FREE INTERNATIONAL UNIVERSITY OF MOLDOVA

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IMPROVING AND ADAPTING THE MANAGEMENT TECHNOLOGIES IN ORDER TO MEET THE NEEDS OF THE LABOR MARKET FOR THE HIGHER EDUCATION FIELD OF ISRAEL

SPECIALTY 521.03 - ECONOMY AND MANAGEMENT IN FIELD OF ACTIVITY

ABSTRACT

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I. CONCEPTS OF THE RESEARCH

Actuality and importance of research theme. In a rapidly evolving technological landscape, the expectations of employers towards employees undergo swift transformations. The labor market plays a crucial role in determining the contemporary requirements placed on educational services. The labor market is the main entity who determines modern demands towards the education services. The problem of non-agreement between the labor demand and its supply exists in many countries all over the world, since lots of employers are not satisfied with the quality of professional-qualification education, skills, field of specialization of potential employees. Provision of balance between demand and supply of labor forces is a major object of state policy making. The effective interaction between higher education systems and the labor market is one of the mechanisms for solving this problem. This is why it is crucial to examine in depth the tendencies at the labor market and its relations with the education services' market.

Employment at the education services' market should fit the demand of the professionals' labor market segment, which allows to determine the relations between the education system and economic sectors. Interactions between labor and education services' markets is characterized by the following ties: economics' demands- labor market demands- education services' abilities- population demands for certain kinds of education.

In Israel, the problem of interaction between the labor market and the Higher education market is also based on sectors, both geographic and religious- ethnic. Sectors of better and more developed Higher education (like bigger cities, and a non-religious Jewish majority) are stronger in the aspects of competitiveness and attractiveness for investors. There are major differences between the genders, majorities versus minorities, in their abilities to develop economically and to supply high-quality human resources. This is the reason to research in depth labor and education markets and examine their relations and inter-connections in any level.

The labor market is the one to determine requirements and demands to the market of education services, and management technologies of both education and labor market should adapt to these demands, their changes and forecasting for the future. In reaction to changes at the labor market, management technologies for human resources recruitment and training, altogether with their adaptation and constant improvement, become extremely important for education system and its components.

Not any management technology may be effectively used and adapted to the activities of education institutions, since different education institutions have specific dynamic conditions of internal and external environments. Creating an algorithm of choosing management technologies, their adaptation to the activity of education institutions, considering the labor market demands, are actual for this scientific research.

Purpose of research. The purpose of the study is to scientifically substantiate methodological provisions and develop practical recommendations for the use of management technologies and the mechanisms for adapting them to the needs of the labor market in higher education in Israel.

Objectives of research:
- describe the key characteristics of the labor market and its interaction with the market for educational services;
- investigate the unique aspects of the academic labor market as an integral component of the overall labor market in the country;
- examine the functioning of management technologies within the labor market;
- provide an overview of the current labor market situation in relation to educational services;

- assess the mechanisms of outsourcing and social and labor relations in the context of education in Israel;
- formulate an approach for utilizing crowdsourcing as a promising technology for managing the development of higher education;
- develop a model for organizing a virtual environment as a new technology in the labor market of future teachers;
- create a mechanism for adapting management technologies to the needs of the higher education market in Israel.

Hypothesis of research. The proposed management technologies (outsourcing, crowdsourcing, virtual and distance learning) can significantly improve the situation on the academic labor market and help in solving multi-level tasks of higher educational institutions in Israel.

Synthesis of research methodology and justification of chosen research methods. The theoretic base for this research is the combination of classical and modern papers which were used, in the management field. Solving problems in this research is based on using general- scientific methods: system approach, comparative and structural analysis, retro spectral analysis, documents analysis, synthesis. In addition, some special methods were applied: survey, descriptive statistics-analysis, questionnaires, simultaneous system of equations regression model.

Researches dealing with relations between labor market and education services (Sarid A.A., Newton P.M., et.al.) allow to conclude that there are stable connections between educational institutions and the labor market and, as a result, there is a need to increase a number of graduates who are able to integrate faster into the industrial process.

Developing of new forms of using a labor power - virtual organizations, distant working places and methods of working, leasing and staff outsourcing, which are elaborated in papers of Przybylski A.K., Anderson J., Rainie L., Blagorazumnaya O., allowed to develop an algorithm of forming management technologies and their implementation in educational institutions.

Management Technologies (MT) are researched from the point of view of their implementation effectiveness in the field of management, in order to increase the company activities effectiveness, independently from the narrowness of implementation field of MT. This direction is described in the papers of Pretty J., Smutny P., Prochazka J., Vaculik M.

In this research, Statistical Central Bureau data were used, some analytical materials, published in the local press, scientific-practical conferences materials in the related fields of studies.

Scientific literature review on the problems in the field allows to conclude that the degree of studies in the research field is quite extensive, relating to separate problems of management technologies' implementation in the labor market in relation to education. However, there are theoretical-practical researches missing, striving to improve and adapt the management technologies to the labor market demands in relation to education in Israel.

The scientific novelty and originality consist of:
- development and stages' description of crowdsourcing implementation as management technology in education institution,
- development and description of model for organizing a virtual educational environment for training of future teachers, algorithm of virtual game use in teaching,
- development and description of models of career growth of a teacher taking into consideration a use of outsourcing and crowdsourcing,
- development of mechanism of choice and adaptation of management technologies to the demands of labor market in relation to the field of higher education in Israel.

The novelty of the current thesis should relate to the Covid-19 crisis in the world, which began in 2020 and made existing problems even more acute. Due to the crisis, both the labor and the

academic world had to adjust quickly to transition from working within an organization (like plant, factory, academic institution etc.) to working distantly, usually from home. There was no time to prepare to such a quick change, although distant technologies already existed and were partly implemented. After being made to switch to studying and working remotely, many students and even more lecturers in Israel complained about distant mechanisms and their drawbacks, but there were some advantages found, and today Israeli Ministry of Education and academic institutions empower their infrastructure, in order to be more prepared to the new era of digital, distant and virtual learning and teaching. This research describes management technologies (MTs) of implementation of distant learning, virtual learning, outsourcing and crowdsourcing in education and proposes new ways of their implementation in teaching, learning, management of career path of Higher education professionals and Human Resources recruitment.

Abstract of thesis chapters, focusing on the investigations and their need for the achievement of the purpose and the objectives of the research. The thesis consists of an introduction; three chapters; general conclusions and recommendations; bibliographical list of 197 titles, 140 pages of basic text, 13 tables, 35 figures and 15 appendixes.

The first chapter – **Theoretical foundations of the management technologies and their implementation in the labor market in relation to education services** – focuses on the labor market: the essence and the main characteristics of labor market in relation to education, management technologies functioning at the labor market including theoretical and practical aspects, Israel and other countries' features of the academic labor market as an integral part of the country's labor market.

The second chapter – **Analysis of the characteristics of the Israeli labor market in the field of the education services** – describes current situation of the labor market in relation to education services, analysis of the academic labor market in Israel, analysis of the mechanism of outsourcing and social - labor relations in relation to education in Israel.

The third chapter – **Improvement of human resources allocation mechanism of the labor market on the basis of management technology** – describes innovative management technologies and suggests their implementations in the labor market of Israeli education.

The **general conclusions** on the basis of theoretical and practical results are synthesized findings of the investigation, and the appropriate key recommendations are presented for the purposes set out in the researched topic.

II. CONTENT OF PHD THESIS

The **introduction** emphasizes the timing and importance of the problem addressed, the goals and objectives of the subject under consideration, describes the scientific innovation of the results obtained, the theoretical meaning and the practical value of the work. In addition, methods are used to confirm the results of the study and to summarize the thesis chapters. The main goal of the research is to provide a reliable solution and a positive outcome after examining the theoretical and methodological aspects of improving and adapting the management technologies in order to meet the needs of the labor market for the education field of Israel.

In the first chapter "Theoretical foundations of the management technologies and their implementation in the labor market in the field of education services" main characteristics of labor market are described in relation to education, and features of academic market are examined as a part of state labor market, and theoretical aspects of functioning of management technologies at the labor market are described.

Based on theoretical studies and analyses of approaches to the interaction of the labor market and the market of educational services, the author reveals a feature of the educational market: the presence of bilateral links between the interdependent markets. The labor market and higher education system are interrelated, with impacts in several aspects of the labor market such as employment, job structure, and wage levels. Likewise, the education system is also affected by the labor market, and requires constant adjustments to meet the demand for highly qualified professionals through learning programs and development of in-demand educational programs. Understanding these relationships is necessary to identify the features of the process of providing educational services.

Education services' market is determined by a sphere of forming and functioning of demand and supply for these services. To regulate demand and supply of human resources at the labor market in the field of Higher education is the central social-economic state objective. At the same time, Higher education institutions must consider labor market situation, be demand-supply oriented in any field of their activity, base a rational and adequate educational structure for preparing the human resources needed for future professions. In case this job is done properly, more graduates will be employed according to their education and more employers will get the staff they need.

The demand for educated labor staff usually stems from the market demand from the side of different firms and organizations, additional trainings qualifications are demanded by potential employees. As a result, often the requirements in regional labor markets are formed by subjective needs for education of local populations. Local population influences both labor and education markets at the same time. However, the youth choose their profession by chaotic and even random perceptions about prestigious professions and specialties. Such a choice does not always fit the inner needs of the personality and the employers, but yet determines a curricula of education programs and eventually creates problems of effective employment of youth. Sometimes, there are too many possible employees for a job position. As a result of the factors described above, there is a non-balance between the demand and supply of labor force, since different factors impact demand and supply. That's why to balance a labor force and education services markets is very important for any state in the world.

