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### **Possibility of crowdsourcing usage in professional training of education managers**

### **Możliwości zastosowania crowdsourcingu w zawodowym szkoleniu managerów edukacyjnych**

#### **Abstract**

The article focuses on the possibilities of using crowdsourcing in the professional training of education managers. We have considered the most widespread in education types and items of crowdsourcing, as intellectual crowdsourcing, crowd-recruiting and crowd-funding, among its variety in business, social and public spheres. Its essence and ways of application are determined for the process of the education managers training. The most widespread directions of educational crowd-funding are analyzed: fund raising for own education; co-financing science; attracting funds for classroom equipment. We have distinguished significant advantages of using crowdsourcing in education and professional training of education managers based on the analysis of the relevance and usage models of crowdsourcing technologies in business, social and public spheres. Beyond that, we have investigated possible models of crowdsourcing usage enhancing the professional training of education managers: ideas collecting on the organization of the educational process, informing research and knowledge generation, and using the crowd to redesign learning. The given models of crowdsourcing usage include the organization, methodology and trained personnel pointed to deal with certain developmental tasks according to specific conditions, such as collecting and processing information, collecting and processing constructive ideas, collecting proposals for draft documents, forming a pool of independent experts. Joint application was stated for examples to facilitate encouragement of the innovation meaning how crowdsourcing could aid to raise educational standards.

**Keywords:** Internet communications; network community; social networks; generation of ideas; educational crowdsourcing; educationalcrowdfunding; educational managers; professional training.

#### **Streszczenie**

Artykuł skupia się na możliwości wykorzystania crowdsourcingu w szkoleniu zawodowym managerów edukacyjnych. Przedstawiono najbardziej rozpowszechnione w edukacji typy i przedmioty crowdsourcingu, takie jak: crowdsourcing intelektualny, croud- recruiting i croud- funding oraz ich różnorodność w sferze biznesowej, społecznej i publicznej. Jego istotę i sposoby zastosowania określa się w procesie szkolenia managerów edukacyjnych. Przeanalizowano najbardziej rozpowszechnione kierunki croud- fundingu edukacyjnego: pozyskiwanie funduszy na własną edukację; współfinansowanie nauki; pozyskiwanie funduszy na wyposażenie klasowe. Na podstawie analizy znaczenia i modeli użytkowania technologii crowdsourcingu w sferach - biznesowej, społecznej i publicznej, wyróżniono

największe zalety korzystania z crowdsourcingu w edukacji i szkoleniu zawodowym managerów edukacyjnych. Poza tym prześledzono możliwe modele użytkowania crowdsourcingu, aby ulepszyć szkolenie zawodowe managerów edukacyjnych: zbieranie informacji na temat organizacji procesu edukacyjnego, informowanie o badaniach i generowaniu wiedzy oraz wykorzystywanie tłumu do przedefiniowania procesu uczenia się. Zaprezentowane modele wykorzystania crowdsourcingu obejmują: organizację, metodologię oraz wyszkolony personel, wskazany w celu radzenia sobie z pewnymi zadaniami rozwojowymi, zgodnie z określonymi warunkami, takimi jak: zbieranie i przetwarzanie informacji, zbieranie i przetwarzanie konstruktywnych pomysłów, zbieranie propozycji projektów dokumentów, tworzenie puli niezależnych ekspertów. Sformułowano wniosek dotyczący dobrych praktyk, ułatwiających wspieranie innowacji, mówiący o tym w jaki sposób crowdsourcing mógłby pomóc w podniesieniu standardów edukacyjnych.

**Słowa kluczowe:** komunikacja internetowa, wspólnota sieci, sieci społeczne, pokolenie idei, edukacyjny crowdsourcing, edukacyjny crowdfunding, managerowie edukacyjni, szkolenie zawodowe.

## Introduction

**Target setting.** Comprehensive informatization of society and rapid development of various technologies of social interaction in the Internet have led to the emergence of special interactive platforms based on the technologies of crowdsourcing, which are now becoming more and more popular not only in business sphere but also in education. Crowdsourcing is based on the knowledge of the «crowd» and aims to reach the common goal - to answer questions, design a new product or solve a problem. This is not a new practice, however, new technologies help people and communities around the world to connect.

