PUBLIC AND PRIVATE INVESTMENTS INTO PROMISING EDTECH PROJECTS

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Abstract: Based on the analytical review of the world market of EdTech startups, the paper is aimed at finding out the most relevant methodological and practical aspects of investment support of promising educational projects, with trends of the modern educational industry taken into account. Methodological framework of the research consists of the human capital theory, investment management concepts, and the methods of didactic heuristics and coaching. In this paper, attractive for investors sectors of Russian education have been identified; the relationship between development trends in Russian education and implemented ET projects has been established; the expedience of investing into new focus areas of further education based on personalized self-learning path technologies has been substantiated.

Keywords: EdTech startups, investment support, coaching toolkit, personalized self-learning path, quantitative indicators, effectiveness of ET projects.

1 Introduction

At present, public investments are redistributed from the sectors of information and communication, biotechnologies toward those of industrial technologies; meanwhile, however, investments into EdTech, or education technology, startups are growing rapidly: from USD 500 million back in 2010 up to USD 7 billion in 2019 (Darovskaya, 2021). Investments into ET startups create the basis for optimal choice of the most promising projects which are in line with the principal development trends both in the world educational space and the Russian educational industry.

According to experts, opportunities for growth will be biggest in such educational segments as further professional education and skills upgrade for specialists (Kuzmin, 2021). Practice shows that in the majority of projects in this sphere, it is not only new information and communication technologies that are essential for higher effectiveness of absorbing the information but also mentors, advisors, and teachers who form personalized self-learning paths jointly with their students. As a rule, building and fulfilling personalized self-learning paths have a number of similar traits to a coaching session and correspond to conditions, principles, and psychological and pedagogical practices of coaching. The dynamic growth of demand for such innovation projects renders it necessary to estimate the effectiveness of work for ET startups in this segment.

Analysis of investor preferences in choosing the ET startup effectiveness assessment methods shows that in spite of the diversity of techniques, none of them gives a one hundred percent result. With regard to this, the importance of measuring the educational effectiveness of ET projects rises. The system of criteria and indicators of the educational effectiveness of ET projects which is suggested in the research and has been tested out experimentally contributes to enhancing investment attractiveness of the innovation constituent of further education.

2 Literature Review

The present-day investment into EdTech startups is the process of providing development and launch of educational innovations with private, public, and corporate financial resources, uniting educational and information technologies.

A number of Russian and foreign researchers have discussed the range of problems of this process in detail. For example, basic principles of investing are thoroughly studied in the works of Z. Bodie, A. Basu, A. Kane, and A. Marcus (2018). Various interpretations of investing into the domain of education are considered by the Russian economist V. Chekha (2010) who substantiates the necessity of making amendments to the law to ensure the legal framework for investment activity in various sectors of education. The works of T. Bondarenko and E. Isaeva (2015) deal with investment particularities of startups and describe the range of tools and mechanisms of stimulating innovation activity, as well as the algorithm of selecting ones, with startup stages taken into account. They also single out the main trends of venture capital investing in Russia. A more in-depth study of the modern EdTech startup market was conducted by Z. Chavkin (2020) who identified 5 groups of factors having an effect on the scalability of ET projects. According to the author, the found factors are interrelated with principal elements of the startup business model and serve as a basis for making more efficient managerial decisions. The problems of managing effectiveness and performance of companies regardless of their profile are extensively described by foreign researchers M. Armstrong and A. Baron (2012) who worded the basic statement of managing performance, its principles, and indicators of the effect it produces on the company's productivity.

Meanwhile, the problems of selecting the most promising projects remain relevant, both for private business investments, the state, and business accelerators. The world practice is such that the principal share of startups is financed by venture capital funds. In spite of the coronavirus pandemic, in 2020, the Russian venture capital market grew by almost 70% as compared to 2019 (from 11,6 billion rubles up to 21,9 billion rubles). Notably, public investment went down by nearly 40% (from 4,3 billion rubles to 3,1 billion rubles) (Plenin & Ivanova, 2020), and the share of Russian accelerators shrank, too. Another problem of enhancing the investment attractiveness of EdTech startups concerns the choice of optimal technique for estimating their effectiveness. The detailed analytical review of techniques actually applied can be compiled using the data of the Knowledge base of Venture Capital Accelerator (2021) and expert opinions of analysts of the EdTech startup market. Suggested by Eric Ries (2011), "the lean startup" technique helping investors measure the startup value and rate of return before making decisions about investing into development and implementation of the new ideas has won the worldwide renown. Russian researchers L. P. Mzarelua and A. Khalyapin (2020) have discussed and substantiated positive and negative aspects of investing into startups, as well as analyzed the opportunities of financial toolkit of investing into innovation projects.

