

UDC [378.147+37.091.3]:004

Oksana V. Klochko

Doctor of Pedagogical Sciences, Associate Professor,
Associate Professor of the Department of Mathematics and Informatics
Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Vinnytsia, Ukraine
ORCID ID 0000-0002-6505-9455
klochkoob@gmail.com

Viktor M. Nagayev

Doctor of Pedagogical Sciences, Professor, Professor of the Department of Management and Administration
Kharkiv V. V. Dokuchaev National Agrarian University, Kharkiv, Ukraine
ORCID ID 0000-0002-3130-6112
nagaevviktor1966@gmail.com

Vitalii I. Klochko

Doctor of Pedagogical Sciences, Professor, Professor of the Department of Higher Mathematics
Vinnytsia National Technical University, Vinnytsia, Ukraine
ORCID ID 0000-0002-9415-4451
vi.klochko.7@gmail.com

Mykola G. Pradivliannyi

PhD of Pedagogical Sciences,
Associate Professor, Associate Professor of the Department for Foreign Languages
Vinnytsia National Technical University, Vinnytsia, Ukraine
ORCID ID 0000-0002-7473-7377
nickddfs@yahoo.com

Lyubov I. Didukh

PhD of Pedagogical Sciences,
Associate Professor of the Department of Foreign Languages and Translation Studies
Lviv State University of Life Safety, Lviv, Ukraine
ORCID ID 0000-0001-8833-4571
didukhlyuba@gmail.com

COMPUTER ORIENTED SYSTEMS AS A MEANS OF EMPOWERMENT APPROACH IMPLEMENTATION TO TRAINING MANAGERS IN THE ECONOMIC SPHERE

Abstract. At the present stage of the development of information society, the latest educational strategy involves the realization of the person-centered paradigm based on the empowerment approach aimed at ensuring the sustainable development of the personality by inspiring, encouraging, increasing enthusiasm, confidence, realization of the job satisfaction, directed to the achievement of an efficient process of professional training of future managers. During the years of global information system development, the important task of modern education is to form the ability to use the computer oriented management system by the future managers in their professional activities, which favors the process of self-improvement, personal development, self-education, creative development, increase in competitiveness, formation of informational and professional culture. The paper reveals the aims, the content as well as the ways for the realization of the empowerment approach during the professional training of future managers with the use of computer oriented management systems in the process of solving tasks of the network planning. Theoretical and methodological principles of the empowerment approach are the development of adaptability, flexibility, dynamism, creative capacities, ability to take a risk, dedication to problem solving, anticipation of the results of your own activities, responsibility for decision making etc. The suggested technique for overcoming difficulties in teaching the information and dynamic simulation with the use of computer oriented management systems will allow the students to manage the projects in their future professional activities on the basis of the developed plans by creating the network models, determining the logical interconnections and work results necessary for the optimum planning. The experience gained during the training process may be applied in the

future professional activities and will enable future managers to quickly overcome the difficulties and to become successful under the dynamic conditions of information society development.

Reference words: future managers; professional training; person-centered approach; empowerment approach; computer oriented management systems; information and dynamic simulation; network planning.

1. INTRODUCTION

Statement of the problem. Ukraine's entry into the world economic environment is currently taking place under the conditions of the increasing influence of Economics 4.0. formation factors on human activities. The efficient use of the accumulated knowledge, the economy of common use, the digital economy are becoming the most significant for the development processes in all the spheres of the economy. The vector of education therefore should be directed towards the training of professional managers, who, in conditions of rapid transformation of the needs of the society, development of science, development of information and communication technologies must be able to adapt to transformations, act intuitively and creatively, be competitive, improve the level of proficiency in information technologies. Taking these concerns into consideration and assuming possible extent of requirements to growing demand for competent and qualified managers we put much emphasis on further research into the approaches to professional development of a manager.

It is a well-known fact that the information society is characterised by the advanced information system development, which is caused by the fourth industrial revolution [1]. It thus follows that the education of the citizen in the society of knowledge has to be based on the combination of the electronic technologies and the individual technologies which emphasize thinking and develop human creative abilities during the teaching process by mobilizing the «internal personal forces». The entrustable professional activities of the manager become more and more difficult, thus requiring the expertise and systems knowledge, a whole new perspective, which comes down to simulative thinking, which, in turn, is a necessary precondition for the efficient solution of the managing tasks. Mastering the information and dynamic simulation with the use of computer oriented management systems will enable the future managers to make competent management solutions in complex systems of management units, prognosticate their behavior and develop plans and projects. Therefore we propose to teach information and dynamic simulation using the empowerment approach which will ensure the sustainable development of the personality due to additional inspiration, enthusiasm, new possibilities, assertiveness, encouragement, thus allowing to gain the abilities to solve professional tasks in a new way and create innovations.

Analysis of recent research and publications. The latest research, which highlights the framework of empowerment pedagogy, is presented by S. Geno and R. Armando (methods and technologies for self-empowerment in social work) [2], N. Vovk and M. Zhukova (using the pedagogy of empowerment in pupils' project activities) [3], N. Telychko (the role of pedagogical empowerment in formation of principles of pedagogical excellence of future elementary school teachers) [4] and others.

In the model of self empowerment researched by S. Geno and R. Armando, the process develops following such phases [2, p. 24–28]: initiation and establishment of a new wish, building a new positive thinking, transfer from thinking to the possibility to realize the wish, checking a new possibility.

