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Cluster Model of Formation Multidimensional Information Competence of Student

Key words: *multidimensionality, information competence, cluster model, orientations of educational process.*

Annotation: *In this article the information competence formation as a result of student professional training in high educational institutions is researched. Cognitive, technical and technological, personal, communicative and reflexive components are distinguished as parts of multidimensional information competence. Cluster model of multidimensional information competence forming includes clusters of competences and didactic modules.*

In modern conditions of economy globalization, informatization of society, production computerization the knowledge and information are the most demanded resources. Knowledge of information and communicative technologies is an important part of any specialist competence in any sphere. Information competence is a multidimensional result of student professional training in high educational institution (5).

Theoretical and methodological basis of student information competence formation process design is competence, personal focused and functional and activity approaches (4). The design of information training directed to form student information competence will be done according to the principles of multidimensionality, modularity (2), professional orientation and congruence.

There are the following components in multidimensional information competence: cognitive (Cg), technical and technological (Тт), personal (Pr), communicative (Cm), reflexive (Rf) (3). We will characterize each information competence component through the certain competences:

Cognitive component: Cg_1 – knowledge of basic methods, techniques and means of receiving, storage and processing of information; Cg_2 – knowledge of information structure and common properties; Cg_3 – knowledge of internal structure and computer functioning basic principles; Cg_4 – ability to work with information in global computer networks.

Personal component: Pr_1 – understanding of information essence and value in information society development, information security basic requirements; Pr_2 – ability to realize social importance of future profession, readiness for professional activity; Pr_3 – ability to adapt in constantly changing conditions of modern information society.

Technical and technological component: $Тт_1$ – understanding of functionality principles, abilities and limitations of technical devises intended for the automated information search and processing; $Тт_2$ – skills of work with a computer as an information control facility; $Тт_3$ – ability to use application software solving professional activity practical problems; $Тт_4$ –ability to generalization, information analysis, and also identification, creation and forecasting of information streams processing possible stages.

Communicative component: Cm_1 – ability to speak and write logically, reasoned and clear; Cm_2 – knowledge, understanding and use of formal languages and other types of sign systems, technical means in information transfer process; Cm_3 – ability to work in small groups.

Reflexive component: Rf_1 – ability to self-development, increase of the professional qualification; Rf_2 – ability to carry out experiments according to given methods, to process and analyze the results, to describe realization of scientific researches, to prepare data for drawing up scientific reviews and publications; Rf_3 – ability for generalization and comparison of different information sources for solving specific educational or professional task.

As information competence is a multidimensional result of professional education, it includes cognitive, technical and technological, personal, communicative, reflexive components and it's characterized by operating of different nature information, both individual and professional.

Within functional and activity approach we carried out cluster structuring of competences, characterizing components of information competence. Different student activities in educational process reflect in clusters. Educational process, directed to form student information competence, is based on the modular principle and connected to design of theoretical, organizational and applied, reflexive and research, humanitarian and communicative modules (1). Cluster model of multidimensional information competence forming, including competence clusters and didactic modules, is presented in figure 1.

We will designate purposes of didactic modules.

Theoretical module is directed to form basic informatics concepts (knowledge of basic methods, techniques and means of information receiving, storage and processing; hardware and software, needed in educational process and further professional activity).

