CASE STUDY: ELEARNING IN COMMUNITY OF PRACTICE FOR MANAGING BY PROJECT

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Abstract. *New Internet technologies have expanded the possibilities of interaction, overcoming geographical restrictions. The training within communities of practices that have their own identity, determined by both the specific competencies of its participants and the common domain (field of activity, mission, values, topic), paves the way gradually in different sectors and at different levels. The research aims at generalizing the experience in organization and implementation of e-learning on Management of Projects in Community of Practice: Sustainable Development for further use and formation of virtual environments for professional training, exchange of experience, and distribution of innovations.*

This article summarizes the typical components of a community of practice as the basis of professional educational systems creation and knowledge management method. The paper considers the essence and prerequisites of successful e-learning. It reveals peculiarities of the virtual learning environment of the "Local Development Project Management" electronic course, which combines all the learning activities and course goals, creates the effect of social presence and co-creation. The main points of the course design should draw attention to its topics, adjust each of its elements to the needs of participants in cognition and learning, motivation for actions, cooperation, and interaction. Methods used include analysis and synthesis, induction and deduction, logical generalization, and comparison.

Keywords: community of practice, e-learning, electronic course, virtual learning environment.

Introduction

Through the advancement of the Internet, platforms for access and exchange of educational content, the dissemination of various means of electronic communication and mobile devices, e-learning (eLearning) is becoming a priority in creating a learning environment in the workplace.

As its purpose is to make education available 24 hours a day and seven days a week, e-learning requires shifting the focus from "teaching what is contained in the curriculum" to "teaching what potential participants need in the workplace" (Katernyak, 2017). Its main advantage is that there is no need to attend specialized educational institutions for learning. You can study wherever there is the internet, at your own pace, at a convenient time for yourself.

Successful e-learning depends on each participant's understanding of the need for learning, own learning ability, and readiness to cooperate in a virtual learning environment (VLE). The learning objectives should be clear and understandable to its potential participants, related to the sphere of their professional interests and the challenges they face today. "The organizers of e-learning should make it: activity-driven – allow each participant to achieve targeted learning goals effectively and efficiently, comfortable, flexible, emotionally positive" (Katernyak, 2017).

Researchers agree that active social relations and interactions make new knowledge, and the role of the teacher lies in encouraging these processes (Hung & Nichani, 2001). People create "meaning" from educational experience by learning with others, and building knowledge based on a participant's previous experience is well suited to e-learning as "learning among participants" (Koohang et al., 2009) or joint learning. The learning environment in the workplace, which enables accumulating advanced knowledge and experience through e-learning in the community of practice (CoP), creates conditions for everyone to demonstrate their readiness to apply and test new knowledge through appropriate learning activities.

People who participate in the processes of knowledge dissemination, knowledge exchange, collective learning in the common field of activity form CoPs (Wenger, 2018). Such communities have their own identity determined by both the individual competencies of their members and the common domain, contribute to the correct awareness and deeper understanding of existing personal knowledge, the development of collective knowledge, the establishment of dialogue and partnership, the dissemination of best practices and the finding of the best solutions (Wenger-Trayner & Wenger-Trayner, 2015; Wenger et al., 2010). The CoP acts as a "live" curriculum in a specific context, provided by both participants with experience and newcomers; the practice is dynamic and involves training for everyone. The art of knowledge management in such VLE within the framework of a competence development strategy means the ability to run processes of constructing meaning through collaboration and co-creation (Katernyak & Loboda, 2016; Garnets et al., 2016).

The "Community of Practice: Sustainable Development" (https://udl.despro.org.ua/) − a virtual association of regional and local development professionals, since 2012 has become a platform for discussing the most relevant issues of territory development, provided participants with access to consulting with experts of various levels, created conditions for the joint generation of new ideas in the field of local development problem solving, contributed to the acquisition of new competencies by community participants through participation in e-learning (Garnets et al., 2016; Kulya et al., 2021). It led to the formation of a critical mass of participants united by the general theme of the community capable of using e-learning tools.

The e-course "Local Development Project Management" (as a promoter of the management culture through projects in local government) became the most popular among the participants of the Community. About 200 people successfully passed the course each time of its implementation during 2012–2020 (ten times in the all-Ukrainian and four – in the regional format).

The research aim is a generalization of experience in organization and realization of e-learning of the management of projects in Community of Practice: Sustainable Development for further use for forming of virtual environments for professional training, exchange of experience, and distribution of innovations.

