Formation of social and information competence of adolescents by means of case technology

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Abstract. Preconditions of the presented research are the modern concepts of digital competences. Success of a modern person mainly depends on how well he is familiar with the skills of digital technologies. Significant influence of digital technologies on everyday life is obvious in education sphere. Continuous life-long-learning, interactive studies and textbooks, access to investigations and learning materials are the peculiar features of 21st century students. In this regard, the analysis of social and information competence is an important demand of modern society. Despite the fact that nearly each family at present has a computer, the use of Internet by children raises fears of parents and teachers. This can be explained as follows: Internet can be used for games and not for learning; in addition, an adolescent may be a victim of cyberbullying. This work is aimed at verification of the hypothesis that formation of social and information competence of adolescents is a predictor of socially efficient behavior in virtual environment. The obtained results demonstrated positive variation of the considered indicators. Despite the fact that more precise conclusion should be based on more expanded samplings, in general, the hypothesis of opportunities of this trend has been partially verified.

Keywords: social and information competence, digital technology, case technology, adolescents.

1 Introduction

In foreign and Russian concept, authors apply all possible theoretical structures for analysis of the term: social and information competence. The DeSeCo project implies wide range of various tools to form basic competences required for each person, including information one [1]. Hatlevik and Christophersen believe that the information competence is comprised of such skills as digital literacy, media literacy, browsing skills and others [2].

However, the authors underline that the notions of information competence, digital competence and digital literacy involve some contradictions in definitions, related mainly with varieties of social contexts. The emergence of social media changed the information and communication environment. Thus, the social and information competence cannot be

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restricted only by skills of computer literacy [3]. Some researchers in the field of digital technologies consider the social and information competence from several points of view. In the concept by E. Lossan, the focus is placed on skills and ability to work with information as well as on opportunity of self-expression in Internet [4]. The skills to use computer as a necessary aid for education or professional tasks is included in the structure of digital competence by Liisa Ilomäki [5]. F. Pettersson analyzes the studies of digital technologies for the recent decade arriving at conclusion that the digital competence cannot be considered as a separate phenomenon at the level of partial subjects [6].

According to the definition of European Commission, the digital competence of a modern person is based on digital literacy, communication and safety. Researchers from Finland supplement the concept of digital literacy with social practices of creativity literacy of students [7]. While considering competences of information technology, I.A. Zimnyaya implies reception, processing, presenting of information as well as its conversion (reading, making abstracts), mass media, multimedia technologies, computer literacy, expertise in e-technology and Internet [8].

In federal state education standards of basic education, the information and communication technologies include search, arrangement, transfer of data, presentation of projects, information security [9]. A.V. Khutorskoy developed a set of competences for students of basic education allowing to achieve the best results in mastering programs. The author believes that the skills in distance communication and information technologies make the basis of social and information competence of students [10].

G.U. Soldatova developed a model of social and information competence based on knowledge, skills, responsibility, and motivation. These components are implemented in the spheres of communication, content of consumption and technosphere [11]. Social and information competence, according to A.V. Bogdanova, is knowledge of methods, features of data search for their subsequent transfer, storage and exchange [12]. A.L. Tretyakov defines the information competence as a skill to process and to classify information orienting in general information flow [13]. T.A. Boronenko defines the digital literacy as ability to apply variety of digital instrumentation, to work creatively in technological environment [14]. According to I.V. Zabrodina, N.A. Kozlova, S.N. Fortygina, the social and information competence is considered as formed if a student can solve problems emerging during the use of digital technologies or communication tools [15]. F.D. Rasskazov, Ye.V. Mityushchenko define the information competence as integrated functional property of a person, which includes knowledge and skills required for efficient information activity during communication [16]. According to P.V. Bespalov, the information competence is a property of person, which implies motivation to mastering knowledge and ability to solve problems in learning and professional activities using computer aids and computer thinking [17]. According to D.V. Gulyakin, the social and information competence is an ability to apply information and communication technologies in professional activities, to create own content with further deployment in information environment [18].

While analyzing the notion of social and information competence, it is possible to conclude that the terms are formed on the basis of selected trend and required level of the notion scope. The authors in general consider the social and information competence as experience in information and communication technologies, combination of skills to search and to analyze information, to use the information for solution of educational and professional objectives. This study is based on definition of social and information competence as a combination of social competences important for certain sphere, manifested as relatively stable clusters in situations of social interaction involving computer aids.