N. Vovk and M. Zhukova [3, c. 40] make it clear that the essence and the content of the empowerment pedagogy is to find learning material that might attract a pupil to specific important activities which would encourage them to be creative and independent. The

algorithm for self-exploration, developed by the scholars on the basis of the empowerment technique [3, c. 42] is of an extreme importance for our research:

1) examination (attracting to activities) – pupil's self-exploration of their own mode of life on the basis of the analysis of the available experience; 2) problem comprehension; 3) generation of information on a problem and ways for its solution; 4) goals setting; 5) formation of intentions and plans of activities; 6) realization of a plan; 7) results verification, evaluation; 8) plans for the future.

N. Telychko emphasizes that, «each student, if desired, is able to obtain the necessary skills to achieve the progressive changes in the future professional activities on the base of motivation to the professional advancement, obtained knowledge, experience in masterful performance of pedagogical functions, readiness to try things out etc.» [4, p. 159]. We fall in with the scholar's idea that the actions of a future specialist have to be axio-acmeologically motivated, directed towards the success in competent performance of the professional tasks, based on self-confidence, responsibility [4, p. 164–165].

The issue of the self-control over the students' educational and creative activities is closely connected to the motivational sphere. Since the cognitive and creative activities belong to the highest spiritual pleasure, the necessity in its satisfying may be considered as a significant internal motive to the development and formation of personality. The cognitive activity, which realizes such needs, always has an emotional coloring which determines the close relations between the students' interest and positive motivation. Technological provision for the process of formation of professional competence of the future specialists on the basis of control and self control over the creative learning activities has been thoroughly researched by V. Nagayev. The scholar proves that the control over the educational and creative activities is a technological process with the purposed pedagogical influence, which means the transfer of the student's available educational potential into the learning result in the form of maturity and development of the professional competence of the future specialist. The educational and creative activity thereby appears to be an object, and students with teachers are subjects under control, able to transform the object. The management process of students' education and creative activities has elements of co-management and self-management in conditions of the wide circle of functional relations with all the components of pedagogical system [5, p. 34–35].

According to the studies of N. Telychko we single out the main stages of empowerment technologies [4, p. 162]: 1) generation of information on the essence of the problem; 2) self identification with the image of a specialist; 3) determination of the limiting factors in problem solving; 4) specification and visualization of the character of a specialist and its approbation in the simulated problem-and-professional situation; 5) generalization of the obtained knowledge and skills after masterful performance of the professional actions; 6) determination of the most efficient ways of supporting the gained experience, which will favor the formation of the personal strength and inspiration in the direction of professional advancement.

Sociologists, in particular D. Kolb and R. Fry prove that acquiring knowledge, receiving guidance, counselling, developing experience in problem solving allow to become more optimistic and confident in solving tasks in the future [6].

Realization of the empowerment approach in teaching future managers the information and dynamic simulation with the use of computer oriented management systems is being fulfilled by us for the first time.

The market for computer oriented management systems presents information systems which ensure the automation of many management functions, their components and management technologies. Table 1 presents the classification of the management systems as for their management functions and their components. Depending on specialization, the

structure of the computer oriented management system may include the components for book accounting, marketing, business projects management, business planning, personnel management etc. Among the world famous companies and corporations on the software market which offer computer oriented management systems are Epicor, Microsoft Corporation, Oracle, Primavera Systems, QAD, Spider Technologies Group, TimeLine Corporation, WST Corporation and others. With the aim of professional teaching of managers we have chosen the software of Microsoft Corporation – Microsoft Project 2016, which is a powerful system for controlling resources and projects portfolios [7]. The system allows a manager to simulate the project portfolios, make strategic planning, schedule, distribute resources, analyze volumes of works, make financial analysis etc.

Table 1

Classification of computer oriented management systems

Management functions, their components and management technologies	Abbreviation IC	Abbreviation expansion
Administration management	AMS	Administrative Management System
Accounting	AIS	Accounting information system
Planning needs in manufacturing resources	MRP II	Manufacturing Resource Planning
Planning needs in material resources	MRP	Material Requirements Planning
Resource planning	ERP	Enterprise Resource Planning (Enterprise-wide Resource Planning)
Resource planning, synchronized with the consumer	CSRP	Customer Synchronized Resource Planning
Decision making	DSS	Decision Support System
Synchronized planning	APS	Advanced Planning and Scheduling
Strategic planning	SEM	Strategic Enterprise Management
Customer Relationship Management	CRM	Customer Relationship Management
Manufacturing management	MES	Manufacturing Execution System
Supply Chain Management	SCM	Supply Chain Management
Business administration	MIS	Management Information System
Service Management	FSM	Factory Service Management

The purpose of the article. The purpose of the research is to disclose the objectives, content and ways for the realization of the empowerment approach to the professional teaching of the information and dynamic simulation with the use of the computer oriented management systems to future managers.

2. THE THEORETICAL BACKGROUNDS

The components of the conception of our research are the three interrelated concepts, which determine its essence and lay the foundation for the solution of the research tasks:

1. *Methodological concept*: combines fundamental principles of philosophy, sociology, psychology, pedagogy, scientific cognition, systems theories; takes into account social, economic regularities of society's development; is based on the modern principles of man's adaptation to the changing conditions of existence; based on philosophical studies and methods, theory of management, theory of information systems; based on scientific approaches: globalization, empowerment, creative, competent, system, synergetic, complex and others. Methodological principles of the research conception imply a complex approach, within which we single out the general scientific (system, synergetic) and specific scientific

approaches – activity-oriented (activity, praxeological), people-centered (humanistic, axiological, student based, empowerment), professionally oriented (acmeological, competency building, job-specification).

