

THE CONTROLLED FROM DISTANCE TRAINING OF PERSONNELS IS IN SYSTEM NETWORK TECHNOLOGY OF MANAGEMENT OF EDUCATIONAL-CREATIVE ACTIVITY OF STUDENTS

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Problem of organization of the controlled from distance studies in the conditions of epidemic of Covid-19 once again led to the necessity of implementation of elements of digital pedagogics for the system of higher education of Ukraine. Civilization changes stipulate the necessity of preparation of man to new, often fundamentally other technologies. Foremost speech goes about informatization and computerization. Exactly the state of science, education and technologies related to them will define the prospects of further development of education, science and productive sphere in Ukraine (Kremen, 2011).

Information technologies which determined character and essence of XX-th of century SMART-technologies yield today, that open a new progressive way in organization of the controlled from distance form of studies. As registers in the last positions of national strategy of development of education in Ukraine – formation of the future must be based on combination of informatively-digital technologies and individual technologies of development of personality within the limits of general electronic platform (Gry`n`ova, 2010). This technological process must organically connect the controlled from distance studies with the modern elements of digital pedagogics (SMART-educational complexes, informatively-communication technologies, electronic resources and facilities of activation of cognitive activity of students).

The controlled from distance teaching (DT) are an independent form of studies, which uses mainly information technologies which are the leading mean of organization of educational process. DT foresees cooperation of teacher and bread-winners inter se in the distance, that removes all peculiar to the pedagogical process elements (aims, maintenance, methods, organizational forms, facilities of studies) and realized by specific facilities of Internet technologies, which foresee interactiveness (Morze, 2001).

In DT it is possible to distinguish three basic technologies: a 1) case- technology at which teaching-methodical materials are clearly structured and completed in the special set (case), then they are sent to the student for independent studies with periodic consultations of teachers in created for these aims remote (regional) educational focus or points; 2) TV-technology, that teachers have based on the use of televisional lectures with consultations; 3) network technology which is based on the use of network the «Internet», both for providing of students educational and methodical material and for interactive co-operation between a teacher and student (Albegova, 2009; Docenko, 2020).

The controlled from distance studies, at the terms of scientific approach, allow to provide such advantages: 1) to decrease expenses on realization of lessons; 2) to promote the productivity of educational process, bringing over simultaneously to the studies plenty of bread-winners; 3) to promote the level of independence and individualization of studies; 4) to improve quality of educational process due to application of modern hardwares of teaching, electronic informative sources; 5) to modernize the pedagogical system, creating educational SMART-environment after modern principles of digital pedagogics (Bujdina, 2020).

Interesting is experience of Great Britain, where important direction of development of trade education is application of the tutorical system which uses the internet-platform of «Moodle» (Modular Object-Oriented Dynamic Learning Environment) – the module object-oriented dynamic educational environment, giving access to materials of course and offering debatable forums, chats and educational to the web-conference with participation of teachers-tutors (Lushhy`k, 2017).

Scientific researches of authors from introduction of technological bases of pedagogical processes lead to possibility on these principles to work out network technology of the controlled from distance studies with the use of digital contents. This project will allow to create reliable control system by educational-creative activity (ECA) of students in the conditions of the controlled from distance education with the use of corresponding network on-line content in the interactive mode. Separate methodological and methodical bases of this technology are exhausted by us in corresponding monographic researches (Klochko, Nagaev, Klochko, Pradivliannyi, Didukh, 2018; Nagayev, 2012; Nagayev, Nagayeva, 2019).

The purpose of the article consists in the analysis of the existent didactics going near organization of the controlled from distance teaching in the system of the technological providing of pedagogical processes on the basis of development of complex network case of students educational-creative activity frame.

Effective organization of the controlled from distance studies is a thorny pedagogical problem which is interpreted by many factors:

- 1) by an internet environment of transmission and exchange of educational information,
- 2) by the reliable hardwares of studies,
- 3) by a technological case the controlled from distance education frame on the basis of only internet platform,
- 4) digitaling of communication network which must unite all participants of educational process,
- 5) by didactics methods of studies and control of knowledge.

During organization of DT it must be created only informative environment of establishment of higher education, in which automation of basic processes of activity – corresponding Internet-resource is provided for the network contact of on-line in the interactive mode of bread-winners and teachers. The educational systems of different countries use various internet platforms («Unicraft», «Spring of learn», «Webtutor», «Moodle», «Mitapolis Lm» and other), which differ in functional possibilities, terms of organization of on-line studies and availability of their use. Most widespread in educational space is an internet-platform of «Moodle», which is used many establishments of higher education (EHE). Today separate educational establishments perfect this electronic resource, forming more perfect models. However, in our view, a problem consists in absence of only internet platform at level department of education and science of Ukraine, which must provide all EHE only informative educational standards. Materials of such internet platform create corresponding educational SMART-environment, which can serve as simultaneously the informative and instrumental base of organization of the controlled from distance studies (lessons are designed on the basis of materials of informative forums, questioning, annotated Refs.s, methodical developments and methods in relation to a concrete lesson). Educational SMART-environment of network management of ECA of students in the system of the controlled from distance studies must contain the block of electronic educational and methodical complex (Klochko, Nagayev, Kovalenko, Fedorets, 2020).