Outlined in expert news releases by RBC, Google, Ipsos, and some other expert analytical companies (Kuzmin, 2021), the current development trends of the educational industry which shape the demand for EdTech startups allow not only establishing the relationship between needs of new educational services but also selecting promising EdTech projects in line with them. Alongside this, Russian researchers V. Buvina and I. Yershova (2021) identified the principal investment attractiveness factors and parameters of Russia's online education sphere. Within it, the teacher's functions are changed, and opportunities are opened up for using the new information and communication tools and smart systems in the educational process.

Anyway, searching for investments to satisfy the growing demand for the development of students' cognitive, communicative, and creative skills within further education programs remains the central problem. As M. Matyushkina (2019) believes, solving this problem implies analyzing the modern methodological approaches to estimating the effectiveness of EdTech startups.

3 Research Methodological Framework

The objective of the research is to find out current methodological and practical aspects of public and private

investment support of promising educational projects. The following tasks contribute to achievement of the set objective: conducting analytical review of the world EdTech startup market which allows identifying attractive for investors sectors of Russian education; based on making more precise the modern educational industry trends, identifying promising EdTech oriented to consumer interests; analyzing the range of problems associated with estimating the effectiveness of work of ET startups. The conceptual and theoretical framework of the research is made up by new aspects of the human capital theory, methodological approaches to investment management in the system of education, the methods of didactic heuristics (Khutorskoy, 2003), as well as the methodology of coaching developed by T. Gallwey, J. Whitmore, and M. Downey (Whitmore, 2005). As the input data, the authors used the results of marketing studies of the demand for EdTech startups in the world educational market (Chavkin, 2020). The following methods were selected as methodological toolkit of the research: the systemic approach to identifying the range of problems of public and private investments into promising educational projects; the interpretation methods of classifying and typologizing modern trends in the educational industry; expert and analytical methods enabling the authors to systemize the criteria and indicators for estimating the educational effectiveness of startups.

Information and analytical materials of the research incorporate the fundamental premises of monographs and scientific papers on the problems of modern education, investment attractiveness, and estimating the effectiveness of EdTech startups. They refer to the official data of the Federal State Statistics Service of the RF (2021), EdTechXGlobal expert news releases (2021), and knowledge base of the Venture Capital Accelerator (2021), too. The research materials also include results of experimental testing out of the authors' technique of the use of coaching technologies to build personalized self-learning paths in further education.

4 Results

The world EdTech startup market started developing in 2012. As forecast by EdTechXGlobal, the world market of educational technologies will see the annual growth of 17% and will have reached USD 252 billion by 2020 (17-25% per year in the RF) (EdTechXGlobal Expert News Releases, 2021). It is expected to reach USD 404 billion by 2025 (EdTechXGlobal Expert News Releases, 2021). The COVID-19 pandemic only enhanced this trend: in 2020, the corona crisis brought over USD 8 billion venture capital investments into the world EdTech market. As for Russia, its volume of foreign investments into promising educational projects has shown a 300% increase (Rudich, 2021). Due to particularities of EdTech startups (innovation ideas; scalability; high investment risks) and their primary objective (to develop the unique technology for supply having no analogs in the world practice), the most widespread ways for them to get implemented are venture capital financing and private investments.

At present, the principal competitors in the EdTech (ET projects) market are China and the USA. Over the three years of 2015-2017, China invested USD 3,6 billion into these projects, the USA — USD 2,8 billion, and around USD 30 billion as soon as in 2020 (Soloviev, 2019). In China, the feature of venture capital financing (with its some 1000 VCIF controlling USD 750 billion) (Soloviev, 2019) is its subordination to public interests. Hence they have a high share of venture capital financing of ET projects. The leading focus areas are those of the school program and English language learning.