The research used general scientific and special methods, in particular: analysis and synthesis, induction and deduction, logical generalization, and comparison.

Theoretical Background

VLE is an integrated, organized, open system of information, technological, didactic resources, various forms of computer and telecommunication interaction of educational subjects (Skurativska & Popadiuk, 2017). It performs the main functions: learning (base of learning material); communication (virtual interactive dialogue of participants of the learning process); active and controlling (measures of demonstration and control of knowledge, abilities, skills, adjustments, forecasting of academic achievements, reflection as the self-analysis of learning results); managerial (organization and administration of the learning process).

Studying in the VLE is an active process of its participants. The e-learning model only creates the basis for the constructive efforts of those who learn from self-learning, considering them as active subjects of learning that can independently influence their educational development. The success and effectiveness of this process depend on its high-quality organization and content, high internal motivation, emotional uplift, and positive mood of participants.

The existence of the VLE outside the communication of participants, tutors, facilitators, administrators, distance learning course developers, experts is impossible (Skurativska & Popadiuk, 2017). The activity of the participant is the unit of study progress record in the VLE. This concerns perception of learning information and all productive actions with it – reviewing main and additional learning materials, performing tasks, tests to self-check the assimilation of information, making comments, and peer assessment of the works of other participants of the e-course, etc.

For the VLE projecting not only the content (types of activities and tools that help participants gain the experience necessary to achieve learning goals) but also its designing is crucial. For this purpose, we can successfully apply the "4A" motivation management approach: Attention, Actualization, Attraction, and Action, which enables, on the one hand, checking each information resource and

learning action aware of learning goals, and on the other hand, creating the effect of social presence and co-creation. The use of this approach in e-learning aims at ensuring the social and cognitive presence of participants, ranging from working on their electronic profiles and questionnaires, allowing identification of knowledge gaps, continuing self-assessment and positioning among other participants, drawing up individual learning trajectories to achieve learning goals, monitoring progress in learning, and assessing its final result (Katernyak, 2017; Katernyak & Loboda, 2016). These are the content and architecture of the "Local Development Project Management" e-course, each element of which to some extent actualizes the need for cognition and learning, attraction, actions, cooperation, and interaction.

Separate modules (sections) form the structure of the electronic course. They create the individual educational trajectory of the participant of learning. The participant's activity means to take a specific module, that is, to work up the material, complete tasks, give correct answers to test questions, prepare own presentation, contribute to the group work, etc.

Methodology, Solutions and Results

In 2020 (as in previous years), the "Local Development Project Management" e-course was for those who: sought an effective solution to meet the needs of the community; wanted to know what the "correct" project is, how to prepare it; had a desire to develop a competitive project proposal to attract resources and mobilize the community; was ready to exchange experience and cooperate with local government practices for sustainable development. It is worth noting that the proposed curriculum has become useful both for individuals experienced in project management and for persons without such experience.

1A (Attention) – Attention to the course and its holding.

The target audience of the e-course is the representatives of local government and executive authorities, deputies of local councils, community leaders, public sector activists from all over Ukraine (almost 600 participants registered on the e-course in 2020). Distance learning for them is most suitable to receive additional education or undergo retraining and advanced training. Such e-learning participants are goal-oriented, can better control the learning process, and plan their activities. Their cognitive motivation is closely related to their professional needs. They have a good idea of what kind of knowledge they may need, so they are looking for an efficient educational trajectory and are ready to spend time gaining professional knowledge and skills.

The "project management" as the subject of the course (the opportunity to get an answer to the question "how to prepare the "right" project" and develop a competitive project proposal to attract resources and mobilize the community), as well as a convenient form of learning, were the first factors that grabbed the