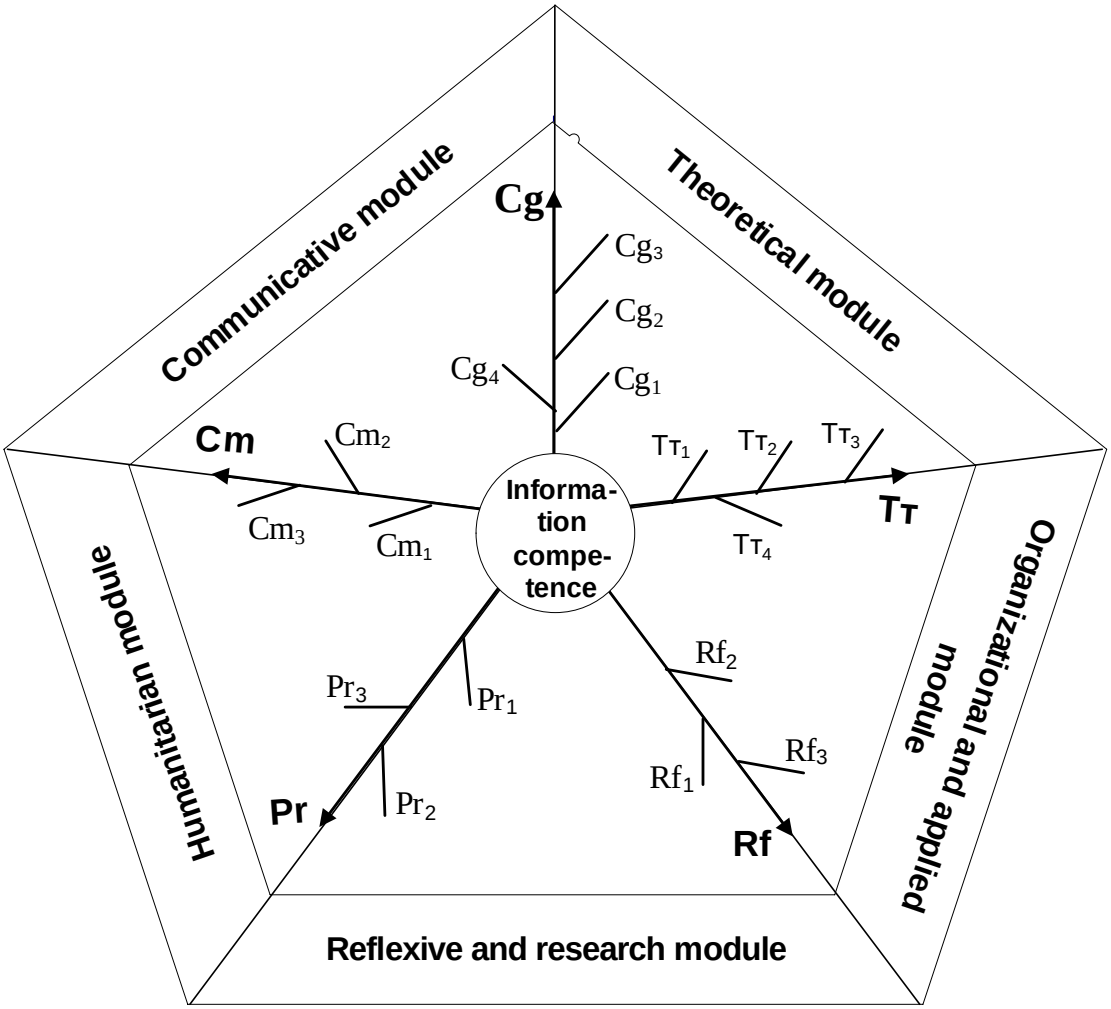

Figure 1 - Cluster model of multidimensional information competence forming

Organizational and applied module includes: 1) development of ability to generalization, analysis, comparison and processing of information streams; 2) application of new gained and available knowledge for the solution of educational and professional tasks.

Reflexive and research module includes students' understanding of informatics role in modern society and production; the social importance of the future profession through motivation to creativity, self-development and increase of motivation to performance of the professional focused activity.

Humanitarian module is focused on development of information literacy and ability to adapt to constantly changing conditions of modern information society.

Communicative module is directed to form the ability to navigate in the inner, outside and virtual world through knowledge, understanding and application of formal languages and other types of sign systems, technical means in the course of information transfer.

The implementation of modular principle and the cluster approach to the structuring of competences in the design of a multidimensional model of information competence formation allows allocating cognitive, professional, creative and research, socio-humanistic,

information and communicative focus of the educational process which need to be considered in the development of methodological and technological educational process support.

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