It is important to build the effective didactics system of organization of management of students educational-creative activity on the basis of technologizing of pedagogical processes. For this purpose it is necessary considerably to promote the level of the methodical providing, informatization and digitalization of all elements of the pedagogical system. This direction needs corresponding pedagogical planning of educational resources after the controlled from distance form in the conditions of management of students educational-creative activity.

One of major tasks to realization of this pedagogical problem there is forming for bread-winners and teachers of skills of work in SMART-environment at the terms of remote access, and also achievement enough high level of independence and individualization of educational-creative activity of bread-winners. Thus the measure of self-government of educational activity of students is closely related to plenitude of grant of data a teacher about maintenance, structure, technology and facilities of studies and control. Taking into account our experience, it is necessary to project interactive network pedagogical technology which would realize administrative conception of organization of the controlled from distance studies on three-level basis: a 1 level – management of ECA of students in the system «teacher-bread-winner»; 2 levels – are a management of ECA of students in the system «bread-winner-

bread-winner»; 3 levels – are a network management of ECA of students in the system «educational SMART is a complex-bread-winner». Thus the pedagogical model of organization of DT will be realized in systems: direct management, mutual management and self-management of students educational-creative activity. Basic directions of decision of this problem lie inplane modernization of the pedagogical system EHE and planning of such theoretical, methodical, informative, administrative, technical and technological measures :

1- planning and organization of educational network SMART-environment on the basis of only Internetresource for the network contact of on-line;

2-creation of network electronic base of informative resources (on the basis of electronic repository of library funds);

3-forming of the electronic controlled from distance educational complexes (DEC) on the basis of electronic textbooks, train aids, recommendations in relation to independent work of students in the network system;

4-creation of diagnostic SMART-complexes on the basis of planning of electronic base of the controlled from distance control (electronic magazines of attendances of lessons, account of independent and individual work, test control of knowledge (current, intermediate, result);

5-development of normatively-legal base of organization of the controlled from distance studies is in the conditions of digitaling of pedagogical processes.

Each of the noted directions needs system and purposeful researches. On the example of educational process of KNTUA named after Petro Vasylenko and KNAU named after V.V. Dokuchayev will analyse marketability of digital educational content of organization of the controlled from distance studies in the conditions of network pedagogical technology of management of students educational-creative activity in 2016-2020. Basis of technology is a corresponding electronic shell of Internetresource for the network contact of teachers and students in the interactive mode. For this purpose universities use the internet-platform of «Moodle» and «Google Meet», as an electronic shell of realization of pedagogical processes. The general model of this model can be presented on Figure 1.

The important link of organization of DT is a telecommunication environment which includes : informatively-digital, educational, methodical and didactics contents (means of intercourse and navigation, teaching and control of knowledge in the mode of on-line). The use of telecommunications in DT enables realization of untraditional pedagogical approaches and forms of studies, which are built after the individually oriented model.

The substantial technological aspect of the controlled from distance preparation of future specialists is development of technological map («Syllabus» is an eng) of the controlled from distance educational courses, which show by itself technological map-sight of independent study of discipline and allow bread-winners to plan personality strategy of self-management teaching on the basis of principles of autodidactics (Nagayev, 2012).

For realization of effective control system of ECA it is needed to provide the high level of decentralization of pedagogical influence, create such structure of didactics process, at which students will have the opportunity to complement an informative subsystem the elements of self-planning, self-organization, self-motivation and self-control accordingly tasks of professional preparation. Organizational elements of network case of ECA of students frame are:

1) organization of work of teacher from development and introduction of pedagogical technology;

2) mutual management with the purpose of adjusting of effective interactive communication in the systems: "teacher-student" and "student-student";

3) self-management of ECA of students are during independent and individual work;

4) controls and self-control of educational results.

On the experimental stage of research an expert way criterion indexes which represent the capacity of bread-winners for self-government of ECA in the conditions of the controlled from distance studies after a personality-developing component were certain. Such criterion indexes of quality of preparation of future specialists were: success, levels of independence and individualization of educational activity, explained and creative activity of students. The level of independent and individual work of students was determined by the coefficients of independence (CS) and individualization (CI).