attention of most participants to the e-course "Local Development Project Management" and caused them motivational feedback (Fig. 1).
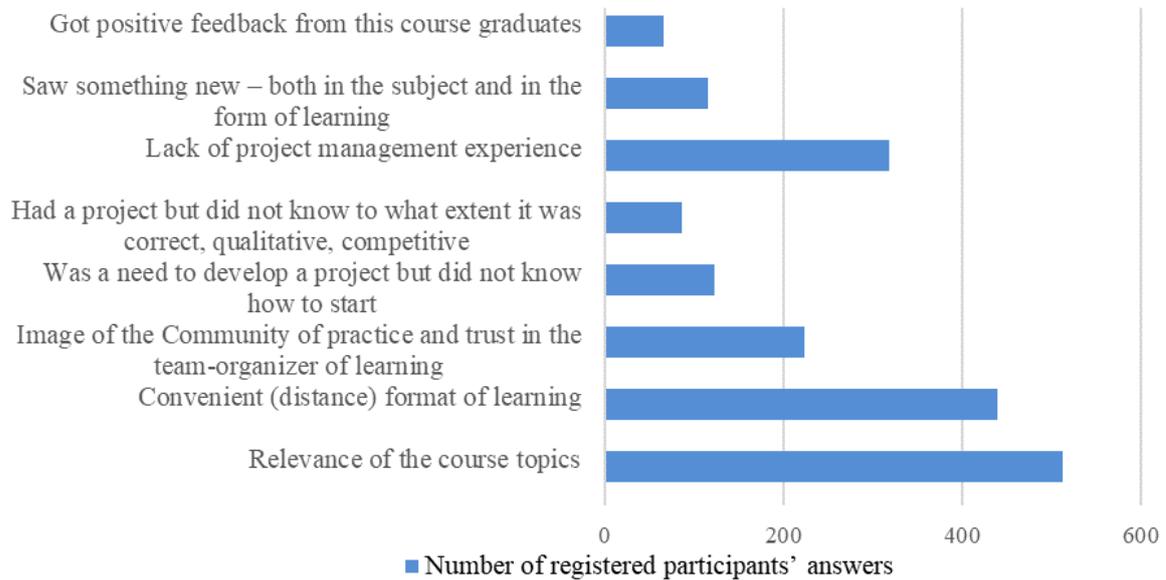

Figure 1 **The main reasons that attracted the attention of participants to the "Local Development Project Management" e-course (2020)** *(entry survey results, by authors)*

All activities of the introductory block are oriented to stimulate and strengthen motivation for the learning-cognitive activities of the e-course participants. After enrollment in the e-course and filling in the entry questionnaire, participants had the opportunity to get acquainted with the principles of studying, recommendations for efficient work in forums, information on the protection of intellectual property. There was particular attention to the topic of the course, a general idea of its content, tasks, types of work, details of the evaluation system, the significance and usefulness of both completing the course in general and performing each task or type of work. Each of the participants decided on the needs they would like to meet (Fig. 2).
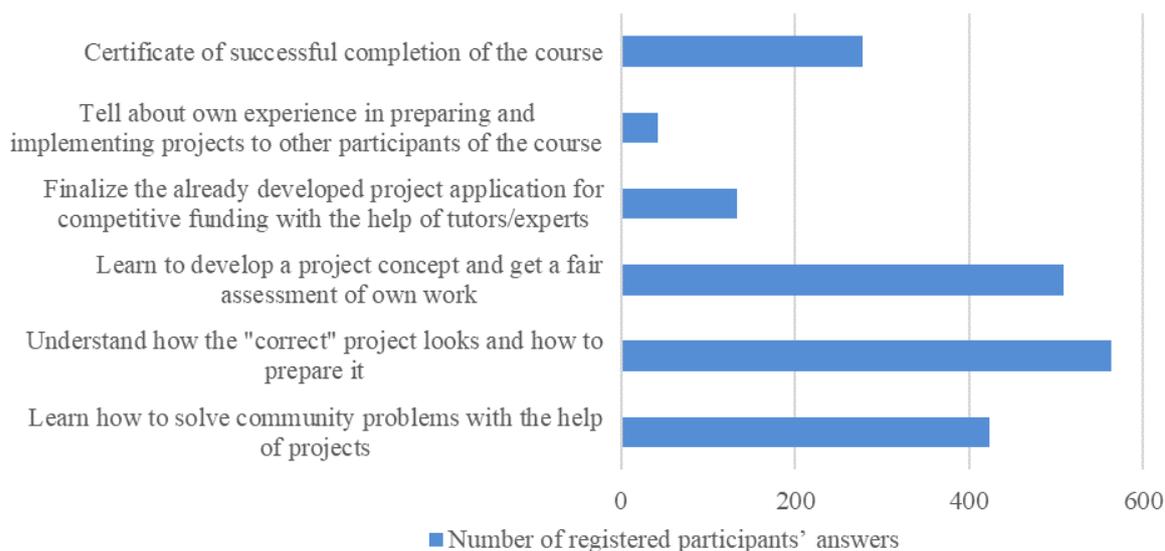
*Figure 2 **Basic needs of participants of the "Local Development Project Management" e-course (2020)** (entry survey results, by authors)*

The intensification of the attention achieves through a self-test which focuses on understanding the goals and methods of organization of learning, knowledge of the deadlines for main activities, and the awareness of the evaluation system in the course.

