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Student's Media Competence: New Opportunities to Counteract Information Manipulations In Network Interactions

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Abstract

The purpose of the study was to assess the media competence of students, to determine the possibilities and limitations for its formation in the context of the intensification of digital network interactions. The focus of the study is on studying the skills of students in terms of assessing the reliability of information sources, the adequacy and completeness of information, as a tool to counter information manipulations. The key research method was a questionnaire survey of students (N = 148). A low level of formation of media competence of students in terms of skills for assessing the reliability of an information source has been established, which becomes a factor in the vulnerability of students in the context of the spread of disinformation. Established the presence of dysfunctions that impede the formation of media competence: a test system for assessing knowledge, the absence of special tasks aimed at developing the skills of searching, evaluating using information. The functional weakness of higher education in terms of the formation of ethical principles of digital interaction of students has been established. The conclusion is made about the demand for a reflective pedagogical method, collective discussion of media texts, work on media platforms.

Keywords: media competence, student, higher education, information manipulation, trust, network interactions.

1. Introduction

The learning process in the digital age is associated with the need to form new competencies (Castañeda et al., 2021), which provide the ability to select, analyze and interpret data in the context of intensified information flows (Frolova, Rogach, 2021: 616-625; Kačinová, 2019; Vinichenko et al., 2020; Vrabec, Bôtošová, 2020). This is especially evident against the background of the growing confluence of online and social practices of young people, as digital literacy in social networks is becoming a key resource in everyday life (Festl, 2021: 249-271; Al-Msie'deen et al., 2021: 104-118). Digital resources and digital media today are an important part of a person's professional and personal life (Gudmundsdottir, Hatlevik 2018: 214-231; Vinichenko et al., 2021: 561-570), which actualizes the research interest in the formation of students' media competence in the context of digital networking. This conclusion is also confirmed in another study: it was found that media competence as a quality of life is becoming an essential condition for successful functioning in modern society (Lozovitskaya et al., 2021: 664-674). In the context of the spread of disinformation, "fake" news, and the growing popularity of conspiracy theories (Borkhsenius, 2021), the field of digital network interactions between the authorities and the population can ensure the timely filling of the information vacuum (Ilyinova, 2020: 132-137).

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The results of international studies show that the ability to use information technologies, a sense of responsibility in the digital space can be factors in the formation of media competence in the context of digital networking (Zhu et al., 2021: 1425-1449). According to L.V. Alekseeva, the media environment and the dominance of digital content reduces the critical thinking skills of young people (Alekseeva, 2021: 189-200). Based on this conclusion, the authors conclude that it is necessary to work purposefully in the system of higher education to form students' media competence. In this context, the proposals of A. Levitskaya and A. Fedorov on the development of media competence of young people in the context of increasing media manipulative influences deserve special attention: involving students in regular media education activities, developing systematic awareness in the field of media and media education (Levitskaya, Fedorov 2021: 129-145). Complementing this point of view, some researchers conclude that digital networking has an impact on digital non-formal learning experiences (He et al., 2021: 1406-1416).

Noteworthy is the conclusion made by other scholars, that the extent to which learners can maximize the potential benefits of information from the online world depends largely on developing a set of skills that will make them effective users and decision makers (Atoy et al., 2020: 1015-1027). This conclusion can be supplemented by the results of a study conducted earlier by Y. Noh. In particular, the scientist emphasizes the role of skills such as: the ability to process information, recognize information, edit it, analyze digital network communities, and use cyberculture formation tools (Noh, 2017: 26-56).

2. Materials and methods

The purpose of the study was to assess the media competence of students, to determine the possibilities and limitations of the higher education system for its formation in the context of the intensification of digital network interactions. The authors focus on studying the skills of students in the process of assessing the reliability, adequacy and completeness of information as a tool to counter "fake" news, information manipulation in digital network interactions. The authors set the following tasks:

- assessment of the frequency of references to different sources of information, including trust in information received in the course of digital network interaction;
- analysis of the skills of student youth in assessing the information source, resources and limitations of their formation in the modern system of higher education;
- identification of socially approved aspects of communications on the Internet.