2. *Theoretical concept*: realizes the aggregate system of ideas and theories of pedagogy and psychology, in particular, person-centered pedagogy, complex approach, empowerment approach, ensuring the efficient professional teaching future managers the information and dynamic simulation with the use of computer oriented management systems. Theoretical principles of teaching information and dynamic simulation to future managers using computer oriented management systems have to ensure the proper level of vocational training. This training has to combine the knowledge of general as well as special subjects, such as computer oriented management systems, intelligent computer systems, communicational systems, mathematical methods for data processing, information systems in management, monitoring and control over resources etc.

3. *Technological concept* stipulates for the disclosure of the objectives, content and the ways for the realization of methods, based on the empowerment approach to the professional teaching of the information and dynamic simulation with the use of the computer oriented management systems to future managers. The peculiarities of the realization of the approach are based on the fact that the acquisition of professional knowledge and skills stipulates for mastering the information and dynamic simulation on the basis of the individual technologies for brain building and creative abilities in the way of actualization of «internal personal power». This may be achieved by axio-acmeological motivation, motivation to the increase in the level of professional and informational competences and responsibility that occurs when students realise that they are accountable for their academic progress.

The study uses the following research methods: comparative analysis of academic pursuits in psychology, sociology, pedagogy – aimed at determination of the state of the problem under research; synthesis – aimed at generalization of the domestic and foreign experience in the sphere of pedagogy of empowerment, formation of the results obtained; conceptualization – aimed at substantiation of the theoretical background; simulation, theoretical and system analysis in application of the empowerment approach.

Theoretical conception of the empowerment was found by P. Fry, in which the scholar suggested the «release» of those underprivileged by getting an education [8]. The term «empowerment» (motivation, inspiration) is derived from American psychology. D. Rappaport considered the «empowerment» as a process: a mechanism, using which people, organizations and societies acquire mastership in their life, that is, acquire life competences [9]. Technologies of empowerment are used in many spheres, in particular in sociology, psychology, pedagogy, management etc. They favor an achievement of personal changes, ability to manage your own life in the way of actualization of «internal personal force», by applying oneself, uniting the motives, strives, determining the successful types of activities.

3. FINDINGS

Society globalization and information system development in conditions of information overloading, increasing possibilities for human activities favor the appearance of larger quantity of different structures, forms of human activities organization, informational objects, knowledge, other meta-objects etc. The above encourages a future specialist to be able to adapt to new environment with non-standard decision making. In such circumstances the solution of the specialized issues may only be possible due to the efficient vocational training which adopts fundamentally new approaches to teaching.

A professional manager must have suitable characteristics and qualities to be able to successfully perform the responsibilities. They are supposed to have core competencies which

include entrepreneurial (business, development of strategies, creativity, dedication etc.), managerial (leadership, planning, organization, coordination etc.), professional (knowledge in the sphere of management, problem solving skills, communicative etc.), personal (motivation, empathy, flexibility) and other competencies which are of significant importance for a successful manager. The key issue in professional teaching of future managers is the creation of conditions for the formation of the above skills on the basis of learner-centered activity, competence, empowerment approaches, ensuring self-development, self-realization, self-estimation, organization of conditions for achieving goals and success. Empowerment approach to the solution of the above issues turns to be the most efficient one.

Pedagogical system of the empowerment approach is built upon stimulation, provision of incentives, self-motivation, inspiring for actions with the aim to ensure the sustainable development and sustainable mode of life. The main principles of empowerment approach are the formation of conditions in the way of inspiration, provision of psychological comfort on the basis of special training methods (in particular, assistance in developing individual cognitive structures, creating conditions for job satisfaction feeling, ensuring constant positive feedback) to provide the sense of confidence, to show new possibilities, foster self-efficacy, as well as responsibility for the results of the activities.

The founding principle of empowerment sees a student as a creative and active personality with cognitive abilities, tendencies to self-development, self-expression, and self-presentation. In accordance with the ideas of “learning by doing, phased development of intellectual actions” (experience-comprehension-conceptualization-experiment) by D. Kolb, R. Fry [6] and the pedagogy of «empowerment» (motivation–information–information processing–conclusions–application–feedback) by K. Mellander [10] the significant learning results may be obtained by the realization of the following steps:

1) gain practical experience, in particular, in the process of educational and research activities (motivational component: students’ motivation (thematic lectures, specialists experience analysis, activation of learning activities, interactive methods, consulting etc.), students’ self-motivation, psychological readiness, open-mindedness; activity component: implementation of activity-oriented forms of training, mastering information technologies in order to solve tasks);

2) understand the experience, thinking (analysis, synthesis, comparing the results, evaluation) (cognitive and reflective component: independent information processing, learning additional sources, shaping of ideas on specific problems, assessment of the activities, identification of strengths and weaknesses);

3) theoretical generalization of the experience, which may occur independently or during the laboratory or practical classes under teacher’s supervision (cognitive and reflective component: assessment of available knowledge, operational mindset, critical and context thinking, self analysis, personal professional development);

4) experimental examination of knowledge, which may occur independently or under the supervision of a teacher, practical application of special knowledge (activity-oriented and motivational component: activity-value motivation, productive and creative activities, self-control, critical attitude to the results achieved, examination of achievements and failures, motivation to self-education, search for other possible alternative ways of overcoming difficulties, self-improvement).

The above approach was used as a teaching method and as a case study in teaching of the information and dynamic simulation with the use of the computer oriented management systems to future managers. Among the professional competences, which are very important for modern specialists in management there are abilities to manage the projects, to develop project plans, to build and research information models of project performance dynamics, interpret the received data using the built model, make data analysis, make managerial

decisions on the project activities. The above shall be made on the basis of the results from the activities. In this context, the information and dynamic simulation is the general approach to management of economic facilities, which is necessary for the future manager to be able to perform his or her professional activities, related to formalization of data on the object under simulation (phenomenon, process, system), data analysis, research of the object's dynamic (phenomenon, process, system). Learning and comprehension of the simulation principles as a method for system analysis with the use of the computer oriented management systems enables to develop students' logical thinking, creative abilities, context thinking, form special competencies and informational culture, develop research skills. Simulation of the project activities requires the integration of knowledge from different subjects (management, controlling, logistics, accounting etc.) and forms a unique philosophical approach to phenomenon based learning of the environment. The need in the system knowledge appears in the process of complex professional activities, especially in the process of non-routine tasks solution. Such an approach helps reveal challenges, favours tasks setting and solutions.