Figure 1 Investment capital raised by the American EdTech startups
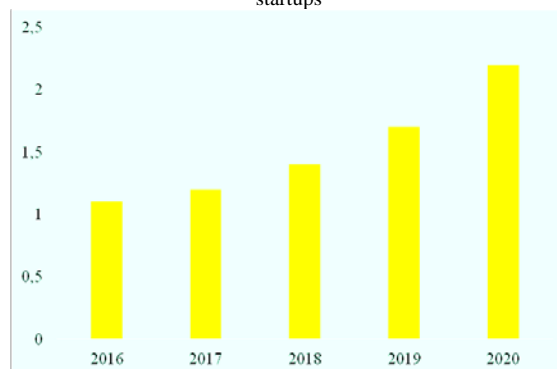
Source: Wan (2021).

In the USA, startups in the domain of educational technologies raised venture and private capital for the total of over USD 2,2 billion as a result of 130 deals in 2020 (see Figure 1). This is almost 30% more than in 2019 (USD 1,7 billion). The coronavirus pandemic has boosted the demand for EdTech startups. In 2020, the biggest deals in the EdTech sphere in the USA were made by Blueblood, Andreessen Horowitz, and General Catalyst companies. Currently, the American market incorporates over 2 thousand EdTech products. Its principal niches are the secondary and higher education. The biggest deal was made with the Roblox Company (online gaming and learning platform for children). The Coursera and CampusLogic platforms have online courses and financial management tools to offer for colleges and universities. The Handshake Company bringing together college students with employers rounds out the top three companies in the domain of educational technologies. To represent the investors' growing interest in career guidance programs, the leader list also includes Udacity and Lambda School companies.

During the Covid-19 pandemic, closure of schools has led to higher spending on services of further education, with the investment capital following. The capital is attracted by the new generation models (Sora Schools), too, which are designed for private learning and homeschooling. It is India that is gaining on the American EdTech market: in the past year, Indian companies raised USD 1,6 billion, having ranked the world's second in the volume of investments as of the third quarter of 2020 — leaving the USA behind (Soloviev, 2020).

According to analysts of Smart Ranking and the TalentTech IT holding company, "Russian online education market will grow even faster — increasing some 1,5–2 times every year. As of 2019, its share of the total EdTech market amounted to 2%, and by now, it has got 1,5 times bigger, taking up to 3%" (12, 2021). In Russia, 70 EdTech projects have attracted venture capital investments over the latest 5 years (the deal amounts averaging at under USD 2 million) (Snowballing Growth: Rating of Leaders of Russia's Online Education Market, 2020). Foreign investors have not invested their funds into the Russian EdTech since 2014, since the point the sanctions war started. Although there is a considerable need of educational innovations, the share of public investment into EdTech startups is still not large.

The authors believe this is associated with the fact that higher spending for education (in 2020, the education spending item of the federal budget of the RF reached the mark of 956,9 billion rubles, making 4,1% of the total public expenditure) (Utilization of the Federal Budget and Budgets of the Budgetary System of the Russian Federation in 2020, 2021), has not increased its share in the total public expenditure volume. It should be noted that starting from 2015, the RF has not spent for education more than 4% of GDP per year (Rodenkova et al., 2020). Meanwhile, within the total amount of funding, the percentage allocated for educational innovation and EdTech startups ranges from 1,3% to 15,4% (for the federal programs "Young professionals" and "Staff for digital economy", respectively). As for non-budgetary

sources of funding in the total expenditure volume, these take up so little as 0,05%, according to the passport of the "Education" national project (2018).

However, Russia has some options for EdTech startups to get financed by accelerators, such as Skolkovo AdVentureLand, ED2 EdTech accelerator, accelerator of Sberbank and 500 Startups, the Angelsdeck club of investors, and others.