The author considers the relationship between employers, the higher education system and recruitment agencies as an intermediary. Mutual interest in the recruitment of professional personnel, competence in relation to the requirements of the modern economy will provide universities with a high quality of educational services, qualifications of personnel and employment of graduates.

The following Figure 1 schematically presents a labor market and its relation with education institutions.
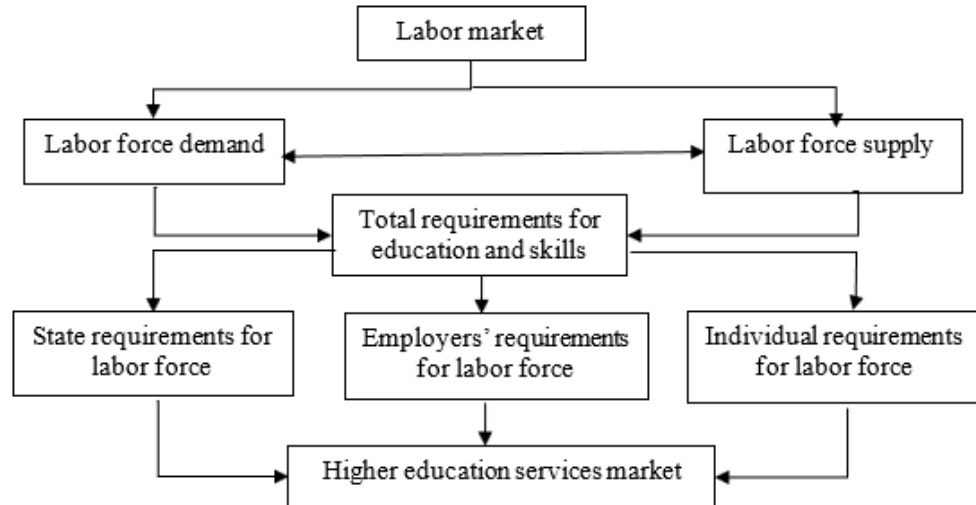
Figure 1. Labor market and its relation with Higher education institutions [elaborated by author]

Non-agreement between actions of Higher education institutions', firms and organizations dealing with qualified specialists trainings leads to appearance of disproportions between labor market needs and Higher education graduates. In author's opinion, improve in cooperation between universities and organizations and firms may significantly impact quality of graduates' trainings, and therefore increase their value at the labor market.

The academic labor market refers to the recruitment and placement practices within higher education, including the recruitment, academic employment, and professional development of faculty and staff at colleges and universities. The interaction between the labor market and academic labor markets is particularly relevant in the area of demand for specific fields of study and research. Changes in the labor market may create new demand for workers with certain skills, which can stimulate demand for relevant academic programs and research. Additionally, academic research and knowledge transfer contribute to the acquisition of valuable information by both higher education institutions and enterprises' employees. Moreover, the labor market can provide scientists with the opportunity to apply their knowledge and skills in practice.

The features of the academic labor market impose new requirements on the qualifications and content of labor contracts between universities and employees of various academic ranks, such as professors, lecturers, and researchers. Full-time and part-time employment, determined by temporary contracts, will make it possible to use the possibilities of the internal labor market in meeting the need for personnel. The author suggests that the relationship between the internal and external academic markets can enhance the scientific reputation of universities. This can be achieved through continuous professional development of internal staff or by recruiting external candidates with high academic achievements. Additionally, creating a competitive mechanism within the internal labor market, offering career prospects and employment guarantees, and implementing effective recruiting strategies can attract individuals with innovative ideas.

Despite the differences among countries, academic job markets face many common challenges. These challenges may include issues related to job security, workload, and the need to balance teaching, research, and other responsibilities. Such problems can make it difficult for academics to conduct high-quality research or provide effective teaching. Additionally, there may be concerns about the impact of globalization on academic labor markets, such as the outsourcing of research and teaching to other countries. Addressing these challenges will be crucial to ensuring that academic

labor markets worldwide can continue to attract and retain the best talent and provide high-quality research and education.

Various definitions of "management technology" have been provided in the economic literature, including its characterization as a process, document, tool, and methodology. Like any other technology, management technology should be based on the laws governing the functioning of the management object. The management object, in this case, is the human being who participates in the labor process[1]. The object of human resource management technologies, on the other hand, is the employee's professional skills and the rational utilization of their professional experience in the organization. These technologies aim to create a conducive management atmosphere, enhance organizational structure, promote accountability, and align staff behavior with organizational objectives[2].

Modern management technologies of recruitment and adaptation of staff are various and some of them are presented in Table 1.

Table 1. Types of staff technologiies of recruitment and training [elaborated by author based on [3]]

	Technology types	Contents
Staff recruitment	Recruiting	A system of events of search, choice and recruitment of employees, answering requirements
	Direct search	A nexus of events of involvement of specialists with required qualifications in the process of recruitment
	Preliminaring	Attraction of young and promising specialists
	Smartstaffing	Use of the same employees by different organizations through special internet exchanges, using cloud technologies
Staff training	Buddying	Guiding at the same hierarchical level
	Shadowing	New employee becomes a "shadow" of experienced specialist
	Secondment	Staff exchange between companies in order to acquire new skills and knowledge
	E-learning	Learning is mostly conducted using modern IT technologies when teacher and pupils are far away from each other
	Virtual education	Teaching within virtual reality for improving the acquired skills

In any one of the fields of human resources technologies' implementations mentioned in Table 1 (recruitment of personnel, its rotation, training etc.), there are various human resources technologies, which sphere of action is wide.

The study of various types of management technologies that are used in the labor market raised the question of their application in higher education. Existing management technologies should be

[1] ТРЕТЬЯКОВА, Е.П. *Технологии управления как способ формализации организационных процессов.* В: Вестник *Иркутского государственного технического университета.* 2013, №2(73), с.206-211. ISSN 1814-3520

[2] AWADA, S. Social management: different aspects. În: *Asigurarea viabilitifii economico-manageriale pentru dezvoltarea durabill a economiei regionale in conditiile integrlrii in UE: materialele conferinfei știintifice internationale Balti: 16-17 septembrie 2016.* Iași: PIM, 2017, p.127-130. ISBN 978-606-13-3642-5.

[3] NIKOLAOU, I. What is the Role of Technology in Recruitment and Selection? In: *The Spanish journal of psychology*, 2021, nr. 24, c. e2. DOI: https://doi.org/10.1017/SJP.2021.6

improved and adapted in higher education institutions, taking into account the needs, expectations, and qualities of the staff. The utilization of HR technologies, such as online job postings, candidate tracking systems, and virtual interviews, can lead to a more intelligent and efficient recruitment process while providing access to a broader range of candidates. Furthermore, employee learning and development technologies, including online courses and virtual seminars, can offer more adaptable and accessible learning opportunities for employees, which can improve their skills and productivity.

Creating conditions for flexible employment in the labor market and the development of new forms of labor force use (remote jobs and working methods, virtual organizations, outsourcing of personnel, etc.) are gradually becoming more and more in demand in educational institutions and require the development of new approaches to their application. The author has discussed the reasons for outsourcing in universities and defined it as an effective form of cooperation between the state and the private sector. Various higher education functions have been identified that can be delegated to third parties, such as support and administrative services (maintenance, IT support, marketing and financial services, and human resource management services).

The second chapter "Analysis of the characteristics of the Israeli labor market in the field of the education services" supplies an overview of Israeli labor market in relation to education services, analysis of the academic labor market in Israel, analysis of the mechanism of outsourcing and social - labor relations in relation to education in Israel.

In last years, there is a stable increase of employment at the labor market of Israel. According to data published by OECD, average unemployment rate of OECD countries is 6.7% while in Israel it is no higher than 5.2%[4] . In 2022 an employment rate of citizens aged 15 to 64 was 71.4% in USA, 75.8% in Canada, 78.6% in Japan on average, and 69% in Israel.

Israeli success is even more significant when we talk about the long-term unemployment, of period more than a year. In 2022, in Israel the percent of unemployed gets to 3.65% out of the total labor power, whereas in OECD about 5.6% of citizens look for a job.

Education has a crucial role for society development and sustainable economic growth of the country, since the education level in society and the attitude to scientific potential of the nation are the most important factors of a country's competitiveness at the international market. Since the majority of higher education students are aged 20-24, the absolute value of this age's student number should influence the demand of the education system. The Israeli education sector's part of economics increased very significantly, thanks to state budgeting.

Committee for planning and budgeting (CPB) participates in financing 29 institution, 21 academic colleges are financed by Ministry of Education, and 15 colleges are not supported by the state. National expenditure on higher education increased in 164% (in the fixed prices) from 1990 till 2013, and after that kept increasing but in a lower rate. Expenditures per student after 2009 increased in parallel with the increase in the number of students. The subsidies in colleges are much lower than the ones in the universities[5]. The following figure presents national expenditure on education in Israel.