System outlook of future specialist has to be specified in model thinking which is an aggregate of abilities that ensure the process of model-building situations by singling out factors, significant for their formation, fixing and solution, together with their organization into the hierarchy integrity, which reflects all the sides of management activities [11].

Object-oriented teaching of the information and dynamic simulation with the use of Microsoft Project 2016 on the basis of technology of empowerment pedagogy is done by the realization of the sequence of stages. Pedagogical conditions for the realization of the suggested methodology are:

- 1) motivating future managers to achieve success in professional training;
- 2) combining scientific and pedagogical approaches of empowerment pedagogy with other approaches – axiological, acmeological, creative, competent, activity oriented and other;
- 3) redirecting students' self-study activities towards the integral development of personality, acquiring competences for overcoming difficulties on the way to adaptation to new conditions of activities by activating the «internal personal powers»;
- 4) realizing vocational training of future managers on the basis of scientifically grounded method of teaching information and dynamic simulation with the use of computer oriented management systems.

We suggest implementing the introduction of the above methodology on the basis of the following sequence of actions to be done by students:

1. Receiving information on the problem – motivation to master the ability to solve the above task (the student is asked to fulfil the tasks in accordance with the topic of the lesson; the objectives, the appropriateness of the task, the specific situation in which the similar problem may appear must be clearly specified).

Using network planning methods (placing emphasis on scheduling) the teacher presents core methods of work with information and dynamic simulation of economic systems.

For example, we ask students to perform tasks [12, p. 320–325]: a manager must elaborate the draft of a firm. With a view to define the structure of a project, its main parameters, information connections of the system for project realization, a student is asked to build a network graph of construction activities, calculate the early and the late dates of events, determine a “critical path”. The list of works, their duration and sequence of implementation are presented in Table 2.

After reviewing an algorithm of Fulkerson and Ford, a student builds a network plan for the whole complex of works, calculates the early and the late dates of events, determines a “critical path” (“critical paths” on the network plan are in bold lines) (Figure 1).

Table 2

The list of works

№	Description of the activities	Following works	Duration in weeks (5 working days per week)
1	Construction of roads	2,7	2
2	Ground works preparation	5,6	3
3	Building of aiding constructions	5,6	5
4	Ordering equipment	7	1
5	Building activity	7	5
6	Utility hook-up	8	10
7	Equipment adjusting	8	3
8	Putting into operation	–	1

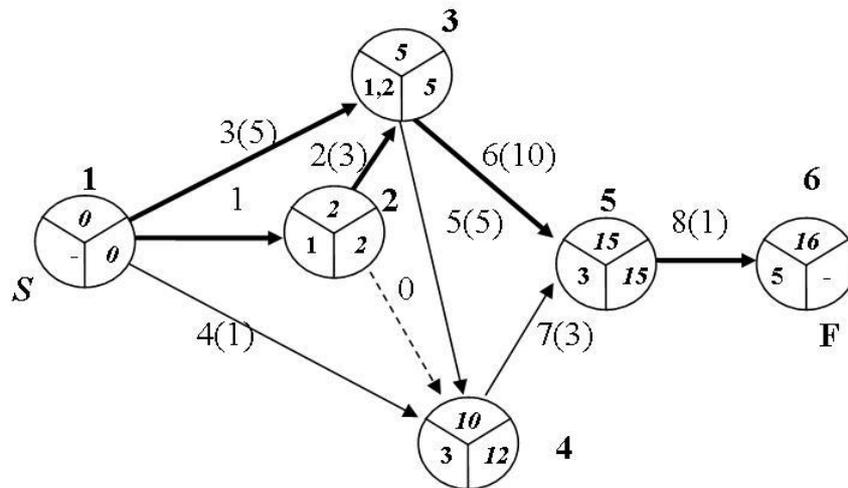


Figure 1. Complex network plan of works

2. Self-identification of a student with a specialist in management means that there is a formation of positive thinking, motivation of the inner potential, work with strong characteristics of the personality, increasing the self-inspiration energy, motivation of the attainment of the objectives by imagining the successful solution of the problem (tasks may be professionally-oriented, problem-based, professional business simulation etc.).

Following the first action a student as a specialist in management is asked to make an analysis of the project. On this stage we suggest that a student make the project in Microsoft Project 2016, using the output information from the first stage (Figure 2). On the basis of the input data the system Microsoft Project 2016 automatically creates an implementation plan (in particular, Gantt's diagram), calculates "critical paths" (Figure 3) etc.

A student may examine the project using Microsoft Project analysis 2016 (Gantt's diagram, graphs, calendar, reports). Since Microsoft Project 2016 automatically forms analytical data, this stage does not create difficulties in problem solving, thus improving the students' motivation to success by formation of positive thinking. Motivation of the inner potential happens through work with the strong characteristics of the personality (attention, insistence, commitment, dedication and others), the energy of self-inspiration increases in the process of options analysis, comparison of alternatives, choosing optimal decision, giving answers to the questions (What is the purpose of project analysis? What goals may be achieved? Why was this variant of solution made? What are the stages of the project? When does the stage of the project take place? What are the other ways for the realization of the stages of a project?).