**Actual scientific researches and issues analysis.** Despite the fact that the term «crowdsourcing» was first introduced in 2006 by writer Jeff How in a journal article describing a business model based on attracting ordinary consumers, Internet users and volunteers to the production and distribution of ideas, goods and services, the idea of creation of crowdsourcing is far from new. One of the most well documented examples of crowdsourcing is the introduction of the British Parliament's Prize in 1714 for the development of a reliable method for determining geographical longitude. With the development of the Internet, crowdsourcing began to gain popularity around the world and has emerged into a new promising trend that successfully developed as a model for solving any type of problems and challenges that an organization, state and society may face. Wide popularity has been gained by special crowdsourcing projects, including Wikipedia (a free encyclopedia that offers all users the ability to write and edit articles), OpenStreetMap (a free world map that offers users the ability to create detailed maps of cities), Ebird (a free database that offers amateur ornithologists to perform routine observation procedures), etc.. The questions of the use of crowdsourcing technologies in various spheres of activity are disclosed in the scientific publications of many researchers (K. Akkmerman, A. Aniskin, D. Beiker, E. Golubev, M. Giilsar Dolzhenko, D. Dyachkov, O. Kravtsov, D. Maslanov, A. Moss,

I. Nasyrov, A. Pankrukhin, K. Poltorak, K. Prahalad, V. Ramashvami, V. Sagan, V. Smirnova, D. Tapscot, P. Fedorova, P. Feldman, L. Habibullina, S. Shapiguzov ), including in education (Yu. Buzuyev, O. Zhytkova G. Kalinina, O. Kuzminskaya). However, the above-mentioned studies do not give an idea of the possibility of introducing crowdsourcing into the professional training of education managers.

**The object of the article** is to identify opportunities and give examples of crowdsourcing usage in the professional training of education managers.

### **Research methodology**

A set of theoretical methods was used in the course of the study: systematization and generalization of the educational crowdsourcing issue having ensured the practical part of the research, namely, it has provided an objective assessment of the current state of the implementation process of the crowdsourcing models into the professional training of education managers, as well as the possibilities of crowdsourcing instruments usage.

### **Results finding**

Crowdsourcing – is the transfer of certain production functions to an uncertain circle of individuals in order to obtain the necessary ideas and services. It is primarily directed towards the online community, while coordinating its activities with the help of information technology<sup>1</sup>. The main idea of crowdsourcing is that there will always be talented people in the community who are ready to generate ideas, solve problems or even conduct researches for corporate or community purposes for free or for a small reward. At the same time, the main stimulus for them is not the reward, but the opportunity to see the embodiment of their ideas in practice.

From the point of view of our study, it is appropriate to define crowdsourcing in the context of public administration in the education of G. Kalinina, who describes crowdsourcing as a modern universal managerial technology for research and production of new ideas and tools, creation of educational, informational and management products and services using Internettechnologies. At the same time, G. Kalinin regards crowdsourcing in the management of the educational institution, as the modern innovative management technology in terms of syncretic interpenetration of intellectual, communication and information technologies, based on the conceptual principles of convergence, implementation of which will ensure

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<sup>1</sup> D. Beyker, *Innovatsiya modeli biznesu cherez «kraudorsinh» z vykorystannyam sotsial'nykh merezhevykh platform*: URL: [http://sun.tsu.ru/mminfo/2011/000393746/06\\_image/06-087.pdf](http://sun.tsu.ru/mminfo/2011/000393746/06_image/06-087.pdf).

the effective achievement of the mission and strategic goal, providing solutions of the management tasks, achievement of goals and successful implementation of projects in practice<sup>2</sup>.

Scientific sources distinguish the following types of crowdsourcing:

- passive (only on reception) and active (constructive dialogue);
- internal (within the organization or community of experts) and external (without limitation);
- traditional (finding a better idea among many ideas) and sintellectual (finding the set of best ideas based on their collective selection)<sup>3</sup>.

Regarding management, D. Dyachkov gives the following classification of types of crowdsourcing:

- by types of activities (competition, cooperation);
- in the sphere of life (business, social, state);
- by the type of tasks to be solved (product creation (content), voting, search of solutions, people search, information gathering, opinion gathering, testing, support service, fundraising)<sup>4</sup>

Among the variety of types and types of crowdsourcing, such as intelligent crowdsourcing (the use of collective intelligence); crowdtesting (online software testing); crowd recruiting (search and recruitment); crowdfunding (colaboration financing of projects); crowdsourcing (development and improvement of products - collective brainstorming for the search for new ideas); Smart-Sourcing (routine tasks solution); crowdinvesting (creation of sources of passive income for investors); crowdcreation (design of logotypes, slogans, advertising)<sup>5</sup>; the most widespread one in education is the intellectual crowdsourcing, crowd-recruiting (crowd-recruiting) and crowdfunding. Let's dwell on their essence and examples in more detail.