[4]*OECD data*. Employment rate . [quoted on 27.03.2023]. Available at: https://data.oecd.org/emp/employment-rate.htm
[5]KATZ, O. *Surplus of higher education in Israel*. Kohelet Forum. Policy paper 36. 2017. 82 p. ISBN 978-965-7674-43-7
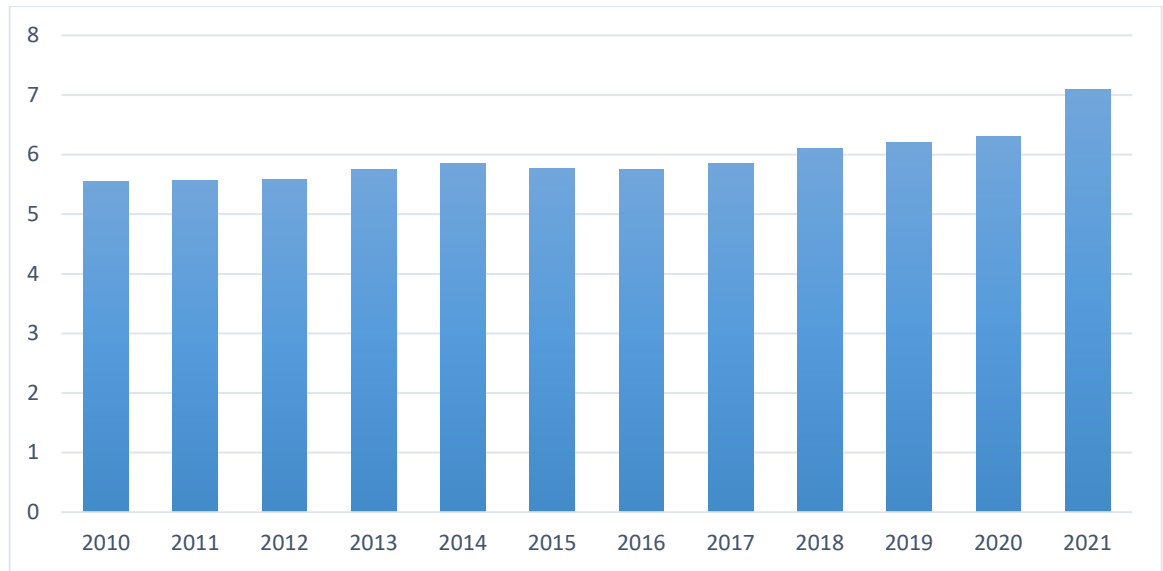
Figure 2. National expenditure on education in Israel, total (%of GDP)[6]

The data presented in the figure indicates that national spending on education in 2014 was higher than in previous years. Between 2014 and 2018, there was little change in spending. However, there has been a noticeable increase in spending from 2018 to 2020. The largest amount of spending on education was observed in 2021.

Human resource is a central part in higher education budgeting of Israel, and is predominant in the total national expenditure. At the time a number of education institutions and students increased rapidly, the total number of job positions in higher education increases quite slowly. There is a positive phenomenon of reducing gaps between the Arab and Jewish education sectors. As of today, the number of Arab students of high education institutions is rapidly growing.

The analysis of the academic labor market includes a variety of factors such as job openings, job qualifications, supply and demand, salary expectations, and career development opportunities. It also takes into consideration the qualifications and skills of potential candidates, as well as the needs of employers and educational institutions. In addition, the analysis may also examine the impact of government policies, economic trends, and technological advances on the academic labor market.

Employment in Israeli education field is forming under the following basic factors. Firstly, it is the potential number of students which defines the demand to education services. The characteristic is called the main one taken into consideration when building education institutions curricula. Secondly, it is the previous employment level in the sector which has a significant inertia. Firing education staff could cause political and economic costs. Thirdly, it is the economic development level, which defines the alternative employment choice and financial potential of any sector and region (including its budget limitations). Fourthly, it is the possibility of donations for regional budgets, which softens the budget limitations. Fifthly, it is the labor demand capacity in the educational services sector. If we measure it by pedagogical field's graduates' percent among all the graduates, it could affect the salary level in the sector negatively.

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[6] *Trading Economics*. Israel - Public Spending On Education, Total (% Of GDP). [quoted 6.04.2023] Available at: https://tradingeconomics.com/israel/public-spending-on-education-total-percent-of-gdp-wb-data.html

To systematize and evaluate the factors of influence on the Israeli academic labor market, a survey study was carried out by author and colleagues. The author distributed a questionnaire in the sample of college lecturers, and the data was analyzed using an SPSS statistical tool.

The research results demonstrated that there were no salary differences between men and women, Arabs or Jews (according to their own self-report). However, there is an inequality in the opportunities: women in the Arab and Jewish sectors face unemployment problems, they find it more difficult to find a job, and upon finding it – do not change it for a better one. Women are less ready to take a risk and change a job, maybe because they have less opportunities. Almost all the respondents are ready to study more (even another profession) and have been through different kinds of qualifications improvements. Almost all of the respondents (but one) think they are overqualified for their current position and their potential is not fulfilled. Most of the respondents, however, believe they can advance at their current job, the less optimistic group are Arab women.

One of the most important features of modern economic development is intensive spreading of forms of employment like outsourcing, out staffing and staff leasing (out technologies). These technologies' influence on labor market functioning and labor relations development is constantly growing, and the use of them helps in solving problems dealing with hiring and firing of workers, labor conflicts etc.

Lots of universities in Israel, Moldova, Romania and other countries use outsourcing when rent their buildings and rooms to other companies, use external staff for different kinds of work. Lately, they began also delegating other function to outside companies, like human resources management, financial support of students, university staff salary payment, accounting.

One of the problems of higher education in Israel today is outsourcing of the academic staff. Unfortunately, there are too many external teachers and lecturers who are not sure about their future employment and conditions.

To organize social and labor relations when outsourcing university staff, it is necessary to optimize the labor process based on predetermined criteria that align with the interests of all parties involved. According to the author, in order to increase the efficiency and effectiveness of the implementation of personnel outsourcing, a number of steps should be done such as: provide adequate training and support to outsourcing personnel to ensure they have the necessary knowledge and skills to perform their duties; develop performance metrics and regularly monitor the performance of outsourced staff to ensure that they are meeting university expectations and standards; consider introducing technological solutions to simplify administrative tasks and improve communication between external staff and university staff; create a culture of cooperation and mutual respect between outsourcing staff and university staff to ensure a positive and productive working relationship.

In the academic market of Israel, some phenomena were revealed in the market, like over-qualification of employees with High academic degrees, imbalance between supply and demand, discrimination of minorities and women. A career path of a typical employee of Israeli Higher education system, having an MA or PhD degree, was researched and described. Also, it was found out that some management mechanisms of outsourcing, crowdsourcing, virtual and distant learning are gradually getting at the labor market, and the tendency is that their use will be more widespread in the education and Higher education fields (especially after the Corona crisis).

The third chapter "Improvement of regulation mechanism of the labor market on the basis of management technology" describes innovative management technologies and suggests their implementations in the labor market of Israeli education. The chapter develops and describes the stages of implementation of crowdsourcing as a promising technology for managing the development of higher education; models for organizing a virtual educational environment for the training of future teachers and an algorithm for using a virtual game in teaching have been developed and described; a

model of teacher career growth has been developed and described, taking into account the use of outsourcing and crowdsourcing, a mechanism has been developed for selecting and adapting management technologies to the requirements of the labor market in relation to the field of higher education in Israel.

Crowdsourcing technologies can improve a practical orientation of education products of Higher education institutions, which is highly demanded today from the point of view of both students, teachers, Higher education institutions' management, potential employers. Teaching in the crowdsourcing surroundings could help to develop skills of analyzing a situation, evaluation of alternatives, skills of solving some practical tasks.

Crowdsourcing is getting widespread in educational life, it is one of effective and modern tools to develop a Higher education, and solve the following problems.

Table 2. **Education problems, possible crowdsourcing solutions and their advantages [elaborated by author]**

Problem	Possible solution	Who profits and how
Problem 1. To improve teaching and adjust it to the new "born digital" generations	Crowd teaching	- Materials sharing and better education for the students - Some points for career path of teachers - Additional and free incentive to improve teaching – good for the faculty management
Problem 2. To improve learning and adjust it to the new generations	Crowd learning	- The students: knowing to work in crowdsourcing surroundings will help a student to develop volunteering principles, will increase her morale level, will influence building general cultural and professional skills - The faculty management cutting some costs - Future employers who can get to know the students by their donations to the common projects.
Problem 3. To help all the students and researchers get equal opportunities by funding tuition fees	Crowd funding	- The students who get a support in their tuition fees payment and the ones who get scholarships - Researchers whose projects are supported by crowd funding - Faculty management whose staff promote the research projects without the faculty funding. - Future employers who get to know smart students and staff members
Problem 4. To make career promotion decisions fairer and objective	Crowd voting	-The students having more power to influence who will teach them - The academic staff, getting promoted not just in the traditional way - The faculty management, when they are helped in getting promotion decisions

There are some possible ways to implement a crowdsourcing in education: crowd teaching and learning; creating electronic databases by the students, like an electronic library; building new curricula, based on experts' community interested in them; allowing students to participate in existing crowdsourcing programs, when not only a lecturer, but the whole internet community will evaluate her knowledge.

Crowdsourcing is naturally integrated in solving educational problems of formal education institutions by creating open universities, distant learning courses etc., and also has a huge pedagogical potential which suits the modern social-cultural situation, where there is a dangerous tendency of education consumerization. Since knowledge and experience are important in any profession, the use of crowdsourcing in education field may solve lots of existing problems and improve the education in different institutions.