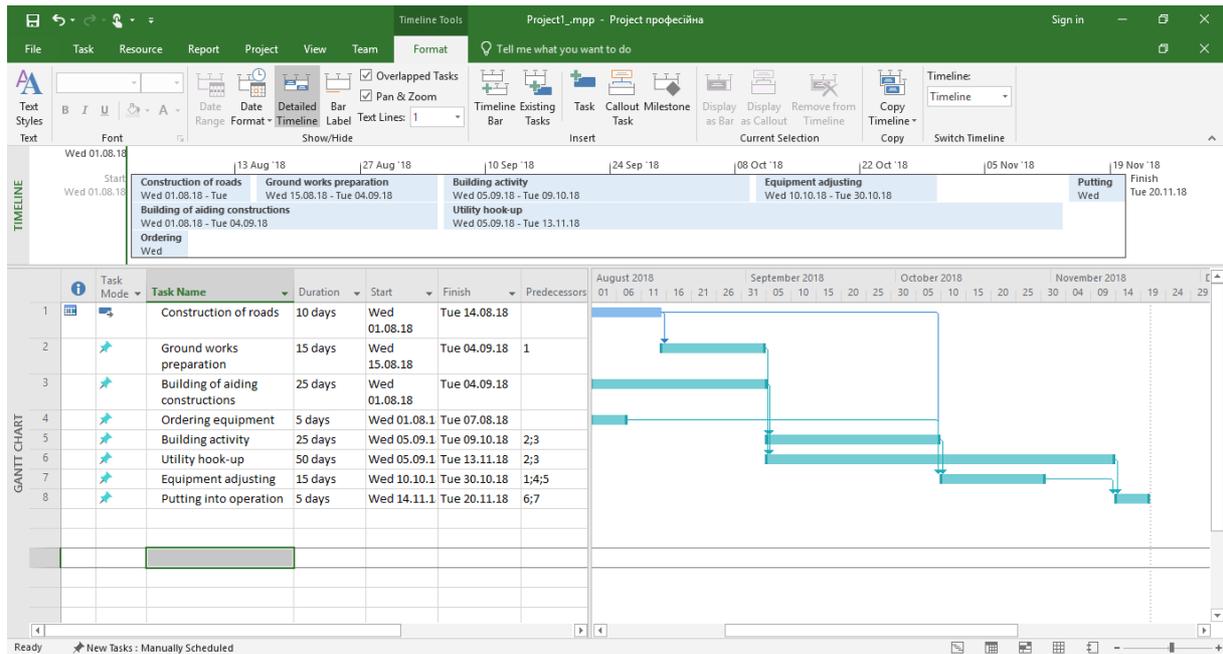


Figure 2. Project in Microsoft Project 2016

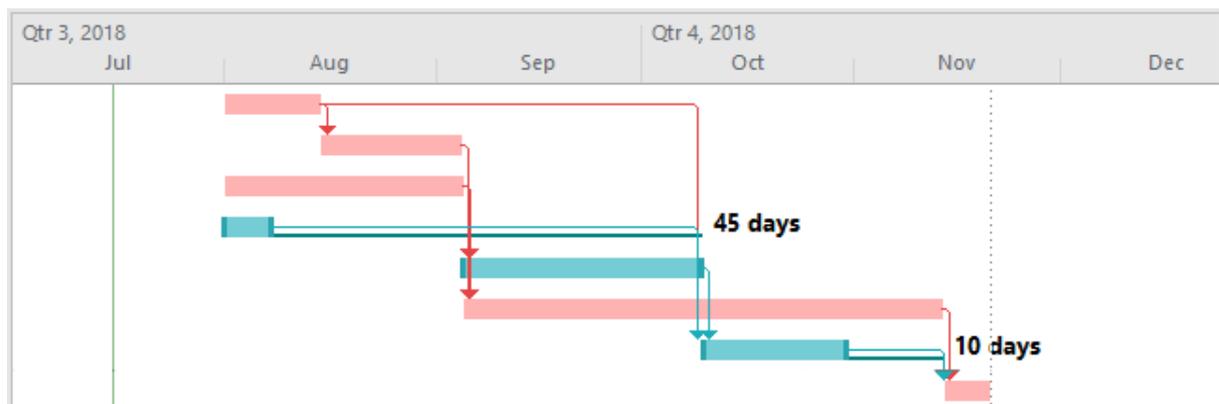


Figure 3. Critical paths in Gantt diagram in the created project

3. Identification of challenges and obstacles for making progress – evaluation of own resources, identification of the necessary external resources, ways for making changes (necessity in mastering additional topics, the main and additional possibilities of computer oriented management systems etc.).

Project analysis may cause some problems. It could be a small number of executors, an increase in the planned expenses, mismatches between the real time of project execution and the planned one etc. In such situations, after identification of the problems, the student has to research them and determine the ways for their solution. This stage may call for additional study of project shortcomings and the ways of their elimination. Sometimes it requires a careful examination of Microsoft Project 2016 functionality which may help change some project parameters, set the project up etc. For example, in case of a small number of executors, there are two variants: the first one – to indicate in the option «appoint resources» more executors, the second – to set the sequential execution of works.

4. Imitational simulation of professional activities and interpersonal interaction in learning are the keystones of success in realization of new restructured possibilities for

actions in specific situations, ways of learning specific knowledge during interactive communication, understanding the advantages, sense of success (solution of tasks, interpersonal communications within the group, consultations etc.).