Analysts "refer school (27%) and further professional education (20%), as well as language (20%) and corporate training (11%) to the most attractive lines for investing into the Russian EdTech" (Ilingin, 2020) (see Figure 2). Fulfillment of the "Digital Economy" national project is bound to contribute to the growth of the EdTech market. Thus, the EdTech tools will be sought after in the corporate segment, too. The school, university, further education, and corporate training get "digitized" to meet the new needs.

Figure 2 The structure of investments into the Russian EdTech sector
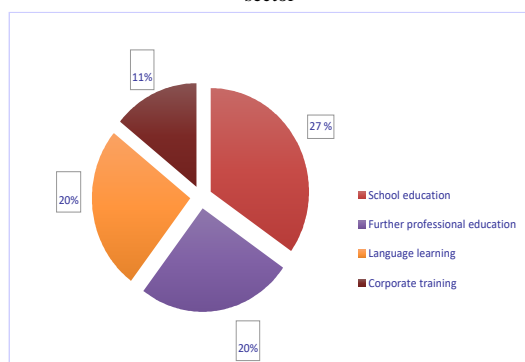
Source: authors' own processing

So, in 2020, Russia's Ministry of Science and Higher Education selected 44 educational organizations needing support of digital development most of all.

Two-part subsidies sized 7,6 to 29,26 million rubles were allocated to all the educational organizations for implementation of digital development programs in 2020 and 2021, the total sums being 423,5 million rubles and 496,1 million rubles, respectively (with 919,6 million rubles distributed in 2020) (Official Website of the Ministry of Science and Higher Education of the Russian Federation, 2021).

According to the findings of analysis of the world educational market, a number of the most essential development trends of the education industry can be identified (Table 1).

Table 1 Current education industry trends and promising educational projects addressing consumer interests

Trends	The main range of consumer interests	Promising EdTech projects	Online tools
Nationwide standardization of the educational process	Preparation for exams	Preparation for tests of foreign language; USE, BSE, ARTW, etc.	Repetitor.ru aggregator of tutors Castle Quiz mobile app
The "lifelong learning" trend and growing interest in the humanities (liberal arts)	Inclusion of adjacent subjects and non-specialized skills into the process of learning	Soft skills training; gaining competencies not directly associated with the professional activity	Uchi.ru, Foxford, InternetUrok.ru, Maximum. Class Timetable Evernote, Google Docs, Trello, and Todoist
Digitization of learning	Paid online learning	Virtual assistants and robots	Yuanfudao — Chinese platform Khan Academy — American platform Skillbox — Russian platform
Growing popularity of	Interest in innovation	Learning with the help of	Siri, Alice, Drops

Trends	The main range of consumer interests	Promising EdTech projects	Online tools
edutainment	technologies in learning	voice-controlled and gaming software	
Integration of artificial intelligence into the humanities	Personalized learning	"Programming for Everybody (Getting Started with Python)"	IBM Watson Microsoft Azure cloud platform Smart School Pro
Development of intensive courses containing the profiled information only	Intensive training course	Mini MBA	DataSense data management platform Lumosity: Brain Training
Hybridization of the educational process	Expanded format of learning (online, offline, group and personalized classes, etc.)	F Learning studio (catalog of useful courses)	Video courses, AI, self-education platforms
Homeschooling and further education	Private schools	marketplaces	Coach Hd

Source: compiled by the authors according to the data of the world EdTech startup market review (Ilingin, 2020)

Nationwide standardization of the educational process has generated the demand for new services — preparation for the USE. This demand was materialized by the Repetitor.ru aggregator of tutors counting over 100 000 participants. As for the Castle Quiz mobile app, it introduces some gaming elements into preparation for the USE, which promotes better acquisition of the study material.

The lifelong learning trend and growing interest in the humanities (liberal arts) spurs the demand for the EdTech to cultivate flexible super-professional skills contributing not only to development of creativity and interpersonal skills but to students' self-development, too. For this purpose, the educational platforms of Uchi.ru, Foxford, InternetUrok.ru, Maximum, and Class Timetable (the latter is basically an e-governess) have been developed and operating successfully. Notion, which is a hybrid of Evernote, Google Docs, Trello, and Todoist apps, can serve as a tool for optimizing the virtual working space for senior school, college, and university students.