To ensure the "social and cognitive presence of each participant in the learning process and their "immersion" in learning, communication, creativity, cooperation" (Garnets et al., 2016; Katernyak, 2017), there exist entry instructions before learning and at the beginning of each module, visual instructions and available explanations of how to perform planned activities, short abstracts with outlined each module results.

At the start of each learning module, there is information about its goals and objectives. The forum "News" includes the information message about its beginning, with the obligatory mailing to the e-mail addresses where the participants registered. It posts messages about the start of all learning activities and the nearest deadlines for their implementation. To focus on time, participants use the "Calendar" block with the list of all events related to the learning process and the "Coming Soon" block, which contains information and reminders about the events planned in the course for the near future.

2A (Actualization) – Actualization of learning.

Actualization of learning by focusing on results and understanding of tasks determines the level of directing e-course participants' efforts towards learning activities to achieve learning goals efficiently. Encouragement to cognition, mobilization of resources, search for opportunities to realize knowledge in solving learning problems, objective and rapid evaluation of the results obtained, analysis of the learning process itself support actualization.

Whereas we may determine encouragement by specific future goals or course objectives, mobilization takes place at each moment of studying when the participant has to organize himself, demonstrate all abilities to find a solution, and solve the problem. Possession of information and ability to learn, thirst for purpose, and ability to see opportunities in challenges – all this determines the adjustment for development, which, with successes and mistakes in studying, retains motivation for learning (Katernyak, 2017).

The following blocks make the learning content of the electronic course:
− instructive (videos describing the content of each module with learning tasks, important information; brief descriptions, clear visual instructions, and explanations for all activities planned in the course);
− informative (abstract about the main results of each module, materials for studying (presentations available for downloading), a piggy bank (resource (database) for exchanging useful information, practical developments, manuals) with additional course resources formed by its participants in the learning process, a glossary, an example of a completed project concept template);
− communicative (communication in forums (places for communication, obtaining information, finding partners, exchanging experience) and in chats during learning, online consultations);
− control (tests for all modules of the course and final testing);
− tasks to complete in the workshop.

The active learning process begins with the processing of the first module. Each subsequent module (all modules have a typical structure and types of learning activities) is a logical continuation of the previous one, forming the sufficient knowledge of participants necessary to develop their own local development project concept.

All this, as well as the necessary level of complexity of learning materials, contributes to the achievement of learning goals, creates opportunities to meet cognitive, professional, and social needs of e-course participants.

3A (Attraction) – Engaging in interaction in the learning environment.

Various learning activities, meaningful presentations, the possibility of substantive communication in forums unite in the e-course people with common interests. The course is for convenient use on various devices, including mobile phones. It allows participants to reach it elsewhere, interact with colleagues in the learning environment, actively participate in the joint construction of knowledge and achievement of goals.

The course developers pay special attention to achieving trust among all participants in the learning process. When registering for the course, it is necessary to confirm that its participant shares the values declared in such a virtual environment. The absence of psychological and geographical barriers to communication, the interactive nature of interaction on the exchange of relevant

information and practices, the possibility of self-presentation and self-realization, the establishment of necessary contacts encouraged the social presence of each participant on the educational web platform (Fig. 3, Fig. 4).
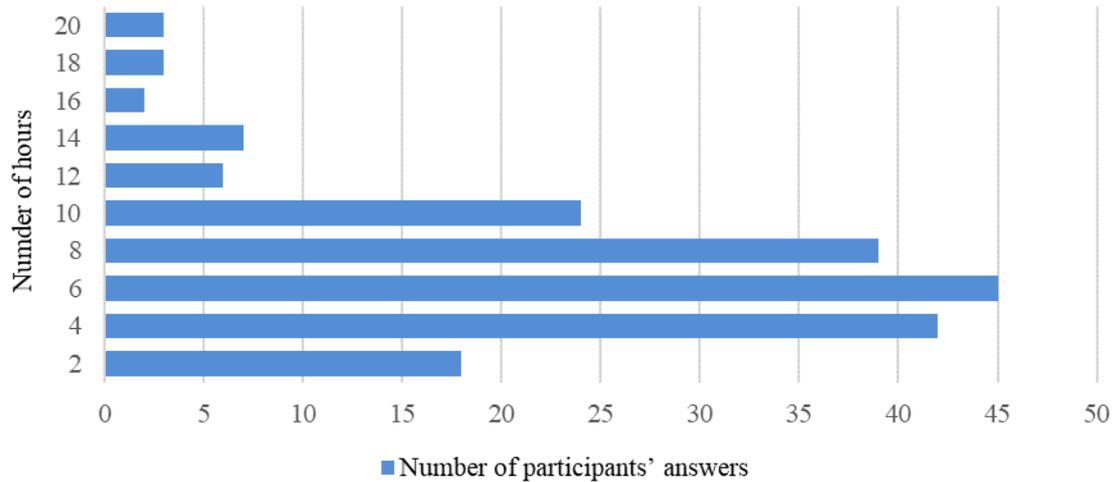