At the decision point when a student chooses a way to solve a problem they become aware of their own strength and self-confidence. They also experience a success in achieving the results. Decision support may be ensured by information and dynamic simulation using the Microsoft Project 2016 modelling tools for analysis of scenarios, business graphics, writing online reports, consulting assistants and others (Fig. 4, Fig. 5). Full-scope knowledge, necessary for the solution of the tasks, assistance in realization of the student's own learning style, conditions for enthusiasm and job-satisfaction, constant positive feedback – all this becomes possible at this stage due to appropriate and encouraging advice from teachers, communication with other students, scholars, experts in a certain field. Business game may be considered as one more form of learning, which realizes the interpersonal interaction (using methods of brainstorming, creative confrontations etc.). It can be used for multiproject development when students are divided into subgroups and each participant is assigned a separate role such as a project manager, a group coordinator and so on.

CRITICAL TASKS

Name	Start	Finish	% Complete	Remaining Work	Resource Names
Construction of roads	Wed 01.08.18	Tue 14.08.18	0%	0 hrs	
Ground works preparation	Wed 15.08.18	Tue 04.09.18	0%	0 hrs	
Building of aiding constructions	Wed 01.08.18	Tue 04.09.18	0%	0 hrs	
Utility hook-up	Wed 05.09.18	Tue 13.11.18	0%	0 hrs	
Putting into operation	Wed 14.11.18	Tue 20.11.18	0%	0 hrs	

Figure 4. Project critical ways

5. Summarising experience in information and dynamic simulation of professional activities using computer oriented management system allows a student to understand options for actions to be taken, to realise ways and means for addressing new critical issues which is very important for professional growth. Understanding the experience is a critical issue which occurs through completion of previous steps, self-assessment, analysis of the achieved results, and their interpreting.

6. Mastering information and dynamic simulation, using Microsoft Project 2016 for the imitation of the project activities allow a student to be able to determine the most efficient ways for solving problems in project management, develop their own understanding of actions, make independent decisions, gain personal strength and inspiration, enhance motivation to further educational and professional activities, etc. Sustainable development of the personality is ensured by the system of knowledge which helps take actions in specific situations.

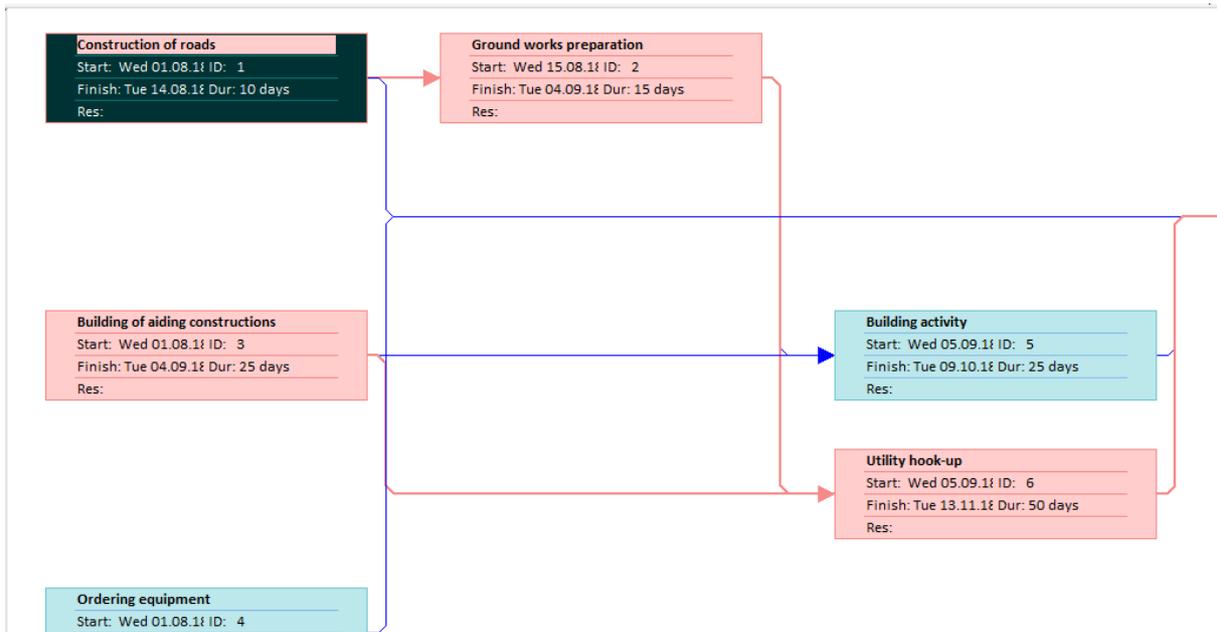


Figure 5. Fragment of project network

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Summarising the results of the research, we formulate the basic principles for the realization of the empowerment approach to the professional teaching of the information and dynamic simulation with the use of the computer oriented management systems to future managers.

The implementation of the empowerment approach is a part of the educational strategy at the current stage of social transformation. It ensures the development towards more sustainable behaviour of the personality through inspiration, increase in enthusiasm, self-possibilities, self-confidence, job satisfaction. This is a successful training strategy and it guarantees an efficient preparation of good managers. The empowerment approach to the professional teaching of the information and dynamic simulation with the use of the computer oriented management systems to future managers ensures the unity of formation of integral, general, special (professional and specific) competencies.

Analysis of the problems related to the implementation of the empowerment approach shows that this issue requires an integrated use of traditional as well as innovative methods, means and forms of training including e-learning mode of training delivery. The use of this method will increase motivation to self-education, self-actualization and self-development with further understanding of complete success in conditions of dynamic information society (knowledge-based society). We also recommend to realize technological approach to ensure the process of formation of professional competence of future specialists.