According to experts of Google and Ipsos, in 2021, digitization of learning will go on growing, too, with online learning to become the development driver of the domain of education (Kuzmin, 2021). Over the coronavirus pandemic, such educational platforms as Yuanfudao (Chinese), the American Khan Academy, and Russia's Skillbox have become the most successful ones. The Yuanfudao platform has set the world record in attracting investments — raising USD 2,2 billion, with USD 15,5 billion of general estimate (Zhukova, 2021). Khan Academy is an example of the world's largest storage of educational content on the school program (its number of members is 580 million) adapted for online learning.

The popularity of educational innovations, such as edutainment, based on the state-of-the-art psychological techniques, gameplay format, and information and communication technologies (Siri, Alice, Drops, and so on) is growing year by year. Joining in with the digitization trend within personalized self-learning paths, artificial intelligence gets integrated into the humanities. In 2020, "Programming for Everybody (Getting Started with Python)" and "Introduction to Data Science with Python" were the world's top popular courses (Nemchenko, 2017).

Alongside this, training courses that offer concentrated information on the professional profile, e.g., Mini MBA, are intensified, and online tools like the DataSense data management platform and Lumosity: Brain Training app are used successfully. Lumosity: Brain Training is one of the most well-known apps for training one's memory, speed of thinking, attention, and other creative and cognitive skills.

One more trend is hybridization of the educational process, which implies expanding the format of learning and including

online, offline, group, personalized classes, and other forms of learning into it. For example, animated video clips of lectures will be popular which help one make sense of difficult questions in a gaming format.

Confirming people's dissatisfaction with the existing system of education, the growth trend of private schools (learning and unschooling) contributes to higher demand for startups in the domain of further education: the range of topics is expanded, new formats are created. For example, there is the "IQ007 school of speed-reading and development" which has launched over 150 franchised centers in the recent 4 years" (IQ007, 2021). The new niche of further education is occupied by marketplaces aggregating their audience by means of the content interesting them. In this market, the key players are KidsReview, iNLEARNO, the MEL courses, and Profilum.

Experts share the opinion that there will be least of all competition and best conditions for growth in the educational segments of further professional education and specialist skills upgrade. Meanwhile, the demand here is stirred up by three parties: the state, big business, and employees of corporations.

As the experience of the majority of digital educational projects shows (including the Russian ones — Maximum test, Foxford, and Uchi.ru), one needs a mentor, curator, or teacher for more effective absorption of information. This is characteristic for the entire market of online education — particularly for the school segment (Suteeva, 2012).

The authors believe the next development step of online education will be not only educational programs compiled by curators or mentors but also building of personalized self-learning paths that will be adjusted by a specially trained robot. The robot will monitor students' progress along such individual self-learning pathways. In this case, the teacher's principal functions in the training process will be dramatically different from the conventional ones. Meanwhile, it should be noted that the technology of plotting personalized self-learning paths has a number of features similar to coaching sessions and corresponding to conditions, principles, and psychological and pedagogical practices of coaching. That is, the use of coaching tools (micro and macro models, main principles, coaching stance, etc.) as the methodological framework for building personalized self-learning paths will be effective for enhancing students' involvedness into further education.

The outlined education industry trends and transformation of teachers' functions into those of curators, mentors, tutors, and coaches confirm further growth of the demand for executive coaching, the principal methodology of which consists in personalized approach to each student (Whitmore, 2005). Currently, there is successfully operating software for finding coaches for employees (Coach HR) which is based on artificial intelligence.

5 Discussion

Rapid growth of the demand for promising educational projects in further professional education brings about the necessity of measuring the effectiveness of work of ET startups in this segment of the educational market.

In practice, there are various approaches to solving this problem. So, for example, private investors (the PR Online agency) suggest measuring the effectiveness according to the criterion "the least investment with annual revenue increment" (Nevskaya, 2016). Developing the classical schemes of estimating investment project effectiveness, V. Baranov and V. Miklushevsky (2004), methodologists and practitioners of investment management, suggest using the modified internal efficiency ratio (modified internal rate of return).