*Figure 3 **Average time spent learning by participants of the "Local Development Project Management" e-course (2020)** (hours per week, by authors)*
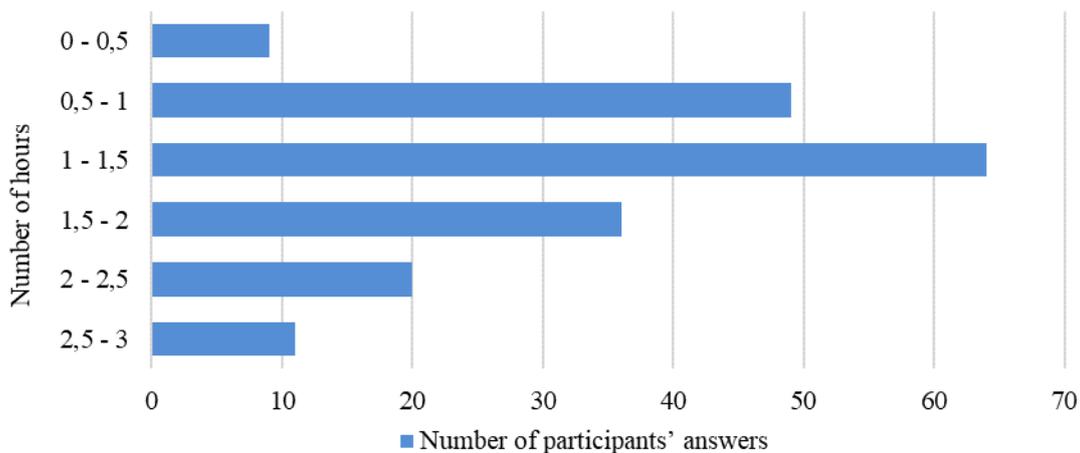

*Figure 4 **The average duration of stay of participants of the "Local Development Project Management" e-course (2020) on the educational web platform** (hours per online session, by authors)*

We observed an hour and a half immersion in the VLE among most course participants. To perform the tasks of each module, participants spent 4–10 hours.

Tutors maintain the electronic course. They actualize the needs of participants in cognitive, learning, and communicative activities, support, direct and involve participants in the learning process, contribute to the interaction of all subjects of study, using educational and information resources, technical means of communication, information transmission, and management of the learning environment. The tutor faces the tasks of optimizing the learning process; within

"trust" and "emotions" – making conditions for co-creation, which results in the generation of ideas, development of new competencies, formation of life experience, and impressions.

To ensure maximum presence and activeness of participants in the e-course, the tutor should create a microclimate that contributes to the flexible communication and learning of participants; create and maintain an atmosphere of trust based on the joint values of the participants, which promotes the exchange of views, cooperation, positioning in the team; ensure privacy, taking into account the feelings of participants, avoid harsh criticism (using hidden criticism); transfer mood and attitude through paralinguistic communicative means (Katernyak, 2017; Andrieiev et al., 2013).

At the beginning of learning, the tutor takes the initiative to conduct communication activities, ensures the exchange of information between all participants in the learning process, promptly and carefully responds to all barriers, needs, and questions of participants on the organization of learning, advises on the content of educational and information materials, on the workshop – filling in the project concept template and peer assessment.

Facilitators help tutors to strengthen communication between participants of learning, to establish interaction between them regardless of their previous experience. They maintain an atmosphere of community, cooperation, professional development on the learning platform, prevent violations of network etiquette by participants in discussions. Facilitators are graduates of previous electronic courses – active participants of the Community of Practice: Sustainable Development. They have a thorough knowledge and practical experience in local government.