Teaching future managers information and dynamic simulation within the frameworks of empowerment approach with the use of computer oriented management systems must be done on the principles of adaptability; flexibility; dynamism; development of creative abilities; principles of self-governance; readiness to take risk, be held responsible for the decisions made etc. The implementation of the empowerment approach will help achieve personal changes, develop the abilities to manage student's life by comprehension of the "inner strength of a person", together with motives, strivings, determination of successful kinds of activities.

The results of the study allowed to determine some parameters for further research: development of computer oriented methodological systems of STEM-education; development of the SMART-complexes for academic disciplines; development of methodological systems for specialists' professional training in conditions of digital economy; introduction of an experience of implementation of computer oriented methodological systems within the frameworks of international integration processes in professional education in Ukraine.

REFERENCES (TRANSLATED AND TRANSLITERATED)

- [1] V. Yu. Bykov, "Society of knowledge and education 4.0", *Education for the future facing challenges of the 21-st century*, Bydgoszcz Wydawnictwo Uniwersytetu Kazimierza Wielkiego, pp. 30–45, 2017. (in Ukrainian)
- [2] S. Geno, R. Armando, *Methods and techniques of self-empowerment in social work*, Novosibirsk, Rosija, 2004. [online]. Available at: [www.maksora.ru/uploads/ metod_selfempaurm.doc](http://www.maksora.ru/uploads/metod_selfempaurm.doc). Accessed on: July 9, 2018. (in Russian)
- [3] N. V. Vovk, M. O. Zhukova, "Using empowerment pedagogy in pupils' project activities in shop classes", *Naukovi zapysky TNPU im. V. Hnatiuka, Pedagogika*, pp. 38–45, 2016. [online]. Available at: [http://pedagogica.tnpu.edu.ua/wp-content/uploads/2016/10/ 7.2.16.pdf](http://pedagogica.tnpu.edu.ua/wp-content/uploads/2016/10/7.2.16.pdf). Accessed on: July 9, 2018. (in Ukrainian)
- [4] N. V. Telychko, *Theory and practice of teaching art principles formation for teaching future elementary school teachers: monograph*, Kyiv, Ukraina: Kondor-Vydavnytstvo, 2014. (in Ukrainian)
- [5] V. M. Nagayev, *Methodical principles for controlling students educational and creative activities: monograph*, Kharkiv, Ukraina: Stylna typohrafiia, 2018. (in Ukrainian)
- [6] R. E. Fry, D. A. Kolb, "Experiential learning theory and learning experiences in liberal arts education", *New Directions for Experiential learning*, vol. 6, no 1, pp. 79–92, 1979. (in English)
- [7] *Microsoft Project*. [online]. Available at: <https://products.office.com/uk-UA/project?legRedir=true&CorrelationId=6ba07ab7-601e-4035-9d02-d2f0eca05c48>. Accessed on: June 09, 2018. (in English)
- [8] E. John, P. Freire, *Pedagogue of Liberation*, Malabar, FL, USA: Krieger Publishing Company, 1994. (in English)
- [9] J. Rappaport. "Studies in empowerment: Introduction to the issue", *Prevention in Human Services*, № 3, pp. 1–7, 1984. (in English)
- [10] K. Mellander, *The Power of learning: fostering employee growth*, New York, USA: McGraw-Hill, 1993. (in English)
- [11] K. A. Abul'hanova, N. V. Vasina, L. G. Laptev, V. A. Slastenin, *Philosophy and pedagogy*, Moskva, Rossija: Izdatel'stvo «Sovershenstvo», 1998. (in Russian)
- [12] O. V. Klochko, V. I. Klochko, N. A. Potapova, *Methods of optimisation in economy*, Vinnytsia, Ukraina: Vinnytska hazeta, 2013. (in Ukrainian)

Text of the article was accepted by Editorial Team 17.07.2018 p.

КОМП'ЮТЕРНО ОРІЄНТОВАНІ СИСТЕМИ ЯК ЗАСІБ РЕАЛІЗАЦІЇ ЕМПАУЕРМЕНТНОГО ПІДХОДУ У ПІДГОТОВЦІ МЕНЕДЖЕРІВ ЕКОНОМІЧНОЇ СФЕРИ

Клочко Оксана Віталіївна

доктор педагогічних наук, доцент, доцент кафедри математики та інформатики
Вінницький державний педагогічний університет імені Михайла Коцюбинського, м. Вінниця, Україна
ORCID ID 0000-0002-6505-9455
klochkoob@gmail.com

Нагасв Віктор Михайлович

доктор педагогічних наук, професор, професор кафедри менеджменту і адміністрування
Харківський національний аграрний університет ім. В. В. Докучаєва, м. Харків, Україна
ORCID ID 0000-0002-3130-6112
nagaevvictor1966@gmail.com

Клочко Віталій Іванович

доктор педагогічних наук, професор, професор кафедри вищої математики
Вінницький національний технічний університет, м. Вінниця, Україна
ORCID ID 0000-0002-9415-4451
vi.klochko.7@gmail.com

Прадівлянний Микола Григорійович

кандидат педагогічних наук, доцент, доцент кафедри іноземних мов
Вінницький національний технічний університет, м. Вінниця, Україна
ORCID ID 0000-0002-7473-7377
nickddfs@yahoo.com

Дідух Любов Іванівна

кандидат педагогічних наук, доцент кафедри іноземних мов та перекладознавства
Львівський державний університет безпеки життєдіяльності, м. Львів, Україна
ORCID ID 0000-0001-8833-4571
didukhlyuba@gmail.com