The author suggests the following model of crowdsourcing realization in education institution, as is presented in Figure 3.

1. Problem formulation:
Detailing the problem (for example, the books are not updated, an internet constantly updating database is needed- it will use for crowd learning)
Specifying the rules (the material should be sourced from scientifically recognized sources)
Defining projects limitations (for example, the materials should be starting from 2010 and only in English)
Requirements to project's participants (for example, only local students and staff)
Proposals' form (for example, a Word format up to 10-pages document)
Rewards (like, improving grades)
Project budget (by the faculty
Appointing the experts responsible for the projects (some crowdsourcing experts from the institution staff)

2. Selection of participants:
Testing participants (if there is a need to select. It could be a virtual exam on the field of studies)
The outcome:
List of chosen participants (those who passed the test)

3. Generation of ideas:
Brain storming of the participants
Individual suggestions
Virtual teams suggestions
The outcome:
A dataset of ideas and proposals

5. Developing the chosen ideas
Developing the ideas by authors, teams, experts
The outcome:
List of developed decisions (the dataset has got a real form and structure)

4. Filtering the ideas
Classification of ideas (for example, regarding the material itself or its placement in the database)
Experts' opinions
Voting
Throwing out worse suggestions
The outcome:
Ideas chosen by the participants (what will the databased consist of)

6. Choosing final solution
Procedures of choosing the best solution (a database formal), based on participants' voting, competitions.
The outcome:
List of best solutions
List of best participants (winners)

7. Implementation
Optimized version of the processes will be used (the best dataset will use for crowd learning)
The winners are rewarded.

Figure 3. Steps of crowdsourcing implementation in educational institution using crowd learning [developed by author]

The implementation of this model will facilitate the exchange of experience and knowledge between participants in crowdsourcing, who are looking for new solutions and are ready to active involvement in a constant organizational improvement of an education institution.

Possible advantages of crowdsourcing in solving educational problems:
• It allows to cut the costs, replacing the expensive outsourcing services;
• It allows to attract more interested people (students, researchers, donators, future employers) to solving a certain problem;

• It allows to use knowledge and skills of professionals- amateurs, never mind what is their geographic location;

• Assumes a use of distant working.

Disadvantages:

• Sometimes, a quality of work done using crowdsourcing is controversial;

• It is very difficult to predict a time span needed to solve a certain problem;

• It takes efforts to attract people who are ready to invest their resources to solve the problem.

Virtual education gets more popular in the modern world, especially at time of the Corona crisis. Occurrence of virtual universities in different countries of the world, which are financed by governments, is a widespread tendency. Traditional education in Israel and other countries is undergoing a crisis due to its non-availability, conservatism, locality, limitations. The classical model of teaching and learning becomes an obstacle to educational development. An individual in a modern world cannot be satisfied with the same knowledge, it needs to be constantly enriched, and so there is a need to learn how to find the right way in the information-loaded environment. The teachers of the future should be prepared to the virtual technologies and methods of education.

The globalization processes cause education systems and its staff of different countries and regions to be more uniform, more flexible and international. For example, the Bologna process brought to determining uniform academic and structural standards in Higher education institutions, which allowed students to study in a number of institutions and counties at the same time. Many universities maintain programs for foreign students, other establish local departments in other countries, which culture is sometimes very different from the original one. In addition, technological developments change the manner of teaching – there are virtual courses with a huge number of participants which are taught in a way of "distant learning", using virtual tools like Moodle, which accompany studies making students' physical presence unnecessary.

In order to improve the quality of teaching among lecturers and learning among students, to make an education more open and accessible for all, the author proposes innovative ways of virtual education to be used in technologies of the Higher education staff training.

A distance learning program may consist entirely of remote learning, or it may combine both distance learning and traditional in-person classroom instruction. In order to use virtual technologies in training of future teachers, a proper preparation is needed, including: software platform, curricula, management, manuals and guides explaining how to implement the technology, individual instructions and consultations, special training of teachers.

The author proposes to use the model of virtual education environment organization for training a future teacher (who has no experience in the labor market) to use innovational technologies. The model is based on certain principles and approaches. Model's aim is use of education environment in order to train future teachers for innovational activity. Types of activities (monitoring, teaching, experience exchange, consulting and coaching, professional support) are related to forms of learning organization (lectures, seminars, practicums, consultations, distant courses, support in the field of information and communication, virtual communities). As a final outcome- a teacher of future is ready to innovational activity using virtual educational environment.

Occurrence of virtual universities in different countries of the world, which are financed by governments, is a widespread tendency. The Open University in Israel is one of a few Israeli universities which are recognized by the council for higher education. It is different from the others in its admission requirements- anyone who wishes is able to get into BA (Bachelor degree) studies, without any conditions like matriculation diploma, a psychometric exam grade or admission tests. The teaching methods of the Open University combine between traditional and distant learning based on technology. The degree is received if a student successfully passed all the exams and made other

assignments which were a must. English language knowledge is demanded. Most of the degrees of the Open University are BA, there are a few MA (Master degree) programs, which admission requirements are similar to those used by other higher education institutions.

Different kinds of e-learning are already used in education and training in many countries. However, still new experts in any discipline are trained in the framework of traditional lectures-seminar methodology. The educational process consists of lectures, practical tutorials, laboratory lessons, control programs and so on. This methodology's effectiveness was proved for years and it very acceptable in the higher education field. However, problems appear and a traditional way of thinking is not working any more. More dynamic methods of teaching are required, to solve problems of the following kind:

1. Forming competencies and skill for situation from the real life, which are not enough presented in the existing and old educational curricula and plans.

2. Acquiring an experience of research, making projects and establish an industrial activity quickly with the lowest possible costs.

3. Organization of effective adaptation of the student to her future job conditions.

4. Developing creative skills, as least, the ability to define goals.

The practice demonstrates that technologies of teaching that use virtual game models are a useful tool to solve the aforesaid problems. Dynamic game models are active methods of learning, urging the student to participate actively and creatively in the process of learning. The basic terms of these models are "situation model" and "visual model". The visual models reflect the situation and make it crucial for the student to formulate the problem conditions. Such a model imitates real processes, conditions and problems, which make it easier for the students to build up some necessary skills, in order to solve the problems. Real processes imitation is done using visual representation. As a result, an analytical thinking is being formed.

A visual game is an additional description and representation of the situation using visual aids and cognitive graphics. It improves the analysis efficiency. Visual model consists of: goals of solving problems, visual description of the situation, rules of going over the scenario .

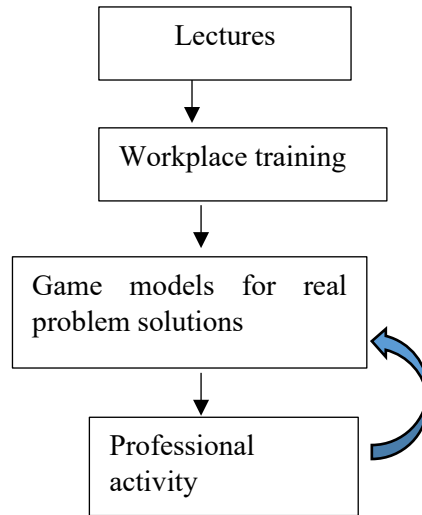When developing a model, two kinds of goals are usually defined:

1. Object-based goals, like: ability to find the direction in a given object-based field;

2. Pedagogical goals, like:

- making earlier basic and professional knowledges stronger;

- self-evaluation and self-testing;

-forming competencies and skills;

- forming system-based knowledge based on narrow-professional knowledge;

- accordance of professional level the quality requirements;

- acquiring new skills and abilities.

Thus, using technologies of teaching based on virtual visual dynamic models will allow to create a system-based approach in students' perception towards solving problems, to empower the existing basic knowledge, which was acquired in a traditional way of lectures-tutorials, to get new skills of working in an industry-based community.

The rapid changes in all the fields of life are so quick, that traditional education systems are not able anymore to prepare professional human resources in any field in a way that they will not suffer from lack of some crucial skills at any stage of their career, stemming from inability to catch up with the changes. Knowledge of virtual technologies are very important in a career path of any professional, especially a teacher.