The main success factors of the e-learning facilitator are as follows: ensuring the social presence of each participant in the virtual community, when every person can be involved, and the involvement of everyone appreciates properly; everyone can ask a question, everyone's answer will be "heard"; everyone has the right to speak out, and there are no fatal mistakes in learning; creating a favorable environment ("ecosystem") around each participant, which will stimulate the exchange of experience, cooperation, generation of new ideas, development of models, and finding ways to implement them (Katernyak, 2017).

E-course forums are the center for communication and interaction of learning participants, generation of new ideas, and creation of new knowledge. They promote the search for ideas and like-minded people, are a place of active communication and cooperation, conflict-free discussion of alternative views, stimulation of the motivation and initiative of participants to achieve learning goals, fulfill tasks, and acquire competencies.

Throughout the learning in the "Local Development Project Management" e-course, its participants can communicate on topical professional themes in the general forum, where everyone can add one topic for discussion, tell about

himself, share his experience in solving problems in the community, critical situations, own ideas, approaches, solutions, and the intention to change something in the life of the community to ensure sustainable development. Discussions of all topics by colleagues are open, and everyone can leave comments and share experiences. Detailed and constructive comments are of particular value for the participants of learning.

Participants can promptly receive answers to questions or clear explanations about technical difficulties in working (navigating) on the Community of Practice platform or in the electronic course ("Technical Forum"), consultation on the learning process, the content of educational and information materials, the workshop on filling in the template of the project concept, and in the process of peer assessment ("Thematic forum with a tutor").

A positive response to the learning process helps participants to focus, feel comfort and interact. During the learning, participants can express their feelings and emotions after completing tasks (taking tests, working on a project concept, working as a projects expert) (Fig. 5).
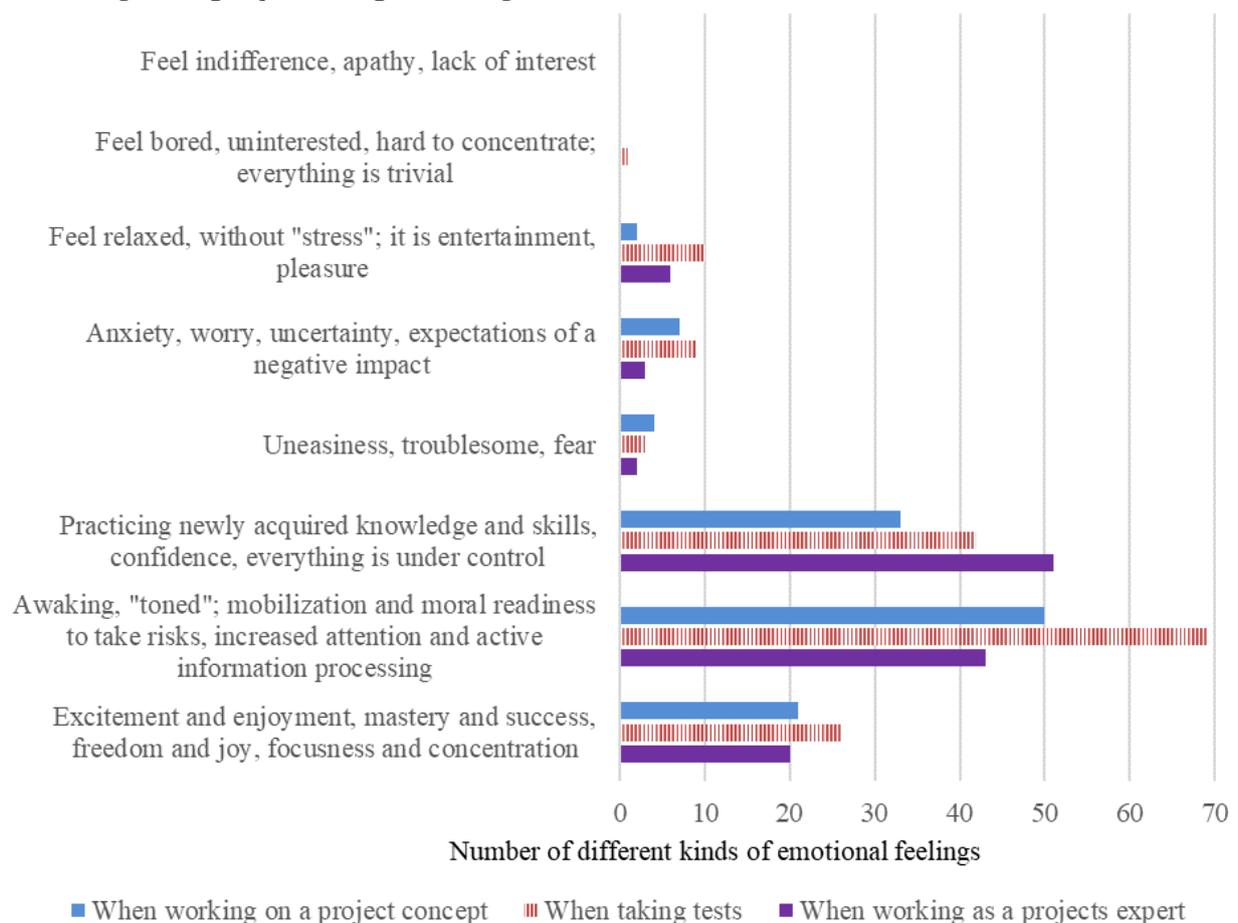