Public investors prefer calculating the budget effectiveness "as the difference of income and spending of budgets at all levels (the federal, regional, and local ones) which are coupled with a particular social project", relying on the research of

S. Bukhonova and Yu. Doroshenko (2006) in quantitative effectiveness estimation of social investments.

Corporate investors tend to measure the effectiveness of work of ET startups by the volume of investment into employees' self-development through the lens of HR goals and tasks, using the integrated approach of L. Lukicheva and S. Golovanov (2014) to estimating the effectiveness of investing into personnel development. As for business accelerators, they prefer estimating scalability of the project from the first sales to multi-fold increase of revenue viewing it as "company's growth way through optimizing the processes, consistent structuring, and drastic cuts in costs" (Ermakov, 2019).

Summing up the said approaches, the authors have come to the conclusion that each type of investors has their own preferred choices of ET startup effectiveness valuation methods (Table 2).

Table 2 Methods of estimating the effectiveness of ET startups for each investor type

Investors	Methods	The main principles of the methods
Private	Comparison	Assessment of startups as compared to the similar ones
	Cash flow discounting (DCF method)	Evaluation of the forecast cash flows
	Venture capital (rate of return)	Calculation of the expected payback or internal rate of return (obtaining the average return estimate)
	Combining (the Berkus method)	Summing up the values of different startup elements to find out its current value
	Business plan appraisal	Substantiation of investment attractiveness, scalability prospects, and growth rates
Public	Price versus quality analysis (the VfM method (value for money)	Development of the "quality standard" for the educational service and its prime cost
	O. A. Yastrebov's method	Calculation of the integral social effectiveness indicator
	Estimation of competitive advantage of the project implementation	Identification of advantages of using budget funds for implementation of the startup
Corporate	Cost method	Evaluation of actual costs for creation of a similar project
	Competitive losses	Estimation of financial losses in case of acquisition of the startup by a competitor
	Forecast financial plan appraisal	Evaluation of profitability, rate of return, and risks against the potential profit
	Estimation of potential earnings	Estimation of the forward value of the startup depending on the student population size and the "customers' paying capacity"
Business accelerators	Matching	Consideration of the investor's preferences for investing
	The PVN method (lit. the hit or miss method)	Investors' subjective score of the startup factors
	The scorecard method or benchmark method (B. Payne's method)	Finding out the average score of the startup in this particular region and sector of the educational market

Source: compiled by the authors

At present, when estimating EdTech startups, private and corporate investors, just like accelerators, use such methods as PVN, the Berkus method, the venture capital, and DCF one most frequently (Slepov et al., 2019). As for the startup valuation technique preferred by the state, it relies on the methodology of estimating public private projects (Gerzelieva et al., 2018). According to the authors, both the assessment ways used for conventional business and all appraisal methods used for other startup types, e.g. evaluation of useful assets and potential benefits, are not suitable for estimating the effectiveness of ET projects (Kvon, 2019).

With regard to this, let *the specific nature of the methods of estimating the effectiveness of ET projects* be noted. On the one hand, they do not come down to appraisals of the private sector and business accelerators (commercial effectiveness analysis). On the other hand, they differ from consideration of interests of the state (analysis of costs and benefits in the public sector)

because they have to take into account students' personal interests and those of their families, i.e., the educational ("social") effectiveness.

In the authors' opinion, when considering ET startups with specific features of the modern market of educational projects borne in mind, their effectiveness should be defined as an integrated indicator incorporating not only such components "as effectiveness — performance function — the extent of achieving a goal (performance, closeness to the goal), efficiency (economic feasibility — the ratio of planned resources and inputs to the actually used ones), and quality" (Sink, 1985) but including the educational effectiveness, too.

For example, the educational effectiveness of an ET project based on personalized self-learning path with the use of coaching can be found out by measuring the involvedness of students into further education with the GROW model and the OR MISS author technique of building a personalized self-learning path developed by I. V. Borisova (Borisova & Ershova, 2021). This technique takes into account particularities of plotting a personalized self-learning path and applies current psychological and pedagogical practices of stimulating students' involvedness into further education. According to I. V. Borisova's technique (Borisova & Ershova, 2021), the level of involvedness is characterized by integral scores on each of its components. So, the higher the involvedness is, the higher the score of indicators will be. The score system of indicators is given in Table 3.