The author proposes to use the approach of integration these technologies in the existing educational process (Figure 4).

```
┌─────────────────────────┐
│        Lectures         │
└─────────────────────────┘
              │
              ▼
┌─────────────────────────┐
│   Workplace training    │
└─────────────────────────┘
              │
              ▼
┌─────────────────────────┐
│  Game models for real   │
│   problem solutions     │◄─┐
└─────────────────────────┘  │
              │              │
              ▼              │
┌─────────────────────────┐  │
│      Professional       │──┘
│        activity         │
└─────────────────────────┘
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Figure 4. Use of technologies of teaching based on virtual visual dynamic models in the process of professional training [elaborated by author]

The processes of lectures and practical trainings (at the workplace) are enriched by technologies using virtual game models, in which real situations' descriptions are a very important component. The back direction from the field of professional activity to the models should be noted, since it allows to model real life situations, making a future professional more prepared and skilled. The scheme presented in Figure 4 is implementable both for preparing professionals in a higher education and in training the experienced experts. Use of technologies based on virtual models makes it possible to connect between studies and working experience, generalizing the experience that was acquired and gathered in the professional field. An expert in a training program studies to get real-life decisions and to complete tasks based on her real experience. In this form of learning, real life situations and processes in a chosen field are created.

Preparing teachers in conditions of virtual education environment can be viewed as a constant training of pedagogical staff- teachers, consultants. In the preparation of teaching staff for innovative activities in a virtual education environment, the main objectives are the following ones:

- Stimulation and development of intellectual activity of the pupils, involvement of pupils in gathering, choosing, developing and organization of materials;

- Increasing motivation for constant professional growth;

- Granting the teachers new skills of constant professional studying and self-studying;

- Developing teachers' skills suitable to innovational pedagogical activity, like critical and creative thinking, communication and reflection skills;

- Looking for an individual style of innovational pedagogical activity.

The following scheme presents an algorithm for the game use of virtual education.
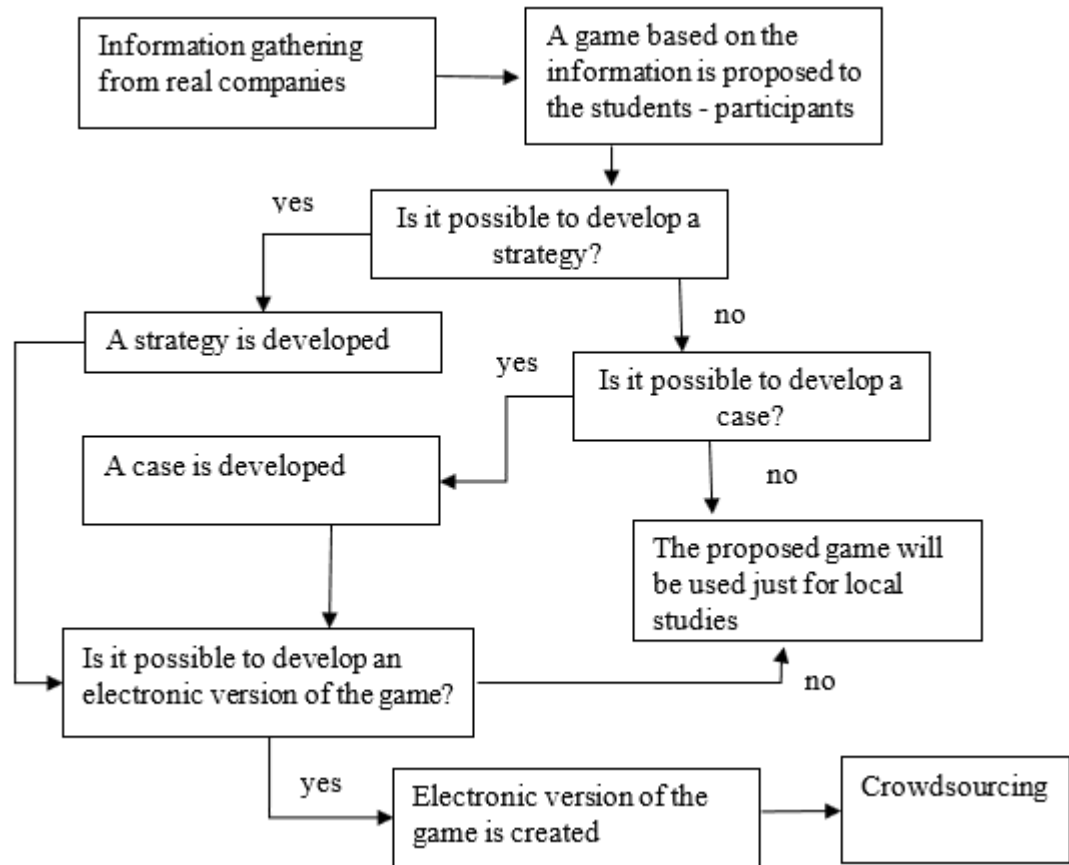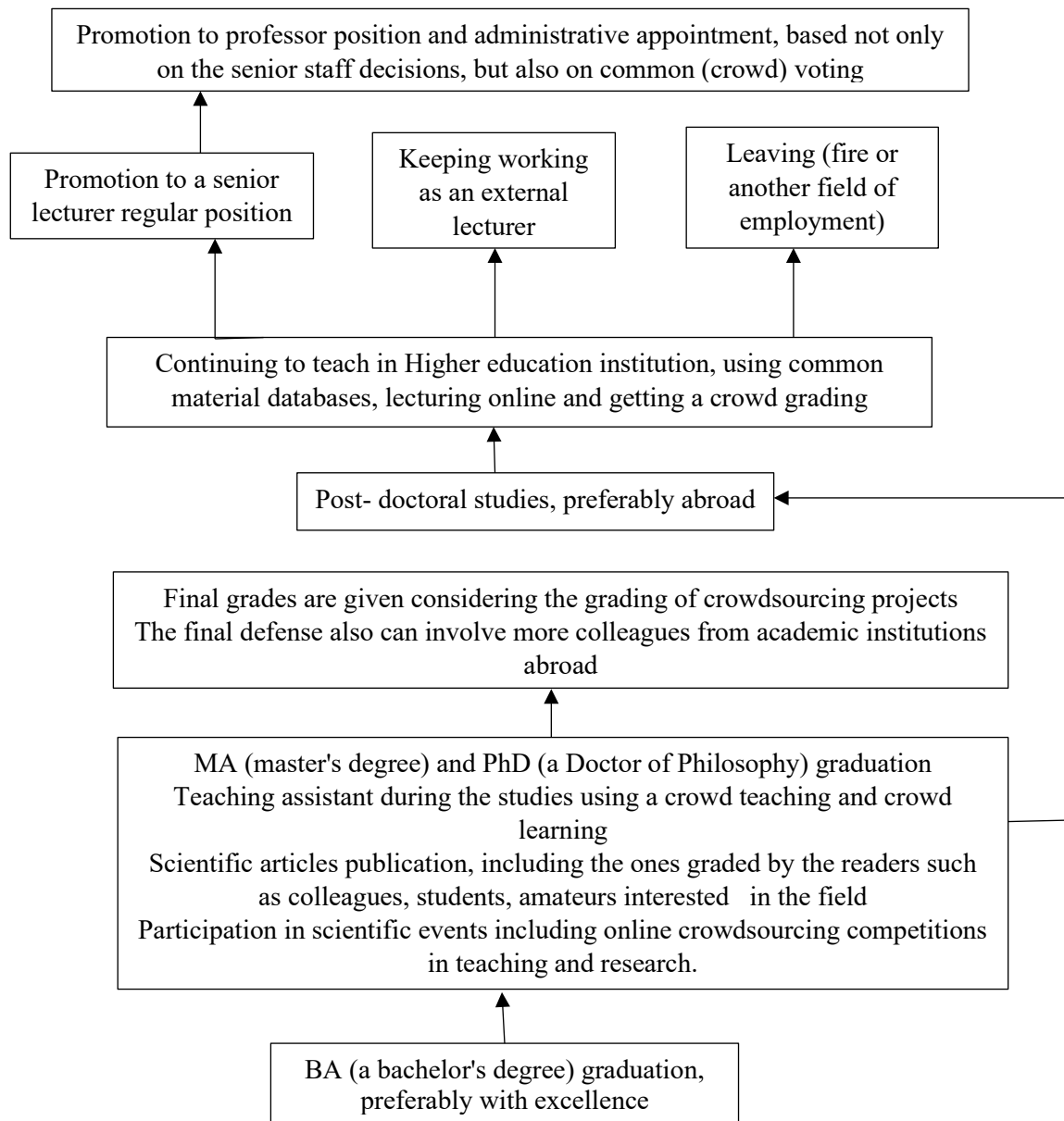
Figure 5. **An algorithm of creating virtual situation games [elaborated by the author]**

This technology is successful way to solve problems of traditional distant education. It allows to get skills and competencies faster and more effectively, to learn how to think creatively and systematically. Real situations and visually programmed games connect the student directly to solving the problems. A teacher is actually a mediator who may interpret the situation and explain how she perceives it. Sometimes the teacher is not even needed. This way of learning improved future experts' qualifications and skills and also makes them more creative personalities.

In order to adapt to changes in the needs of labor market, there is a challenge to improve the existing mechanism of recruitment of Higher education academic staff. Right now, there is no well-defined mechanism of attracting teaching and researchers' staff to academic institutions in Israel. In the author's opinion, the traditional human resources management technologies should be used in Higher education of Israel, but in a more adjusted, technology-based and effective ways. The author proposes a mechanism of choosing and adapting management technologies, which are used at the labor market.

In order to improve and adapt to the changes at the labor market, a modern teacher has to use more innovative technologies. The author proposes a model of a career path of a lecturer and teacher taking into consideration technologies like outsourcing and crowdsourcing. Figure 6 describes the proposed use of management technologies in the career path of professional teachers and researchers in the Higher education market.

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┌─────────────────────────────────────────────────────────────────────┐
│ Promotion to professor position and administrative appointment, based │
│   not only on the senior staff decisions, but also on common (crowd)  │
│                              voting                                    │
└─────────────────────────────────────────────────────────────────────┘
         ▲
┌──────────────────────┐   ┌──────────────────┐   ┌──────────────────┐
│ Promotion to a senior│   │ Keeping working  │   │ Leaving (fire or │
│ lecturer regular     │   │ as an external   │   │ another field of │
│ position             │   │ lecturer         │   │ employment)      │
└──────────────────────┘   └──────────────────┘   └──────────────────┘
         ▲                          ▲                      ▲
┌─────────────────────────────────────────────────────────────────────┐
│ Continuing to teach in Higher education institution, using common     │
│ material databases, lecturing online and getting a crowd grading      │
└─────────────────────────────────────────────────────────────────────┘
                          ▲
            ┌──────────────────────────────────────┐
            │ Post- doctoral studies, preferably abroad │◄──────┐
            └──────────────────────────────────────┘           │
                          ▲                                     │
┌─────────────────────────────────────────────────────────────────────┐
│ Final grades are given considering the grading of crowdsourcing       │
│ projects                                                              │
│ The final defense also can involve more colleagues from academic      │
│ institutions abroad                                                   │
└─────────────────────────────────────────────────────────────────────┘
                          ▲
┌─────────────────────────────────────────────────────────────────────┐
│ MA (master's degree) and PhD (a Doctor of Philosophy) graduation      │
│ Teaching assistant during the studies using a crowd teaching and      │
│ crowd learning                                                        │
│ Scientific articles publication, including the ones graded by the     │
│ readers such as colleagues, students, amateurs interested in the field│
│ Participation in scientific events including online crowdsourcing      │
│ competitions in teaching and research.                                │
└─────────────────────────────────────────────────────────────────────┘
                          ▲
            ┌──────────────────────────────────────┐
            │ BA (a bachelor's degree) graduation,   │
            │ preferably with excellence             │
            └──────────────────────────────────────┘
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Figure 6. Use of management technologies (MT) in the career path in the Higher education market [developed by author]

The author believes that additional adaptation technologies of buddying and job shadowing which are not used commonly yet should help the academic staff to continue teaching and researching in Higher education institutions. Headhunting and preliminaring should help the institutions to choose the right candidates for promotion senior lecturer positions, and exclusive search should promote further. Lifelong learning and learning for job technologies should be implemented all the time on any stage, including those which are not presented in the scheme of an academician career path.
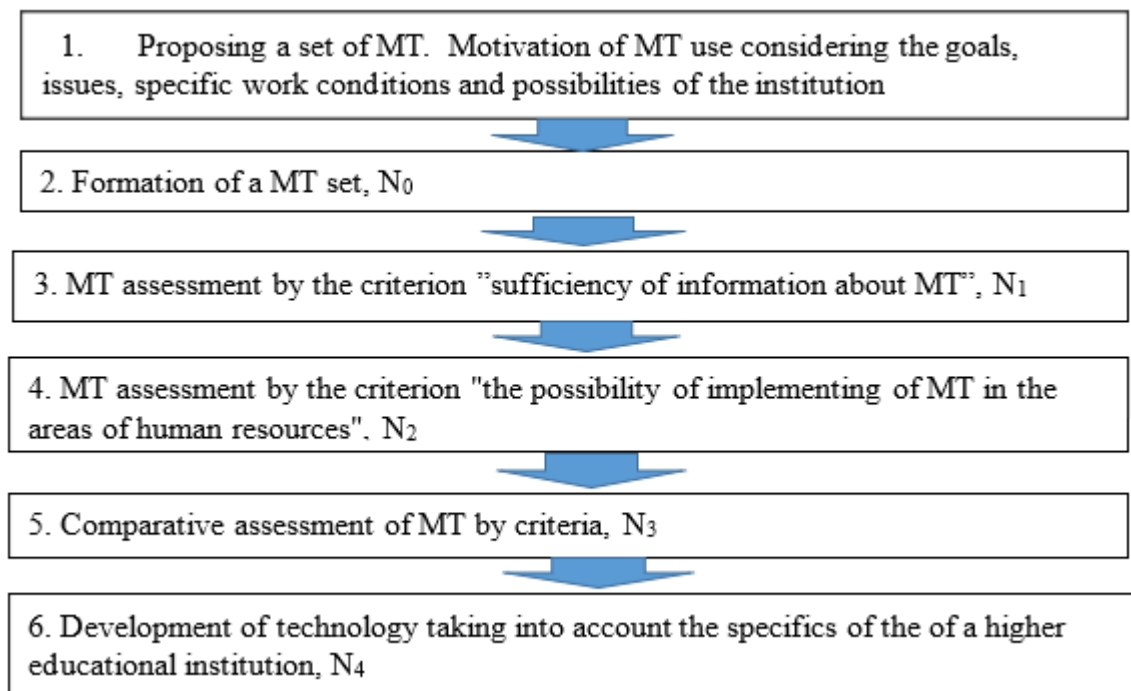
Higher education institutions should plan their demands now and in the future, taking possible changes at the market into account, developing its staff to be prepared to possible transformations and ready to react. For this end, all the staff members should be constantly trained to use more technologies in their field and even to conquer other, neighbor fields of studies. It demands lots of work and constant

efforts, on the one hand, but it could provide a regular job, on the other hand. Employee having a rich toolset will probably be employed on a more regular basis than the one who is not ready to improve constantly.

To ensure a successful adaption of employees to the organization, a management should note that adaptation is a two-sided process: the employee adapts to the organization, its conditions and job requirements, and vise versa- the organization is getting used to the employee.

Adaptation mechanism of management technologies in the field of Higher education of Israel is crucial. In order to adapt to changes in the needs of labor market, there is a challenge to improve the existing mechanism of recruitment of Higher education academic staff. Right now, there is no a well-defined mechanism of attracting teaching and researchers' staff to academic institutions in Israel. For this end, the management system of Higher education needs to be modernized, especially in the field of human resources management. An effective human resources politics should be implemented in Higher education institutions, innovative approaches should be used in recruiting and evaluation of academic staff members.