*Figure 5 **The emotional state of participants of the "Local Development Project Management" e-course (2020) during the fulfillment of tasks** (by authors)*

The proposed various topical types of learning activities, professional actions of tutors and facilitators contribute to the high learning and communicative activeness of participants throughout the course. The statistics graphs (Fig. 6, Fig.7) show how many hits there have been on various parts of the course website during one day.
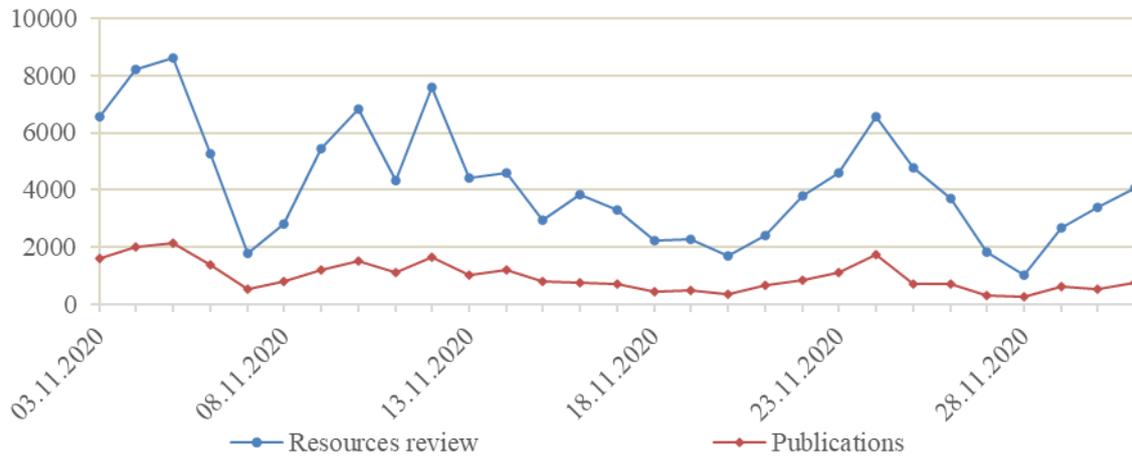

*Figure 6 **Participant activity of the "Local Development Project Management" e-course (2020)** (resources review and publications)*
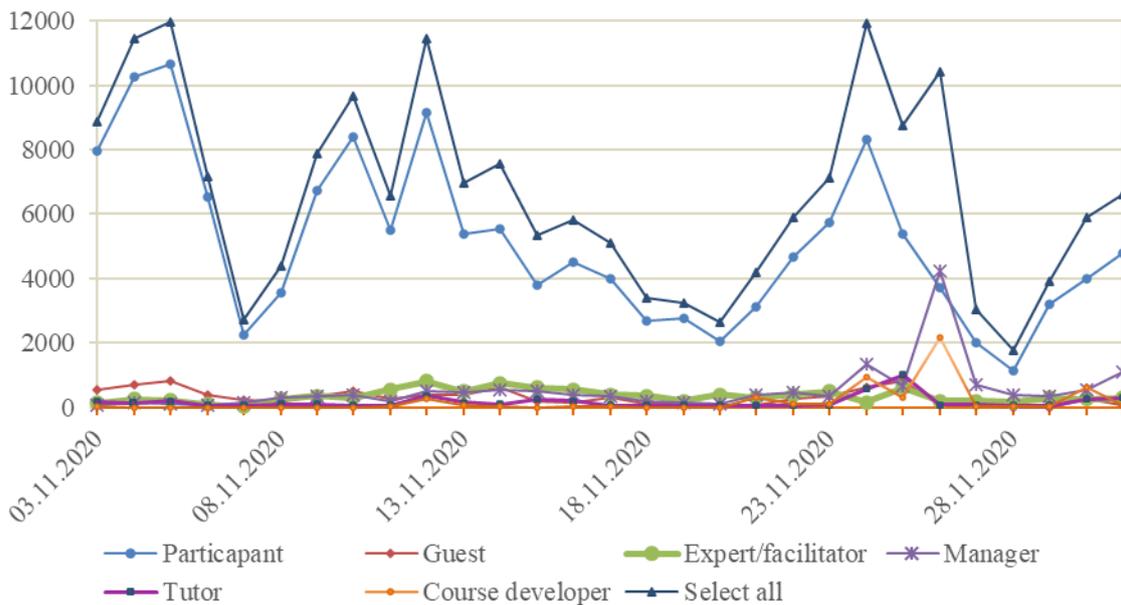