Анотація. На даному етапі розвитку інформаційного суспільства сучасною освітньою стратегією є реалізація особистісно орієнтованої парадигми на основі емпauerментного підходу з метою забезпечення стійкого розвитку особистості шляхом натхнення, наснаження, підвищення ентузіазму, можливостей особистості, впевненості в собі, відчуття задоволення від процесу та результатів власної роботи, спрямованих на забезпечення ефективного процесу професійної підготовки майбутніх менеджерів. На етапі глобальної інформатизації важливим завданням сучасної вищої освіти є формування здатності майбутніх менеджерів до застосування комп'ютерно орієнтованих систем менеджменту у майбутній професійній діяльності, що сприятиме процесу самовдосконалення, самоосвіти, творчого розвитку, підвищенню конкурентоспроможності, формуванню інформаційної культури, професійної культури. У статті розкрито цілі, зміст і шляхи реалізації емпauerментного підходу у професійній підготовці майбутніх менеджерів із використанням комп'ютерно орієнтованих систем менеджменту у процесі розв'язування задач сіткового планування. Теоретико-методичними засадами емпauerментного підходу є розвиток адаптивності, гнучкості, динамічності, креативних здібностей, готовності ризикувати, уміння вирішувати проблеми, передбачати результат власних дій, нести відповідальність за прийняті рішення тощо. Пропонована нами методика навчання інформаційно-динамічному моделюванню на основі емпauerментного підходу з використанням комп'ютерно орієнтованих систем менеджменту надасть змогу студентам у майбутній професійній діяльності здійснювати управління проектами, оптимальне планування шляхом створення сіткових моделей, визначення логічних взаємозв'язків та передбачення результатів. Набутий у процесі навчання досвід здобувач буде застосовувати в майбутній професійній діяльності, що дозволить йому швидко долати перешкоди й бути успішним у динамічних умовах розвитку інформаційного суспільства (суспільства знань).

Ключові слова: майбутні менеджери; професійна підготовка; особистісно орієнтований підхід; емпauerментний підхід; комп'ютерно орієнтовані системи менеджменту; інформаційно-динамічне моделювання; сіткове планування.

**КОМПЬЮТЕРНО ОРИЕНТИРОВАННЫЕ СИСТЕМЫ КАК СРЕДСТВО
РЕАЛИЗАЦИИ ЭМПАУЭРМЕНТНОГО ПОДХОДА В ПОДГОТОВКЕ
МЕНЕДЖЕРОВ ЭКОНОМИЧЕСКОЙ СФЕРЫ**

Клочко Оксана Виталиевна

доктор педагогических наук, доцент, доцент кафедры математики и информатики
Винницкий государственный педагогический университет имени Михаила Коцюбинского,
г. Винница, Украина
ORCID ID 0000-0002-6505-9455
klochkoob@gmail.com

Нагаев Виктор Михайлович

доктор педагогических наук, профессор, профессор кафедры менеджмента и администрирования
Харьковский национальный аграрный университет им. В. В. Докучаева, г. Харьков, Украина
ORCID ID 0000-0002-3130-6112
nagaevviktor1966@gmail.com

Клочко Виталий Иванович

доктор педагогических наук, профессор, профессор кафедры высшей математики
Винницкий национальный технический университет, г. Винница, Украина
ORCID ID 0000-0002-9415-4451
vi.klochko.7@gmail.com

Прадивлянный Николай Григорьевич

кандидат педагогических наук, доцент, доцент кафедры иностранных языков
Винницкий национальный технический университет, г. Винница, Украина
ORCID ID 0000-0002-7473-7377
nickddfs@yahoo.com

Дидух Любовь Ивановна

кандидат педагогических наук, доцент кафедры иностранных языков и переводоведения
Львовский государственный университет безопасности жизнедеятельности, г. Львов, Украина
ORCID ID 0000-0001-8833-4571
didukhlyuba@gmail.com

Аннотация. На данном этапе развития информационного общества актуальной образовательной стратегией является реализация личностно ориентированной парадигмы на основе эмпауэрментного подхода с целью обеспечения устойчивого развития личности путем вдохновения, воодушевления, повышения энтузиазма, возможностей личности, уверенности в себе, чувства удовлетворения от процесса и результатов собственной работы, направленных на обеспечение эффективного процесса профессиональной подготовки будущих менеджеров. На этапе глобальной информатизации важной задачей современного высшего образования является формирование способности будущих менеджеров к применению компьютерно ориентированных систем менеджмента в будущей профессиональной деятельности, что будет способствовать процессу самосовершенствования, самообразования, творческого развития, повышению конкурентоспособности, формированию информационной и профессиональной культуры. В статье раскрыты цели, содержание и пути реализации эмпауэрментного подхода в профессиональной подготовке будущих менеджеров с использованием компьютерно ориентированных систем менеджмента в процессе решения задач сетевого планирования. Теоретико-методическими основами эмпауэрментного подхода являются развитие адаптивности, гибкости, динамичности, креативных способностей, готовности рисковать, умения решать проблемы, предвидеть результат своих действий, быть ответственным за принятые решения. Предлагаемая нами методика преодоления препятствий в обучении информационно-динамическому моделированию с использованием компьютерно ориентированных систем менеджмента, позволит студентам в будущей профессиональной деятельности осуществлять управление проектами на основе разработанных планов путем создания сетевых моделей, определения логических взаимосвязей и результатов работ, которые необходимы для оптимизации планирования. Приобретенный в процессе обучения опыт соискатель сможет применять в будущей профессиональной деятельности, что позволит ему быстро преодолевать препятствия и быть успешным в динамических условиях развития информационного общества (общества знаний).

Ключевые слова: будущие менеджеры; профессиональная подготовка; личностно ориентированный подход; эмпауэрментный подход; компьютерно ориентированные системы менеджмента; информационно-динамическое моделирование; сетевое планирование.



This work is licensed under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.