The author proposes a mechanism of choosing and adapting management technologies for the labor market, which is the step-by-step proceeding from general to particular (Figure 7).

1. Proposing a set of MT. Motivation of MT use considering the goals, issues, specific work conditions and possibilities of the institution

2. Formation of a MT set, N_0

3. MT assessment by the criterion "sufficiency of information about MT", N_1

4. MT assessment by the criterion "the possibility of implementing of MT in the areas of human resources", N_2

5. Comparative assessment of MT by criteria, N_3

6. Development of technology taking into account the specifics of the of a higher educational institution, N_4

Figure 7. The mechanism of adaptation and selection of management technologies [developed by the author based on [7]]

At each stage, according to the developed mechanism, technologies that do not meet the necessary criteria of a certain stage are excluded from the entire set of management technologies (N0). Due to the fact that the company is interested in the results of the application of adapted technologies, their selection is carried out depending on their importance for achieving the goals set.

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[7] BLAGORAZUMNAYA, O. Forming the management mechanism of adaptation the management technologies to the needs of the labor market. EcoSoEn, Scientific Journal Economics, Social and Engineering Sciences. Free International University of Moldova. Year 2, Nr. 1-2/2019, pp. 23-31. ISSN 2587-344X

The developed stages of selection and adaptation of management technologies are based on assessing the possibility and necessity of applying management technologies in a higher educational institution, using the following criteria: the sufficiency of information about management technologies; the possibility of implementing management technologies at various levels of management; the possibility of implementing management technologies in the areas of staff management; the possibility of performing general management functions; the possibility of introducing management technologies based on comparative assessment of costs, time and social criteria. The proposed adaptation mechanism can be used, in addition to higher education institutions, in various companies to select management technologies that meet the individual goals and problems of the company.

III. GENERAL CONCLUSIONS AND RECOMMENDATIONS

Interaction's system of education system and labor market is a dynamic and open one, requiring a certain mechanism of management in order to achieve the goals and providing a synergy effect. Management technologies have to be improved and adapted to new conditions at the labor market, for the sake of making an effectiveness of education institutions' organization higher .

After profound research on the subject of «Improving and adapting the management technologies in order to meet the needs of the labor market for the education field of Israel», the author arrived to the following conclusions:

.1 Based on theoretical studies and analyses of approaches to the interaction of the labor market and the market of educational services, the author reveals a following feature of the educational market: the presence of bilateral links between the interdependent markets. The labor market and higher education system are interrelated, with impacts in several aspects of the labor market such as employment, job structure, and wage levels. Likewise, the education system is also affected by the labor market, and requires constant adjustments to meet the demand for highly qualified professionals through learning programs and development of in-demand educational programs. Understanding these relationships is necessary to identify the features of the process of providing educational services.

.2 The author has highlighted several characteristics of the academic labor market, such as a strong emphasis on education and specialized skills, as well as a focus on research and teaching. Despite limited employment opportunities, job security tends to be high in this field. However, wages can be relatively low compared to other professions, and career advancement opportunities may be limited. In addition, academic institutions are often heavily dependent on funding, which can create additional challenges for those working in the academic labor market.

.3 In conditions of ever-changing of demand and supply at the labor market, firms and education institutions have to master management technologies, which will allow them to treat their human staff wisely. As a result, a mechanism of human staff outsourcing and social and labor relations in the educational activity of an education institution has to be flexible and adaptive.   Direction of outsourcing services' implementation in a higher education system of Israel, suggested by the author, will help education institutions not only attract mediator companies for outsourcing services, but also provide such services by their own .

.4 As a result of research, the author has revealed that Israel has a well-developed system of higher education, with universities and colleges offering a wide range of programs and degrees. In recent years, there has been a growing demand for higher education in Israel due to factors such as population growth, an increase in the number of students, and the need for qualified professionals in various fields. This has created employment opportunities in the higher education sector for teachers, researchers, administrators, and support staff. The author noted that teaching positions in Israeli

universities usually require academic degrees (Bachelor, Master or PhD) in the relevant field of study. The demand for faculty can vary by discipline and university. In addition to teaching positions, there are also opportunities in research positions, especially for individuals with specialized knowledge in scientific, technological, and social research. The demand for administrative and support staff, including staff in various departments, IT professionals, student advisors, and others, depends on the size and specific needs of each institution.

.5 The widespread implementation of outsourcing, outstaffing, and personnel leasing, collectively referred to as out-technologies, has been observed in many countries. These technologies have a significant impact on the labor market's functioning and the development of labor relations, with their utilization aiding in addressing challenges associated with employee recruitment, termination, labor disputes, and more. It has been determined that numerous universities employ outsourcing practices by leasing their buildings and facilities to external companies, hiring external personnel for various tasks, managing personnel, providing financial support to students, handling accounting, and other functions.

.6 The problems related to the outsourcing of academic staff in Israel have been identified, including the uncertainties surrounding employment and working conditions for external teachers and lecturers. These individuals often lack stable positions, work part-time, and receive salaries that do not correspond to their seniority or work experience, resulting in insufficient social benefits. Additionally, the absence of a collective agreement between the external organization of teachers and the educational institution's management further exacerbates these issues. According to the author, addressing the challenges faced by external teachers in the higher education system necessitates institutional recognition and support.

Solution of issues dealing with researches in the field of improvement and adaptation of management technologies to the labor market needs in the education field of Israel, which were reflected in the current paper, could be considered as the following methodological recommendations:

.1 The Ministry of Education of Israel and the leadership of educational institutions are invited to implement the author's proposed stages of introducing crowdsourcing as a management technology within educational institutions. This can be achieved by implementing crowdsourcing projects to address pressing issues in the development of educational institutions, enhance the quality of decision-making, tackle complex tasks, and initiate new projects and events. The author suggests adopting an integrated approach to analyzing the problem of improving the quality of the educational product (educational materials) by engaging in socially significant projects and involving beneficiaries (students, teachers, employers) in developing solutions through crowdsourcing. This can include volunteering in research activities and acquiring professional skills. Through crowdsourcing, the teaching staff will have additional opportunities for advanced training and career growth. Both educational institutions and participating companies will be able to identify talented specialists, reduce certain costs, save time, and streamline decision-making processes, such as increasing employee wages.