Intelligent crowdsourcing is a technology of intellectual collaboration of the social media connected with implicit knowledge, aimed at the joint creation of intellectual product, the technology of network integration of the implicit knowledge of a large number of people (the «crowd») whose intellectual interaction does not have territorial, corporate, professional, social, cultural and other restrictions.

<sup>2</sup> G. Kalinina, *Kraudsorsyng yak innovatsiyna tekhnolohiya hromads'ko-derzhavnoho upravlinnya v osviti* // VisnykCherkas'koho universytetu. Seriya: Pedahohichni nauky. - 2016. - № 5. – P. 65-72. (in Ukrainian)

<sup>3</sup> S. Shapiguzov, *Kraudsorsing v gossektore: innovatsiya s raschetom na grazhdanskoye obshchestvo*: URL: <http://bujet.ru/article/193827.php> (in Russian)

<sup>4</sup> D. Dyachkov, *Kraud-kontseptsiya yak efektyvnyy instrument upravlinnya* / D. Dyachkov, N. Korshykova // *Ekonomika i orhanizatsiya upravlinnya – Vinnytsya*. – 1 (17) –2 (18), 2014. – P. 333-338 (in Ukrainian)

<sup>5</sup> Y. Golubev, *Ispolzovaniye instrumentov kraudsorsinga kak element usileniya konkurentosposobnosti promyshlennykh predpriyatiy*: URL: <http://naukovedenie.ru/PDF/57EVN514.pdf> (in Russian)

Thus, intelligent crowdsourcing allows you to accumulate and share knowledge based on wiki platforms. The most striking example of intellectual crowdsourcing in education is the creation of Wikipedia - the largest encyclopedia in the history of mankind that is available to everyone. Meanwhile, it would not have existed, if not hundreds of thousands of editors, who step by step enrich Wikipedia with new materials and improve existing articles. The Ukrainian section of Wikipedia has over half a million articles and all of them are created by ordinary people who are experts in their fields.

The following is an innovative model of EdCamp conferences for the professional formation of leaders in educational change. EdCamp was first introduced in 2010 by inspired educators from the United States. To date, more than 1,500 events in 29 countries around the world have brought together leaders, educators, and stakeholders from all over the globe for an open exchange of pedagogical experience, cooperation and solving common challenges. Thanks to the new discussion format the conference is subject to the «two legs» law: the participants determine the program and the course of the event on their own. EdCamp conferences are an alternative to advanced training courses. These measures do not have pre-agreed programs. The course of the event is formed by participants on the first day of the meeting. Everyone can become a speaker here. EdCamp works on the basis of «give, if you can - take if you want.» At such events, teachers exchange their professional experience and ask questions that concern them. After the completion of EdCamp everyone feels the so-called «effect of a long tail» - this is manifested in the continuation of discussions and joint activities of teachers. Both young specialists and veterans of Ukrainian school education are invited to participate in EdCamp.

The main criterion is not the form of ownership, the prestige of the school or anything else, but only your motivation for development and the willingness to take responsibility for the future!

It's worth saying that the EdCamp movement in Ukraine is the most active foreign community after the United States, which works in this format. During the years of its existence, «EdCampUkraine» has implemented and continues to implement a number of projects and public initiatives aimed at professional development of educators and solving problems associated with their activities.

The technology of intellectual crowdsourcing is also used to discuss topical issues of public administration in education in social networks. In particular, in June 2014 a group was created in the social network, Facebook, to discuss issues related to education on the initiative to «talk in a social network», a public organization «SOS Parents», has thousands of members to provide parents with assistance in the event of violating the rights of their children in school or kindergarten and initiating systematic changes in education.

The community works with a simple algorithm:

- the situation is stated (regarding school, or the education system);

- it is checked how this situation correlates with the law;
- the conclusion is made on what needs to be changed: the situation or the law; and then the community makes changes!