The article used a set of general scientific research methods (generalization, systematization, etc.), as well as empirical methods. The key research method was a questionnaire survey of students, a pilot study was conducted (N=148). The link to the survey was posted on the Google platform (https://docs.google.com/forms/d/e/1FAIpQLSesRd__qlZZ-xrLesZvby-2gbF3fl5Buh-Yu3iR4fPRLDjv5w/viewform?usp=sf_link). The respondents were recruited through social networks. The spontaneous nature of the sample, as well as the number of respondents, can be considered as limitations of the study. However, the data obtained made it possible to test the hypotheses put forward, to form conclusions and directions for further research.

The hypothesis of the study was the following assumption: in modern conditions, students do not have enough competence in assessing the source of information in terms of such criteria as its adequacy, completeness and reliability. During the study, additional hypotheses were put forward:

1. Official channels of information, like the press and television, are losing their popularity among students. Young people show a higher level of trust in digital channels of network interaction.
2. Such dysfunctions of the education system as a test system and the lack of an individual approach hinder the formation of media competence of a person in the modern education system.
3. Modern pedagogical practices do not fully contribute to the formation of skills for evaluating information sources.

3. Discussion

Modern global challenges orient the Russian education system towards the development of such student skills when working with the media as assessing the reliability of an information source. Other Russian studies also confirm a decrease in youth interest in such sources of information as television, the media, with the dominance of orientations towards social networks and digital communities (Vetrova et al., 2019: 370-377). In particular, some scientists note the

rapid integration of digital networks into personal and public environments, this process focuses the higher education system on developing the media competence of young people to improve the quality of interaction in digital networked communities (Zhu et al., 2020: 1935-1955).

A number of scientists note such destructive tendencies as the manipulation of public opinion (Kim, Read, 2021), the increasing influence of social networks on the behavioral patterns of young people (Goodyear et al., 2022). Of interest is the position of Y. Ma and X. Qin, who believe that social media use has been a negative predictor of student literacy across countries (Ma, Qin, 2022).

In conditions where young people find it difficult to complicate the reliability of the source of information, the risk of spreading fake news increases. The authors share the conclusion made by Schwarzenegger C.: "an alleged distrust in legacy media... (initiates) post truth-era-narrative». According to the scientist, the following skills can resist these trends: "(1) selective criticality, (2) pragmatic trust, and (3) competence-confidence were developed to analyze users' media and news navigation" (Schwarzenegger, 2020: 361-377).

The authors of the study ask themselves the question: is the modern system of higher education in Russia capable of forming an adequate response to new challenges, is it capable of providing the conditions for the formation of a student's media competence? The results of the study showed that every third student (29.1 %) answers negatively to this question. The results of other studies confirm that the digitalization of education has a negative impact on the cognitive skills of young people, narrowing the boundaries of communication between the teacher and students creates gaps in the process of forming analytical, creative competencies (Frolova et al., 2020: 313-336). In addition, it can be assumed that the reason for the dysfunctions of the higher education system in the formation of students' media competence is conservatism, the low rate of adaptation of the educational process to the rapidly changing practices of digital networking.

In modern scientific literature, a set of methods for increasing the media literacy of student youth has been developed as a response to the challenges posed. So of interest are research materials demonstrating the effectiveness of planned and organized practical activities of students in the digital media space, work on media platforms (Kuatbekov et al., 2021); actualization of the reflective abilities of students, the development of intuitive thinking (Troyanskaya, 2020: 23-28); widespread use of the Internet in the educational process, the relationship of electronic information resources with the content of academic courses (Al-Sawy, 2021: 43-49). These conclusions of foreign scientists indirectly confirm our results on the importance of Internet skills in the formation of young people's media competence, their ability to differentiate fake news and reliable information.

The connection with the needs, motivations and goals of young people is important (Han, Reinhardt, 2022), focusing not on the educational "product", but on the educational process (Havemann, Roberts, 2021). J.A. Young and R. Ronquillo note that increasing students' new media literacy is achieved through collaborative learning activities (Young, Ronquillo, 2022).

R.H. Leighton and D.M.E. Griffioen consider the role of digital curation (search, creation and mixing of digital content) in the development of student media competence (Leighton, Griffioen 2021). At the same time, the resources of the teacher can be graphics, photos, text, videos, templates, animation and other separate digital multimedia objects (Paskevicius, 2021)

The reflexive pedagogical method Media Life Study in the course "Transcultural Perspectives in Media Education", which was developed as part of the Erasmus+ project (e-Mel.org), showed good results in improving the media competence of students. This method included in the learning stages: individual storytelling, group production, video news and a study diary (Koponen, 2020: 151-164).