.2 The author recommends that heads of educational institutions utilize the model for organizing a virtual educational environment and the algorithm for implementing a virtual learning game in the training of future teachers. This necessitates continuous learning and professional development of personnel, including department heads, teachers, and consultants. Furthermore, it involves leveraging and enhancing the existing infrastructure of Internet technologies, supporting computer-based training, and other related initiatives. Implementing the stages of organizing a virtual educational environment for training future teachers is advised, encompassing goal setting, establishing objectives, selecting guiding principles, choosing organizational forms of training, monitoring educational needs, and assessing results. The application of the proposed model and algorithm will

enable the utilization of innovative methods for knowledge exchange within the learning process, foster the intellectual engagement of students, and motivate teachers to grow professionally.

.3 Managers and teachers of educational institutions are advised to adopt the teacher's career growth model, incorporating outsourcing and crowdsourcing, as the foundation for developing human resources and facilitating career advancement. This model enables the teaching staff to acquire new teaching methodologies, enhancing their professional skills and competence. It also provides students with increased opportunities to influence the quality of education. Moreover, faculty management can accurately assess individual abilities and contributions of teachers, aiding in informed decisions regarding promotions and career progression. By implementing this model, educational institutions can foster a supportive and dynamic environment that nurtures continuous growth and improvement for both teachers and students.

4. Heads of educational institutions are recommended to adopt the mechanism proposed by the author for selecting and adapting management technologies (MT) to meet the requirements of the labor market in the field of higher education in Israel. This mechanism consists of six stages: (motivation for the use of MT, Formation of a set of MT, evaluation of MT based on the criteria of "sufficiency of information" and "feasibility of implementation in the areas of human resources", comparative assessment of MT using specific criteria, development of technology considering the university's specifics). The developed stages of selection and adaptation of management technologies, based on an assessment of the possibility and necessity of using management technologies in a university, will allow us to assess the possibility of introducing management technologies at various levels of management in the implementation of management functions; in the field of personnel management; to compare the cost of time and others costs.

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2. Articole în culegeri ştiinţifice

2.1. în lucrările conferinţelor ştiinţifice internaţionale (peste hotare)

1. AWADA, S. Экономическое содержание рынка труда - особенности Израиля. В: *Наука и инновации – стратегические приоритеты развития экономики государства. Материалы VII Международной научно-практической конференции, спецвыпуск, 05 февраля 2016.* Казахстан: Костанайский инженерно-экономический университет имени М. Дулатова, 2016, с.18-22. ISSN 1684-9310.

2. AWADA, S. Markets and their flexibility. In: *Индустриализация основа нового экономического роста государства. Материалы VIII Международной научно-практической конференции, спецвыпуск, 30 ноября 2016.* Казахстан: Костанайский инженерно-экономический университет имени М. Дулатова, 2016, с.192-194. ISBN 1684-9310.

3. БЛАГОРАЗУМНАЯ, О.Н., АВАДА, С. Особенности взаимодействия образовательных учреждений и бизнеса в Молдове. В: *Актуальные проблемы развития вертикальной интеграции системы образования, науки и бизнеса: экономические, правовые и социальные аспекты: материалы VI Международной научно-практической конференции 26-27 декабря 2017, Т.1.* Воронеж: ВЭПИ, 2017, с. 2-5.

4. AWADA, S. Innovational virtual education as a new teaching technology. In: *Стандартизация – инструмент повышения конкурентоспособности и интеграции казахстанской продукции в мировую экономику. Сборник материалов международной научно-практической конференции, 24 октября 2019.* Kazakhstan, Nur-Sultan: Kazakh Agro Technical University. S. Seifullina, 2019, с.6-9. ISBN 978-601-257-193-6.

2.2. în lucrările conferinţelor ştiinţifice internaţionale (Republica Moldova)

1. AWADA, S. Labor market management. În: *Preocupări contemporane ale ştiinţelor socio-umane. Materialele Conferinţei Ştiinţifice Internaţionale. Ediţia a VI-a. Chişinău, 11-12 decembrie 2015.* Chisinau: ULIM, 2016, p. 17-21. ISBN 978-9975-933-82-7.

2. AWADA, S. Types of markets. В: *В науку будущего через формирование интеллекта и профессиональных компетенций:* Сборник научных трудов аспирантов, магистров, студентов/ НОУ ВО Московская академия экономики и права, Тираспольский филиал. Тирасполь: Б. н., 2016, p.151-157. ISBN 978-9975-3146-7-1.

3. AWADA, S. Education market in Israel. В: *Economia inovaţională şi dezvoltarea economică durabilă: analiza problemelor şi perspectivelor. Материалы VII Международной научно-практической конференции 17-18 ноября 2016.* Кишинев: Славянский Университет, 2017, p. 58-60. ISBN 978-9975-117-40-1.

4. AWADA, S. Social management: different aspects. În: *Asigurarea viabilitifii economico-manageriale pentru dezvoltarea durabill a economiei regionale in conditiile integrlrii in UE: materialele conferinfei ştiintifice internationale Balti: 16-17 septembrie 2016.* Iaşi: PIM, 2017, p.127-130. ISBN 978-606-13-3642-5.

5. BLAGORAZUMNAIA, O., AWADA, S. Managerial out-technologies on the labor market. In: *Universitas Europaea: towards a knowledge-based society through europeanisation and globalisation. International scientific conference 13-20 octomber 2017.* Chisinau: ULIM, 2018, p.72-76. ISBN 978-9975-3168-7-3.

6. AWADA, S. Labor market – the issue of education gregorian experience. În: *Asigurarea viabilităţii economico-manageriale pentru dezvoltarea durabilă a economiei regionale în condiţiile integrării în UE. Materialele conferinţei ştiinţifice internaţionale, Bălţi, 15-16 septembrie 2017.* Balti: SU „Alecu Russo", 2018, p.72-73. ISBN 978-9975-50-215-3.

7. AWADA, S. The problem of external teachers in higher education in Israel. În: *Asigurarea viabilităţii economico-manageriale pentru dezvoltarea durabilă a economiei regionale în condiţiile integrării în UE. Materialele conferinţei ştiinţifice internaţionale, Bălţi, 15-16 septembrie 2017.* Balti: SU „Alecu Russo", 2018, p.122. ISBN 978-9975-50-215-3.

8. BLAGORAZUNMNAYA, O., AWADA, S. The directions of outsource services implementations in the education system of Israel. În: *Modern paradigms in development of the national and world economy. International scientific conference November 01-02 2019.* Kishinev: Moldova State University, 2019, p. 364-370. ISBN 978-9975-149-73-0.

ADNOTARE

La teza de doctor în științe economice
Îmbunătățirea și adaptarea tehnologiilor de gestionare pentru a răspunde necesităților pieței muncii în domeniul învățământului superior al Israelului
Awada Saleh, Chișinău, 2023

Specialitatea: 521.03 – Economie și Management în domeniul de activitate.

Structura lucrării: întroducere, trei capitole, concluzii și recomandări, bibliografie din 208 de surse, 140 pagini de text de bază, 13 de tabele, 35 figuri, 15 anexe. Tema tezei a fost aprobată în 27 de articole academice, publicate în Republica Moldova, Kazahstan, Federația Rusă, India, Israel.

Cuvintele cheie: adaptare, outsourcing, crowdsourcing, modele, metode, management, tehnologie, educație, ofertă, piața muncii, cerere.

Scopul tezei este de a fundamenta științific prevederile metodologice și de a elabora recomandări științifice și practice pentru utilizarea tehnologiilor de management și a mecanismului de adaptare a acestora la nevoile pieței muncii în raport cu domeniul învățământului superior din Israel.

Obiectivele cercetării: descrierea caracteristicilor cheie ale pieței muncii și a interacțiunei acesteia cu piața serviciilor educaționale; investigarea specificului pieței de muncă academice ca componentă integrantă a pieței forței de muncă în ansamblu din țară; examinarea funcționării tehnologiilor de management pe piața muncii; descrierea situației actuale de pe piața muncii în raport cu serviciile educaționale; analiza pieței de muncă academice din Israel; analiza mecanismului de outsourcing și relațiilor sociale și de muncă în contextul educației din Israel; formarea abordării pentru utilizarea crowdsourcing-ului ca tehnologiei promițătoare pentru gestionarea dezvoltării învățământului superior; dezvoltarea unui model de organizare a mediului virtual ca o tehnologie nouă pe piața muncii a viitorilor profesori; crearea unui mecanism de adaptare a tehnologiilor de management la nevoile pieței învățământului superior din Israel.

Noutatea și originalitatea științifică constă în dezvoltarea și descrierea etapelor implementării crowdsourcing-ului ca tehnologie de management într-o instituție de învățământ, elaborarea și descrierea unui model de organizare a unui mediu educațional virtual pentru pregătirea unui profesor viitor, dezvoltarea unui algoritm pentru utilizarea jocului virtual în proces de studii, modelului de carieră a unui profesor, ținând cont de outsourcing și de crowdsourcing, mecanismul de alegere și adaptare a tehnologiilor de management la cerințele pieței muncii în raport cu sfera învățământului superior din Israel.