We include into the structure of social and information competence the following: media literacy, communication skills, creativity. The hypothesis of the research is the assumption that the skills of social and information competence formed in juvenile age would help students to use modern digital technologies.

2 Methods

The independent variable in the study was the experimental program, Network Competence, developed to form social and information competence of adolescents. The essence of the program is that it reflects the main situations of social interaction involving computer aids, as well as a set of basic social and information competences, using which the adolescents could spend beneficially their time in Internet. The basic competences are as follows: communication skills, competences of media literacy (ability to work with information and to analyze it critically), creativity. Practical section of the program is comprised of case assignments forming basic competences.

The tested persons were offered to solve the case problem "Advertising Agency". The main task of the case was in selection of the most optimum solution to sell smartphones. The participants analyzed and discussed each of the four offered variants, selecting the best one. The game had distinct time structure, it included all major stages of the case technology: preparatory, introductory, case execution, reflexive.

The dependent variable, the level of communication skills, was estimated by the indicators based on the following diagnostic methods: test of communication and organization abilities by V.V. Sinyavsky and V.A. Fedoroshin [19], a set of Williams creativity tests adapted by E. Tunik [20], evaluation of level of critical thinking of students by Yu.F. Gushchin and N.V. Smirnova [21]. The case assignment was carried out under the conditions of restricted time, it was required to demonstrate basic communication skills (to substantiate own point of view, ability to listen to position of another person), creativity, skill of critical analysis of information.

58 students were tested in the research:

- experimental group: 30;
- reference group: 28.

3 Results and discussion

The experiments were carried out during two months. The obtained results are summarized in Table 1 and Figure 1.

Table 1. Average level of social and information competence

Group	Average indicators		
	Evaluation of development level of critical thinking of students	**Evaluation toolkit**	**ModifiedWilliams creativity tests**
Reference 1	52.4%	62.2%	59.8%
Reference 2	53%	62.8%	60%
Experimental 1	54.1%	63.5%	64.7%
Experimental 2	65%	69.8%	70.1%

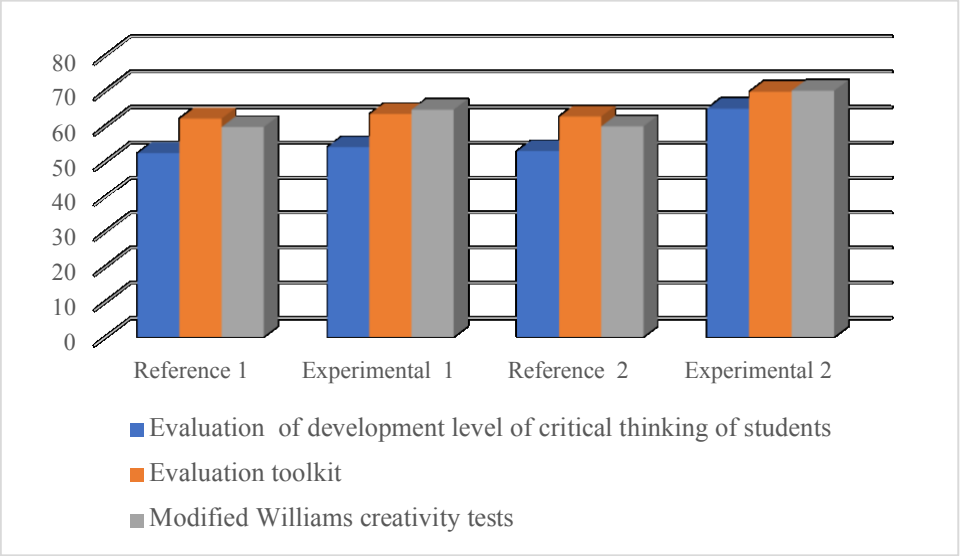

Fig. 1. Average level of social and information competence.

It can be seen that despite the fact that some indicators did not demonstrate significant changes (creativity abilities), the other indicators were characterized by positive dynamics. It was a pilot experiment and significant changes could not be expected in several months of studies. However, all indicators demonstrated changes by 5-10%. In order to obtain meaningful results, we will continue the experiment with more expanded sampling and longer time intervals.

4 Conclusion

Development of skills forming high competence in the existing digital society is necessary for a modern person. The experimental results make it possible to conclude that the initial hypothesis formulated in this work was confirmed. Social and information competence can be formed in students aged 13–15 years. Network Competence program allows providing positive dynamics in formation of social and information competence in adolescents.

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