*Figure 7 **Fragment of the report on the overall activity in the "Local Development Project Management" e-course (2020)** (by authors)*

New knowledge and ideas generated by course participants in the process of learning, communication, and constructive interaction contribute to the

achievement of learning goals, promote the development of the community of practice.

4A (Action) – Practical actions on implementation of acquired knowledge.

All educational and information resources and activities in the electronic course create opportunities to meet various cognitive, professional, and social needs of the participants. To develop components of competence in the field of project management and apply knowledge gained in the learning process, in parallel with the processing of module materials of the course, participants should do the workshop: develop a concept of a local development project (learning), make concepts peer assessment, and exchange recommendations for their improvement.

To formulate the concept of their project, participants fill in all the components of the proposed template (project purpose, alternatives, goal, stakeholders, needs, and requirements of beneficiaries, project decisions, expected results, validation of project decisions, product and project specification, main activities (groups of work) according to the project, estimated duration, resources, budget, project risks, sustainability of results) and upload it for peer assessment.

The participants, who, according to the set requirements, have prepared and uploaded the concept of their local development project for peer assessment, continue to work in the workshop as experts. On assessing three project concepts of their colleagues following defined clear criteria, experts write detailed reviews with recommendations on how to improve them. The preliminary trial evaluation of the proposed example of a completed template for the concept of a local development project, which provides the opportunity to get acquainted with the assessment and tutor's reviews, enables participants' confidence in the expert role.

Peer assessment is a significant stage of practical actions for the implementation of acquired knowledge, as expert work not only allows formulating specific valuable tips on finalizing the concepts of colleagues but also seeing opportunities to improve own concept.

The curriculum of the course also provides an opportunity to improve or demonstrate the ability of public presentation of your project concept at the final online conference. Many course participants use this chance to attract the attention of stakeholders to the project and get feedback on their work.

Conclusions

The synergetic effect of two modern knowledge management tools (e-learning and community of practice) confirms the correctness of the choice of learning strategy – affordable and flexible practical learning.

E-learning provides high quality of the learning process, enables a harmonious combination of learning, professional activity, and the daily life of each participant. Studying in the CoP contributes to the correct awareness and deeper understanding of the existing individual and development of collective knowledge, the establishment of dialogue and partnerships, the acquisition and dissemination of best practices, the finding of efficient solutions, and their validation. It allows launching the non-standard, creative, and innovative thinking through the correct setting of tasks and selecting such learning activities that are an impulse for generating ideas. As a result of learning, participants develop competencies, gain experience and get new impressions.

The success of the electronic course in the CoP depends on a number of the following factors:

– the e-course goals meet the expectations of participants and the community as a whole;
– learning activity is the construction of new relevant knowledge and its application, the opportunity to get acquainted with the best practice. The learning tasks correspond to the level of competence of the community as a whole and the ability of each participant of the course;
– the social and cognitive presence of participants, where everyone can engage in a variety of learning activities, and the participation is fairly evaluated; can ask questions and get an answer, express opinions and share own experience; everyone's cognitive presence promotes cooperation, creativity, and generation of ideas;
– demonstration of the competencies acquired as a result of learning, awareness of the level of individual knowledge within the existing and newly created practice.

The electronic course design in the CoP and its content should attract and hold attention to the course, actualize the need for cognition and learning, involvement and interaction, cooperation and co-creation, actions and reflection.

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