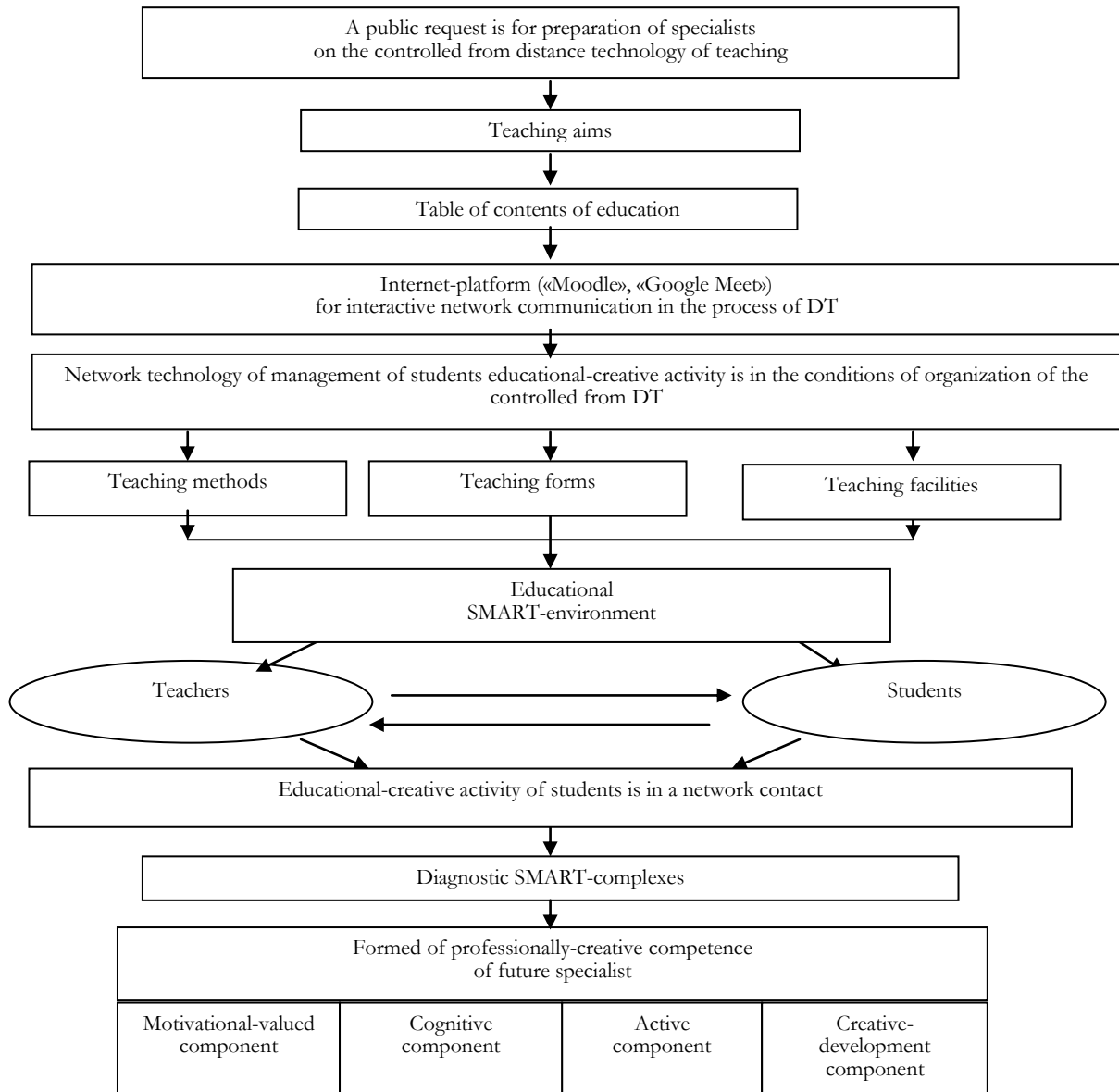


Figure 1. A model of organization of the controlled from distance teaching is in the conditions of network technology of management of students educational-creative activity

Level of independence (coefficient of independence) – characterizes possibility of future specialist to undertake responsibility, independently to execute educational tasks and accept independent decisions:

$$CS_{eca} = \frac{K_{sf}}{K_{sp}}, \quad (1)$$

where: K_{sf} – is an amount of the actually executed independently educational-creative tasks; K_{sp} – is an amount of independent tasks on the program of course.

Level of individualization (coefficient of individualization) – it is determined by possibility of students to execute individual educational projects which take into account the specific of professional activity of future specialists :

$$CI_{eca} = \frac{K_{if}}{K_{ip}}, \quad (2)$$

where: K_{if} – is an amount of the actually offered and executed individual creative projects; K_{ip} – is a maximally-possible amount of individual creative tasks (on the program of course).