Despite the short life of this organization it has initiated numerous changes in the system of education through public initiatives, participation in the Ministry of Science and Education college, cooperation with deputies of different levels and public activists of the parental movement in different parts of the country. In particular, the initiative of «SOS Parents» on the selection of candidates for the positions of the heads of educational institutions, has been embodied in the new Law «On Education». However, followers of this group resorted to a systematic violation of etiquette by resorting to gross, obscene, evaluative expressions and personal abuse. Sometimes, instead of solving a problem, you can drown in personal estimates and judgment in support of a particular message, and without having solved the problem in real life. Sometimes discussions in the network are replaced by street quarrels. However, quarrels in the street and in the network is subject to administrative responsibility. The Facebook policy also provides for responses to the following actions: blocking an account provided that its owner has provided materials that violate the terms of Facebook (without the author's permission, illegal, fraudulent, hostile, offensive, etc.); the owner of the account appeared to be another person; a personal page was used for commercial purposes, as there are company pages for this, and finally, if the owner acted aggressively or abusively or persecuted or threatened people. In this case, even one complaint is enough to block accounts.

Crowd-recruiting – filling vacancies and providing the institution with highly skilled personnel by searching for staff in social networks [15]. An example is the recently created Facebook Vacancy Opportunities Group, which was created to post announcements about available vacancies in educational institutions and for teachers who are seeking a job. For 3 months of its existence, the group already has more than 2000 subscribers and is updated every day with new ads.

A special kind of educational crowdsourcing, based on the idea of collaboration financing of projects, deserves attention - crowdfunding. Any educational initiative, drawn up in the form of a relevant project with all the necessary information (project purpose, task, amount required and the time period for its collection) may receive appropriate funding on one of the Crowdfunding platform. The most famous crowdfunding platforms in Ukraine are Commonwealth (valid since 2012), Na-starte (2014), GoFundEd (since 2016). The last platform is distinguished by its focus on education staff and school projects. During the two years of the GoFundEd on the platform, 60 educational projects from 14 oblasts of Ukraine were implemented, supported by more than 5,000 people from around the world. The total amount from investing in the development of Ukrainian schools was UAH 2,000,000.

The practice of educational crowdfunding becomes quite widespread and concentrates mainly in the following areas.

1. Fundraising for your own education. Paying college or university fees in developed countries is often an unacceptable amount for many families. Therefore, such a platform as GoFundMe is gaining popularity: in 2017, about 130,000 students and their parents began their fundraising campaigns for college fees and raised \$ 60 million for their education. In Ukraine, a similar initiative - UkrainianGlobalScholars has attracted more than 150,000 UAH to support the entry of Ukrainian students to colleges in the United States. Last year, they succeeded in helping 13 students to enter colleges in the US and raised \$ 4 million in scholarships<sup>6</sup>.

2. Co-financing of science is one of the latest trends in the use of crowdfunding. The problem is that grants received by academics at universities are 40-60% «eaten» by the administration. To solve this problem, the Experiment Platform is a platform where researchers can post their own experiments, describe the research method, and accompany their founders with laboratory innovations. The platform has 44.8% of funded projects and about \$ 7 million invested in science<sup>7</sup>.

3. Financing of classroom equipment. The GoFundEd project aims to support the «bottom» initiative in the field of education, which allows creating an environment in which not only parents but the community, business, and organizations can take part in the formation of a specific educational ecosystem. In particular, educators, parents and activists have the opportunity to make schools better, share their own educational ideas, and raise funds for their implementation, becoming part of the change. This is an opportunity for students start learning in action, embodying in life socially important projects.

Based on the analysis of the relevance and patterns of application of crowdsourcing technologies in business, social, and government sectors, we have derived the most significant benefits of using crowdsourcing in education and training of education managers in particular:

- increasing the effectiveness of the search and distribution of socially meaningful information;
- optimization of obtaining results: reduction in costs, human, information, energy and time resources;
- rational use of knowledge, skills, experience and interests of both the «crowd» and the individual;
- creation of new favorable conditions for establishing effective communication with the target audience of service users or for the provision of human life support;

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<sup>6</sup> *GoFundEd: V Ukraine poyavilas' kraudfandingovaya platforma dlya uchiteley*: URL: <http://womo.ua/gofunded-v-ukraine-poyavilas-kraudfandingovaya-platforma-dlya-uchiteley/> (in Russian)

<sup>7</sup> *5 sposobiv vykorystannya kraudfandyndhu dlya osvity*: URL: <https://ain.ua/2018/04/30/kraudfanding-dlya-osviti/> (in Ukrainian)

- increasing the intellectual value of data through tagging, ratings and reviews, as well as providing social recommendations on problem solving for the general public;
- involvement of an active community in participating in the process of forming collegial and transparent management decisions, increasing the responsibility of citizens and society as a whole in the process of their implementation in order to develop their institution of education or country<sup>8,9,10,11</sup>.