Rezultatul obținute care contribuie la soluționarea unei probleme științifice importante rezidă în dezvoltarea unor concepte teoretice și practice ale formării nevoilor pe piața muncii în domeniul învățământului superior, care confirmă posibilitatea adaptării unui set de modele a tehnologiilor manageriale folosind outsourcing-ul, crowdsourcing-ul, instruire virtuală.

Semnificația teoretică a lucrării constă într-o abordare metodologică cuprinzătoare bazată pe o combinație a argumentării teoretice și aplicării practice a recomandărilor propuse în adaptarea tehnologiilor manageriale pe piața muncii în domeniul învățământului superior din Israel. Pozițiile teoretice cunoscute sunt prezentate în publicații pe această temă de oameni de știință israelieni și străini.

Valoarea aplicativă a lucrării constă într-o analiză cuprinzătoare a factorilor ofertei și cererii de personal talentat în mediul educațional, iar concluziile și recomandările propuse vor îmbunătăți echilibrul între ofertă și cerere pe piața muncii în domeniul învățământului superior din Israel.

Implementarea rezultatelor științifice: cercetarea științifică sub formă de concluzii și recomandări a fost prezentată la conferințe științifice și în reviste și a fost recunoscută ca fiind una utilă pentru adaptarea tehnologiilor manageriale de resurse umane la nevoile pieței muncii în domeniul învățământului superior din Israel.

ANNOTATION

To dissertantion paper for the PhD degree in economic sciences

Improving and adapting the management technologies in order to meet the needs of the labor market for the higher education field of Israel

Awada Saleh, Chishinau, 2023

Specialty: 521.03- Economy and management in the field of activity

Structure of the thesis: introduction, three chapters, general conclusions and recommendations, bibliographical list of 208 titles, 140 pages of basic text, 13 tables, 35 figures and 15 appendixes. The theme of dissertation was implemented in 27 academic articles, published in Moldova, Kazakhstan, Russia, India, Israel.

Key words: adaptation, outsourcing, crowdsourcing, models, methods, management, technologies, education, supply, labor market, demand.

The purpose of the study is to scientifically substantiate the methodological provisions and develop scientific and practical recommendations for the use of management technologies and the mechanisms for adapting them to the needs of the labor market in relation to the field of higher education in Israel.

The objectives of the thesis: describe the key characteristics of the labor market and its interaction with the market for educational services; investigate the unique aspects of the academic labor market as an integral component of the overall labor market in the country; examine the functioning of management technologies within the labor market; provide an overview of the current labor market situation in relation to educational services; assess the mechanisms of outsourcing and social and labor relations in the context of education in Israel; formulate an approach for utilizing crowdsourcing as a promising technology for managing the development of higher education; develop a model for organizing a virtual environment as a new technology in the labor market of future teachers; create a mechanism for adapting management technologies to the needs of the higher education market in Israel.

The scientific novelty and originality consists of development and stages' description of crowdsourcing implementation as management technology in education institution, development and description of model for organizing a virtual educational environment for training of future teachers, algorithm of virtual game use in teaching, models of career growth of a teacher taking into consideration a use of outsourcing and crowdsourcing, mechanism of choice and adaptation of management technologies to the demands of labor market in relation to the field of higher education in Israel.

Resolution of the scientific problem consists of the development of theoretical and practical concepts for building up demands at the labor market in relation to the field of higher education in Israel, confirming the ability to adapt for a set of management technologies' models using outsourcing, crowdsourcing, virtual teaching.

The theoretical significance of the work is the complex methodological approach, which is based on the combination between the theoretical motivation and practical application of the suggested recommendations in issues of management technologies' adaptation in the labor market in relation to the field of higher education in.

The practical value of the work consists of complex analysis of demand and supply factors of talented human resources in the education environment, and the proposed conclusions and recommendations will improve the balance between supply and demand in the labor in relation to the field of higher education in Israel.

The implementation of the scientific outcomes: the scientific researches in the form of conclusions and recommendations were presented at scientific conferences and journals, and they were recognized beneficial for adapting managerial personnel technologies to the needs of the labor market in relation to the field of higher education in Israel.

АННОТАЦИЯ

К диссертационной работе на степень доктора экономических наук
Совершенствование и адаптация управленческих технологий к потребностям рынка труда в сфере высшего образования Израиля
Авада Салех, Кишинэу, 2023
Специальность: 521.03 – Экономика и менеджмент по отраслям

Структура работы: введение, три главы, выводы и рекомендации 208 источников библиографии, 140 страниц основного текста, 13 таблиц, 35 рисунков, 15 приложений. Тема диссертации была апробирована в 27 академических статьях, опубликованных в Молдове, Казахстане, России, Индии, Израиле.

Ключевые слова: адаптация, аутсорсинг, краудсорсинг, модели, методы, управление, технологии, образование, предложение, рынок труда, спрос.

Цель исследования заключается в научном обосновании методологических положений и разработки научно-практических рекомендаций применения управленческих технологий и механизма их адаптации к потребностям рынка труда по отношению к сфере высшего образования Израиля.

Задачи исследования: описать основные характеристики рынка труда и его взаимодействие с рынком образовательных услуг, раскрыть особенности академического рынка труда как составной части рынка труда страны; раскрыть аспекты функционирования управленческих технологий на рынке труда , описать текущую ситуацию на рынке труда по отношению к образовательным услугам, проанализировать академический рынок труда в Израиле, проанализировать механизм аутсорсинга и социально-трудовых отношений применительно к образованию в Израиле, сформировать подход к применению краудсорсинга как перспективной технологии управления развитием высшего образования; разработать модель организации виртуальной среды как новой технологии на рынке труда будущих учителей; разработать механизм адаптации управленческих технологий к потребностям рынка высшего образования Израиля.

Научная новизна и оригинальность состоит в разработке и описании этапов внедрения краудсорсинга как управленческой технологии в образовательном учреждении, разработке и описании модели организации виртуальной образовательной среды для подготовки будущего учителя, алгоритма использования игры виртуального обучения, модели карьерного роста преподавателя с учетом использования аутсорсинга и краудсорсинга, механизма выбора и адаптации технологий управления к потребностям рынка труда по отношению к сфере высшего образования Израиля.

Результат, способствующий решению научной проблемы, заключается в развитии теоретических и практических концепций формирования потребностей на рынке труда по отношению к сфере высшего образовании Израиля, подтверждая возможность адаптации комплекса моделей управленческих технологий с использованием аутсорсинга, краудсорсинга, виртуального обучения.

Теоретическая значимость работы заключается в комплексном методологическом подходе, основанном на сочетании теоретической аргументации и практического применения предложенных рекомендаций в вопросах адаптации управленческих технологий на рынке труда по отношению к сфере высшего образования.

Практическая значимость работы заключается в комплексном анализе факторов спроса и предложения талантливых кадров в образовательной среде, а предложенные выводы и рекомендации позволят улучшить соблюдение баланса между спросом и предложением на рынке труда по отношению к сфере образования в Израиле.

Внедрение научных результатов: научные исследования в виде выводов и рекомендаций были представлены на научных конференциях и в журналах, а также признаны полезными для адаптации управленческих кадровых технологий к потребностям рынка труда по отношению к сфере образования Израиля.

AWADA Saleh

IMPROVING AND ADAPTING THE MANAGEMENT TECHNOLOGIES IN ORDER TO MEET THE NEEDS OF THE LABOR MARKET FOR THE EDUCATION FIELD OF ISRAELY

Specialty 521.03 - Economy and management in field of activity

ABSTRACT

Doctoral thesis Doctor in economic sciences