The motivation of students to the controlled from distance studies on pedagogical technology of network management of ECA was determined by the coefficient of motivation (CM), as correlation of level of positive reasons of bread-winners (aims, interests, internal motives) to the general level of positive and negative motives of bread-winners in relation to the offered model of studies :

$$CM = \frac{M_p}{M_p + M_n} , \quad (3)$$

where: M_p – is positive reasons of students; M_n – is negative reasons of students.

Creative activity of students was estimated by the coefficient of creative activity (CCA), which is determined by an amount and maintenance of acts of positive activity of student on results current control (participating in scientific conferences and seminars, preparation of the educational-experienced tasks, implementation of creative projects and others like that) as relation of amount of him individual acts of creative activity to the greatest level of creative actions in an academic group :

$$CCA = \frac{CA_f}{CA_{max}} , \quad (4)$$

where: CA_f – is actual creative activity of student; CA_{max} – is creative activity of student after maximal criteria.

Will trace efficiency of introduction of methods of network management of ECA of students (table 1).

Table 1. Analysis of efficiency of introduction of network technology of management of students educational-creative activity in the conditions of organization of the distance teaching, 2016-2020

Educational disciplines (educationally-qualifying level)	Middle success is on a 100-ball scale		Coefficient of independence (CS)		Coefficient of individualization (CI)		Coefficient of motivation (CM)		Coefficient of creative activity (CCA)	
	MECA	TST	MECA	TST	MECA	TST	MECA	TST	MECA	TST
"Management" (bachelor)	89,4	79,7	0,78	0,65	0,74	0,58	0,77	0,67	0,74	0,56
"Finance" (bachelor)	91,0	82,2	0,76	0,63	0,72	0,56	0,72	0,61	0,78	0,61
"Management a personnel" (bachelor)	89,0	78,0	0,81	0,64	0,76	0,55	0,80	0,66	0,74	0,59
"Insurance management" (master's degree)	88,8	80,6	0,75	0,61	0,69	0,53	0,76	0,62	0,82	0,66
"Conflictologist" (master's degree)	92,6	84,0	0,69	0,56	0,66	0,51	0,78	0,68	0,84	0,62
"Public administration" (master's degree)	86,4	77,8	0,73	0,60	0,68	0,54	0,81	0,75	0,72	0,54
"Management psychology" (master's degree)	91,8	82,4	0,71	0,58	0,67	0,52	0,78	0,64	0,76	0,51
On the average	89,86	80,67	0,74	0,61	0,70	0,54	0,77	0,66	0,77	0,58
Efficiency of introduction of development, %	11,4		21,3		29,6		16,6		32,7	
	22,32									

As evidently from the analysis of quantitative indexes, the mid-coefficient of independence on network technology of management of ECA (CS) laid down 0,74, that on 21,3 % exceeds an analogical index on the traditional methods of teaching (0,61). The mean value of coefficient of individualization

(CI) also increased substantially – from 0,54 to 0,7 (29,6 %). Thus the coefficient of motivation increased on there is an increase of creative activity of students 16,6 %. Especially noticeable on network technology of management of ECA of students (32,7 %), that it is constrained, in our view, first of all with organization of creative educational environment. As practice of introduction of this methodical development led to, the level of creative activity of students considerably depends on possibility of bread-winners independently to elect individual organizational forms and methods of studies (preparation of the individual educational-experienced tasks, testing, stowage of thematic cross-words, decision of situational tasks, design of professional situations and others like that). Thus the level of creative activity of students substantially influences on forming to the component of creative self-development in the structure of professional competence of future specialists.

A high-quality analysis the got results proves that for the students of experimental groups at the level of formed personality-developing to the component of professional competence skills of self-development prevail. Estimating creative and professional qualities, teachers witnessed considerably more wide range of their development for the students of experimental groups. For example, a plan activity of students of experimental groups was characterized by abilities to develop and correct individual strategy of self-management of ECA accordingly the attained level of educational result. Thus the students of control groups, mostly, were limited to only the choice of purpose of individual task and direction of her realization. After the numerous questioning of bread-winners, marked more than 77 % polled about a desire to study on this technology, if there was possibility of choice.

The substantial aspect of organization of the controlled from distance studies is introduction in the educational environment of administrative conceptions and informatively-digital technologies. Basic to organization of DT there must be an informative environment of establishment of higher education for network connection in the interactive mode of students and teachers. For realization of this pedagogical problem it is necessary to provide the construction of only electronic resource of DT on the basis of technologization and digitalization of pedagogical processes.

The results of pedagogical researches proved that realization of network technology of management of ECA in the system of the controlled from distance studies allowed considerably to activate cognitive-creative activity of students, deepen the level of independence and individualization of studies, promote a level them internal motivation, that in a result is determined by the high level of formed of professional competence of future specialists. It follows to consider formed of autodidactics functions of students – motivation, planning, self-organization, self-control, self-examination which is the result of high level of decentralization of pedagogical influence the important conclusion of experiment.

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