Turning to the issue of the professional training of education managers, it is necessary to pay attention to the application of crowdsourcing technologies as a new model for the training of future managers of educational institutions, as well as a tool for receiving feedback, attracting talented and competent specialists from different groups, educational institutions or even countries under the the time of the combination of formal and informal education and the development of a system of support for educational and scientific communications.

The model of use of crowdsourcing includes the organization, methodology and trained personnel that are configured to solve certain developmental problems based on the given conditions. Crowdsourcing is aimed at solving interrelated tasks, such as: collecting and processing information, collecting and processing constructive ideas, collecting proposals for drafting documents, forming a pool of independent experts. Let's consider possible models of use of crowdsourcing in strengthening the professional training of education managers.

The most simple model of application of crowdsourcing in strengthening the professional training of education managers - use it to collect ideas about the organization of educational process. This approach requires that stakeholders - students, teachers, employees, families - share their ideas to help improve the specific aspect of an institution or approach. In this model one of the most powerful crowdsourcing tools can be online surveys - a convenient service to collect various kinds of information. Provided that if the structure and logic are thought out in advance, the form will come together as a puzzle. It should be noted that an on-line poll, such as GoogleForms, contains additions that greatly facilitate their processing.

The next model of application of crowdsourcing is Informing research and knowledge generation. This model is being explored more and more by researchers

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<sup>8</sup> D. Dyachkov. *Kraud-kontseptsiya yak efektyvnyy instrument upravlinnya* / D. Dyachkov, N. Korshykova // *Ekonomika i orhanizatsiya upravlinnya – Vinnytsya*. – 1 (17)–2 (18), 2014. – P. 333-338 (in Ukrainian)

<sup>9</sup> G. Kalinina, *Kraudsorsyng yak innovatsiyna tekhnolohiya hromads'ko-derzhavnoho upravlinnya v osviti* // *Visnyk Cherkas'koho universytetu*. Seriya: Pedahohichni nauky. - 2016. - № 5. – P. 65-72. (in Ukrainian)

<sup>10</sup> *Jeff Howe Crowdsourcing: Why the Power of the Crowd is Driving the Future of Business*. – Random House Business. – 2008. – 312 p. (in English)

<sup>11</sup> O. Kuzminska, *Kraudsorsinh ta osviti komunikatsiyi v uslovyyakh universytetu*: URL:<https://www.sworld.com.ua/konfer40/140.pdf> (in Ukrainian)



and organizations around the world. With regard to the professional training of education managers, the tools of crowdsourcing in this model become professional online community both in social networks and mobile applications (Viber, Telegram). Future managers will be able to get involved and get advice directly from experienced managers. In addition, the openness of a large number of official pages of educational institutions, their subdivisions, professional groups, personal profiles of managers and teachers in Facebook allows you to accumulate study cases on the adoption of certain management decisions and the peculiarities of communicating participants in the educational process in social networks.

Another model of use of crowdsourcing in enhancing the training of education managers is Usingthecrowdtoredesignlearning. Given the traditional approach taken by most countries and institutions to education, it is not surprising that crowdsourcing only begins to affect how we study. But there are innovative examples of how the «stamp» is used to develop new and more personalized study tours, to expand access and provide different opportunities for people at all levels of education.

Massive open online courses – have been in place for several years and offer an alternative approach to meeting both professional and personal educational needs, conducting own research and engaging with colleagues. For example, in Ukraine there are well-proven educational open edEra and Prometheus online courses, various educational projects of public organizations «Osvityria», «EdCamp Ukraine» and «Educational Initiative Open Home» etc..

### **Conclusions and perspectives for further research**

We have found that the most widespread in education is intellectual crowdsourcing, crowd-recruiting and crowd-funding while writing the article. Taking into account the obtained information on the competitive advantages it becomes urgent to spread and implement crowdsourcing into professional training of education managers. It is necessary to prepare such a methodological basis in this context that would allow heads of educational institutions to orient themselves quickly on the possibilities of educational crowdsourcing, to adopt technology and to begin to implement crowdsourcing tools as efficiently as possible introducing a minimum number of mistakes. Guidelines development and formulation are the one of our next tasks to disclosure how to perform it in particular.

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