Table 3 The system of criteria and indicators of the educational effectiveness of ET projects

Criteria	Indicators
Academic and intellectual development (C1) (*represents achievement of educational and academic objectives*)	- P1 Optimal assignment completion time; - P2 The extent of completion of study assignments; - P3 Minimum quantity of mistakes in the final work; - P4 Meeting the quality requirements for a particular work; - P5 Using in practice the maximum quantity of new means and techniques demonstrated by the teacher.
Behavioral component (C2) (*represents the conscious attitude to learning, the level of self-discipline and interpersonal skills*)	- P1 Performance of formal procedures that are compulsory in learning; - P2 Any disciplinary measures taken in relation to the student; - P3 Voluntary participation in extracurricular events; - P4 Involvement into social contacts and interaction with other participants of the educational process; - P5 Maximization of the time of learning; - P6 Absorption with the process of learning; - P7 Absorption with the process of learning; - P8 Initiative in the process of learning.
Emotional component (C3) (*represents the nature of attitude to lifelong education, prevailing emotions*)	- P1 — Commitment (identification of prevailing emotions); - P2 Absorption; - P3 The extent of satisfaction with the educational process; - P4 Higher interest in the process of learning (gaining knowledge, abilities, and skills); - P5 The feeling of one's own effectiveness; - P6 Reinforced confidence of oneself and belief in one's capacities; - P7 Emotional evaluation of the educational process; - P8 Enthusiasm for learning.
Cognitive component (C4) (*represents understanding of the essence of further education, learning, self-learning*)	The understanding of: - P1 quality of learning; - P2 the opportunity to fulfill one's creative potential; - P3 tasks of further education; - P4 the process of learning; - P5 the process of self-learning; - P6 "rational benefits" of learning; - P7 personal responsibility for the results of learning.
Motivational component (C5) (*represents the extent of interest in learning*)	- P1 The content and power of motives underlying learning; - P2 Personal needs fulfilled in the process of learning; - P3 Self-development and self-fulfillment motives met in the process of learning.
Value-based component (C6) (*represents the level of importance of further professional education as a value*)	The importance of: - P1 self-learning; - P2 further education in personal development; - P3 a particular activity and the aspiration to "be at one's best" in it; - P4 education for successful adaptation and socialization in the contemporary conditions.

Source: compiled by the authors

The use of the OR MISS model is subject to limitations associated with having to develop recommended practices of preparing and conducting further experiments; the latter are

needed to implement this technique into the process of bringing together personalized self-learning paths. This is due to the said technique being designed for a prolonged period of use, at least, counting several cycles of achieving the end objective.

Thus, an ET project which involves building personalized self-learning paths with the use of coaching technologies features a high extent of educational effectiveness as the key component of investment attractiveness for EdTech startups.

6 Conclusion

Development of the modern ET startups market can be considered one of the positive effects of the coronavirus pandemic. In this market, it is China and the USA, followed by India, that are the leaders. Russia's market of online education advances at a rapid rate, too. The demand for promising educational projects is stirred up by the educational industry development trends associated with the global digitization: the trend toward "lifelong learning" and the growing interest in the humanities (liberal arts); the popularity of edutainment; integration of artificial intelligence into the humanities; hybridization of the educational process; the growing need of homeschooling and further education. The new educational trends transform the functions of teachers and techniques of training, particularly in the sector of further education, which is confirmed by the growth of demand for executive coaching, with its methodology consisting in personalized approach to each student. Given this, the problem of estimating the effectiveness of ET startups based on personalized self-learning path, with coaching used in the process of fulfilling further education programs, takes on increasing importance.

According to the authors of this research, effectiveness of such projects should be measured as an integrated indicator incorporating such components as effectiveness (the extent of achieving a goal), efficiency (the ratio of planned resources and inputs to the actually used ones), quality, and the educational effectiveness. Introducing the system of educational effectiveness criteria and indicators into the practice of assessment of educational projects will be able to not only enhance their investment attractiveness but also produce a positive effect on the performance of national projects being implemented.

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Primary Paper Section: A

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