Recognizing the possible effectiveness of introducing gaming methods into the educational process (Vinichenko et al., 2020), the authors express doubts about the possibility of using them to form students' media competence. Game design can be seen as a way to improve the basic skills of computer literacy of students, develop motivation for learning and involvement in the educational process (Jenson, Droumeva, 2017: 212-225). In turn, media competence requires a deeper understanding of the principles of working with media texts, the formation of skills for critical perception of information content, and the differentiation of reliable and fake data. Selective and analytical skills of working with media text cannot be fully formed using gamification techniques. In this context, the authors agree with the opinion of I.V. Chelysheva, who draws attention to the effectiveness of such forms of work in the process of developing media competence as a collective discussion of media texts, creating a creative atmosphere (Chelysheva, 2014: 165-180).

The functional weakness of the higher education system in the process of developing media skills and practices is illustrated by the acceptance and approval of a number of destructive forms of interaction in digital communities. The results of the study showed a regression of ethical standards in the process of digital interaction (one in four approves the use of obscene language in digital communities, almost one in five – offensive statements), distortion of reality, impoverishment of the language. Similar conclusions were obtained in the study by M.A. Abramova, which raises the question of the development of speech, the simplification of texts, the reduction of the emotional component in the process of digital interaction, the distortion of communication models, the transfer of fictitious "I-concepts" from the virtual world to reality (Abramova, 2012: 96-101).

Limitations. The limitations of this study include its pilot nature. This approach to the organization of the study determined the small size of the sample, the spontaneous method of its formation. Practical recommendations for the development of students' media competence are based largely on foreign experience, which can also be considered as a limitation of this study. In the future, a deeper study of methods for the formation of media competence in the system of higher education and the development of evidence-based recommendations for the modernization of pedagogical practices are required.

4. Results

Almost half of the respondents experience difficulties with the initial assessment of the source of information in terms of the "reliability" parameter (41.9 %). This fact is of particular concern in connection with the dominance of the proportion of young people who express interest in news content on the Internet and social networks. In particular, 83.1 % of respondents fully or partially trust such a source of information as news on the Internet. In turn, official sources of information are rapidly losing their popularity among young people. Thus, 45.9 % of respondents trust television, 61.5 % trust the press.

The materials of the study showed that almost $^{2}/_{3}$ of students highly appreciate their skills in working with media and on the Internet. Thus, according to the survey, 33.1 % and 27.7 % of respondents rated their skills at 4 and 5 points, respectively. It is noteworthy that every tenth student has not developed such skills in working with media and on the Internet at all: a score of 1 and 2 points was given by a total of 9.5 % of the respondents. Thus, in the conditions of large-scale digitalization of higher education, students who do not have media competence become subject to the negative consequences of the digital divide.

