concentrated in a dream": setting life's overall purpose.
2. "A tree of life goals": a decision-tree of mid-term and short-term goals.
3. "Resources": how to acquire resources necessary to achieve the ends; managing external resources (money and time) and understanding one's own abilities (and weaknesses).
4. "Interrelationship between personal qualities with competences": finding opportunities in everyday university life for one's professional growth.
5. "Self-development program": drawing up an action plan to attain one's goals (milestone targets etc).
6. "Overcoming obstacles": ways of overcoming barriers and finding alternative routes to the goal.
7. "Ideal Me": self-analysis and overcoming inner failings and how to undergo inward transformation.
8. "Companion map": essential contacts to make. Developing one's network.
9. "Everyday regular activities": employing time management methods and developing effective habits.
10. "Self-motivation": overcoming one's inner personality failings.

References

Baker C. (2013) Creating Innovation in Partnership with Local Communities. *The Entrepreneurial University: From Concept to Action* (eds P. Coyle, A. Gibb, G. Haskins), London: NCEE and UUK, pp. 31–33.

Burns P. (2005) *Corporate Entrepreneurship: Building an Entrepreneurial Organization*. New York: Macmillan.

Clark B. (1998) *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*. New York: IAU.

Coyle P., Gibb A., Haskins G. (2013) *The Entrepreneurial University: From Concept to Action*. London: NCEE and UUK.

Dodonov B. I. (1978) *Emotsiya kak tsennost* [Emotion as a Value]. Moscow: Politizdat.

Downes P. (2013) Achieving Impact through Partnership. *The Entrepreneurial University: From Concept to Action* (eds P. Coyle, A. Gibb, G. Haskins), London: NCEE and UUK, pp. 34–37.

Etzkowitz H. (2008) *The Triple Helix: Industry, University and Government in Innovation.* London: Routledge.

Etzkowitz H. (2013) *Can a Teaching University Be an Entrepreneurial University? Civic Entrepreneurship and the Formation of a Cultural Cluster in Ashland, Oregon*. CIMR Research Working Paper Series Working Paper No 11. Stanford: Stanford University.

Gibb A. (2013) The Entrepreneurial Concept: 20 Key Questions. *The Entrepreneurial University: From Concept to Action* (eds P. Coyle, A. Gibb, G. Haskins), London: NCEE and UUK, pp. 10–17.

Glukhikh P. (2014) Predprinimatelskie kompetentsii: otvet na novye zaprosy [Entrepreneurial Competences: Answer to New Requests]. *Sbornik tezisov dokladov mezhdunarodnoy konferentsii «Formirovanie professionalnykh*

predprinimatelskikh kompetentsiy molodyozhi v protsesse obucheniya predprinimatelstvu» [Proceedings of the International Conference "Formation of Professional Entrepreneurial Competence of Young People in the Process of Entrepreneurship Education"], Moscow: Moscow University for Industry and Finance "Synergy", pp. 220–223.

Godin B., Gingras Y. (2000) The Place of University in the System of Knowledge Production. *Research Policy*, vol. 29, no 2, pp. 273–278.

Hagen S. (2008) From Tech Transfer to Knowledge Exchange: European Universities in the Marketplace. *The University in the Market*, vol. 84, no 10.

Kazin P., Lutsenko A., Makarchenko M., Zlenko A. (2015) Opyt upravleniya izmeneniyami v sotsialno-gumanitarnom bloke tekhnicheskogo vuza (na primere Universiteta ITMO) [Experience of Change Management in the Social Science and Humanity Block of a Technical Higher Education School. *Journal of University Management: Practice & Analysis*, no 4, pp. 43–55.

Kivinen O., Piiroinen T., Saikkonen L. (2016) Two Viewpoints on the Challenges of ICT in Education: Knowledge-Building Theory vs. a Pragmatist Conception of Learning in Social Action. *Oxford Review of Education*, vol. 4, no 4, pp. 377–390.

Nelles J., Vorley T. (2010) Entrepreneurial by Design: Theorizing the Entrepreneurial Transformation of Contemporary Universities. *Industry and Higher Education*, vol. 24, no 3, pp. 157–164.

Ognev A., Gonchar S. (2013) Pozitivnaya psikhologiya v sisteme nepreryvnogo professionalnogo obrazovaniya (na primere kursa «Zhiznennaya navigatsiya») [Positive Psychology in the System of Continuous Occupational Education(for Example, the Course «Vital Navigation»)]. *Lifelong Education,* no 2, pp. 85–90. DOI: 10.15393/j5.art.2013.2088

Riviezzo A., Napolitano M. (2010) Italian Universities and the Third Mission: A Longitudinal Analysis of Organizational and Educational Evolution towards the 'Entrepreneurial University'. *Industry and Higher Education*, vol. 24, no 3, pp. 227–236.

Seligman M. (2006) *Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment*. New York: Simon & Schuster.

Rogacheva Y. (2016) The Reception of John Dewey's Democratic Concept of School in Different Countries of the World. *Espacio Tiempo y Education*, vol. 3, no 2, pp. 65–87.

Shattock M. (2008) *Entrepreneurialism in Universities and the Knowledge Economy: Diversification and Organizational Change in European Higher Education*. Maidenhead: Open University.

Shirokova G., Tsukanova T., Bogatyryova K. (2014) *Global University Entrepreneurial Spirit Students' Survey: National Report Russia 2013/2014*.Saint Petersburg: Saint Petersburg State University.

Tomina E. F. (2011) Pedagogicheskie idei Dzhona Dyui: istoriya I sovremennost [Pedagogical Ideas of John Dewey: History and Contemporaneity]. *Vestnik of Orenburg State University*, no 2, pp. 360–366.

Vasilyev V., Sukhorukova M. (2014) Razvitie predprinimatelskogo myshleniya I novye podkhody k praktikoorientirovannomu obucheniyu predprinimatelstvu v vuze: opyt magistratury na baze inkubatora [Development of Entrepreneurial Thinking and New Approaches for Practice-Oriented Entrepreneurship Teaching in Higher Education School: Masters Program Experience Based on an Incubator]. *Innovations*, no 8(190), pp. 51–54.

Vasilyev V., Toyvonen N., Kazin P., Yanykina N. (2014) Innovatsionnaya sistema Universiteta ITMO. Itogi I perspektivy program razvitiya [Innovative Ecosystem of ITMO University. Results & Prospects of Development Programs]. *Innovations*, no 8 (190), pp. 27–34.

Yuryeva T. (2007) *Vliyanie mechty kak modeli budushchego na lichnostno-professionalnoe razvitie studenta* [Impact of a Dream as of a Model of Future on Personal and Professional Development of a Student] (PhD Thesis), Tambov: University of Tambov.