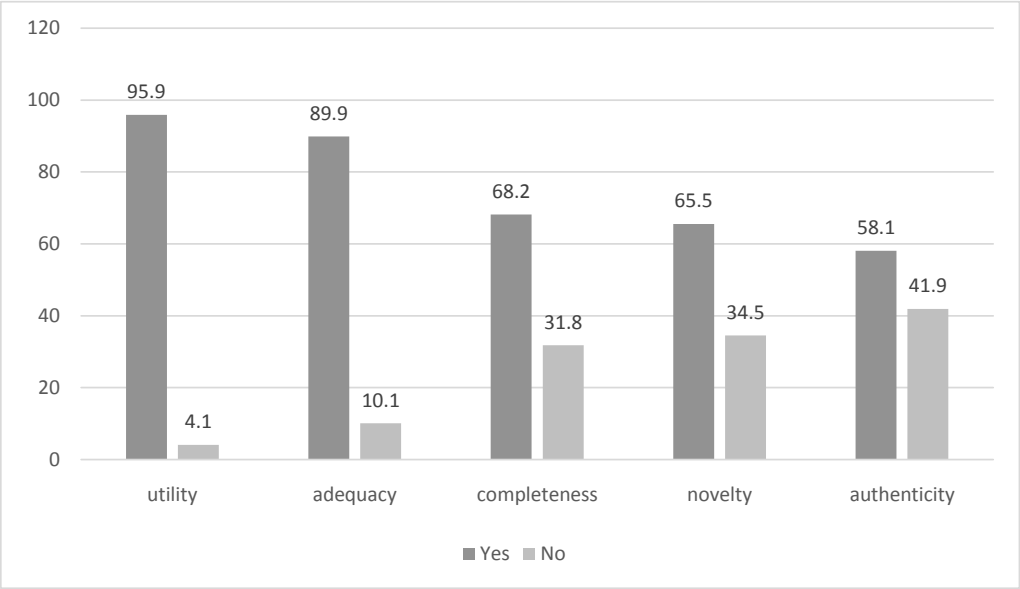

Fig. 1. Distribution of answers to the question: “Can you evaluate any source of information that you have come across according to the following criteria” (%)

Assessment of the usefulness and adequacy of the source of information, as a rule, does not cause difficulties for students (95.9 % and 89.9 %, respectively). As for the assessment of the completeness and novelty of information sources, there are difficulties of nature for every third student (31.8 % and 34.5 %, respectively). Students experience the greatest difficulty in assessing the reliability of an information source. Only 58.1 % of students express confidence that they can assess the reliability of the source. Then one in four cannot say with certainty that they are using relevant information (see Figure 1).

It seems important to identify sources of information that students express greater confidence in. Thus, according to the data obtained, there is a dominance of positive assessments in the segment «news on the Internet» (40.5 % – fully trust and 42.6 % – partially trust), as well as «social networks» (34.5 % – fully trust and 40.5 % – partially trust) (see Figure 2).

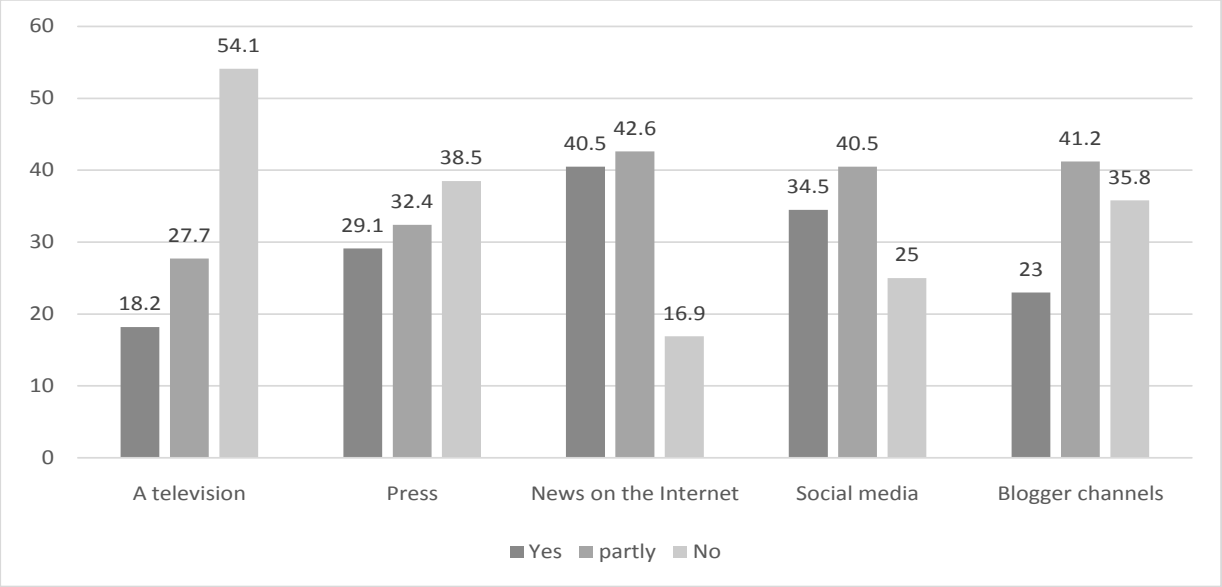

Fig. 2. Distribution of answers to the question: “Do you trust the following sources of information?” (%)

At the same time, the frequency of access to these sources is also significantly higher. 66.2 % of respondents access information on social networks several times a day and 25 % once a day. News on the Internet is viewed by absolutely all students: 39.2 % of them several times a day (see Table 1). It should be noted that the demand for official sources of information is extremely low: about half of the respondents less than once a month or never turn to such sources of information as television and the press (42.2 % and 56.1 %, respectively). While when referring to Internet news and social networks, only less than 5 % of respondents chose the answer “once a month or less” (4.1 % and 3.4 %, respectively). However, none of the respondents chose the answer “never”.

Table 1. Distribution of answers to the question: "How often do you refer to information in the following sources?" (%)

Evaluation parameter	Evaluation criterion				
	several times	a day once	a day several times	a week	a month and rarely never
a television	11.5	18.9	13.5	25.7	30.4
press	16.2	21.6	20.0	20.9	21.3
news on the Internet	39.2	38.5	18.2	4.1	0.0
social media	66.2	25.0	5.4	3.4	0.0
blogger channels	33.7	29.7	19.6	9.5	7.5

In general, 45.9 % of respondents believe that the modern education system has created the necessary conditions for the formation of media competence of the individual. Only 29.1 % spoke negatively on this issue. At the same time, 81.1 % of students believe that in the course of studying at a university they have developed the ability to separate propagandistic, imposed information from the presentation of facts; 83.1 % – "knowledge about information resources, information systems, information and communication technologies". Restrictive barriers in the process of formation of media competence of an individual in the modern system of education, according to students, are: 20.9 % – the lack of an individual approach to the student on the part of the teacher; 49.3 % – a test system that hinders the development of analytical skills, as well as the absence of special tasks aimed at developing the ability to find, evaluate and effectively use information in personal and professional activities (26.4 %).

Taking into account that such students' skills as assessing the reliability of an information source are in the most critical zone, an attempt was made to find out what types of works during classes affect the development of this skill.

Table 2. Dependence between the ability of students to evaluate the information source according to the criterion of its reliability and the frequency of using analytical tables in teaching, pers.

Can you evaluate any source of information that came into your hands according to the following criteria: *reliability*	How often do you use in your training: analytical tables			Total
Possible answer	Often/constantly	Sometimes	Never	
Yes	60	20	6	86
No	40	16	6	62

The value of the Pearson's chi-square test is 0.567. At a significance level of $p < 0.05$, the critical value of x^2 is 5.991. The relationship between factorial and effective indicators is statistically insignificant, the level of significance is $p > 0.05$. The relationship between factor and performance characteristics is not statistically significant (see Table 2).

Table 3. The relationship between the ability of students to evaluate the information source according to the criterion of its reliability and the frequency of using videos in training, pers.

Can you evaluate any source of information that came into your hands according to the following criteria: reliability	How often in your training do you use: videos			Total
Possible answer	Often/constantly	Sometimes	Never	
Yes	44	36	6	86
No	25	26	11	62

The value of the Pearson's chi-square test is 4.543. At a significance level of $p < 0.05$, the critical value of x^2 is 5.991. The relationship between factorial and effective indicators is statistically insignificant, the level of significance is $p>0.05$. The relationship between factor and performance characteristics is not statistically significant. The results of the study showed that today new pedagogical approaches to the development of media competence of an individual are required. Working with analytical tables, videos does not allow you to successfully develop skills for assessing the reliability of an information source (see Table 3).

Interestingly, the results of the correlation analysis showed no relationship between the use of such forms of work in training as the analysis of videos, tables with data and the skills of assessing the reliability of an information source. At the same time, among students with high self-assessment of Internet skills, the proportion of those who answered affirmatively to the question about their competencies in determining the reliability of an information source is much higher (see Table 4).

The value of the Pearson's chi-square test is 6.940. At a significance level of $p < 0.05$, the critical value of x^2 is 5.991. The relationship between factorial and effective indicators is

statistically insignificant, the level of significance is $p<0.05$. The relationship between factor and performance characteristics is statistically significant.

It is interesting that among students with high marks for Internet skills, there is a higher proportion of those who answered affirmatively to the question: "Can you rate any source of information that came into your hands according to the criterion of reliability" (66.6 %, which is higher than the average values in the sample by 1.6 times).

Table 4. The relationship between the ability of students to evaluate the information source according to the criterion of its reliability and the skills of working on the Internet, pers

Can you evaluate any source of information that came into your hands according to the following criteria: reliability	Assessment of Internet skills			Total
Possible answer	4 and 5 points	3 points	1 and 2 points	
Yes	60	20	6	86
No	30	24	8	62

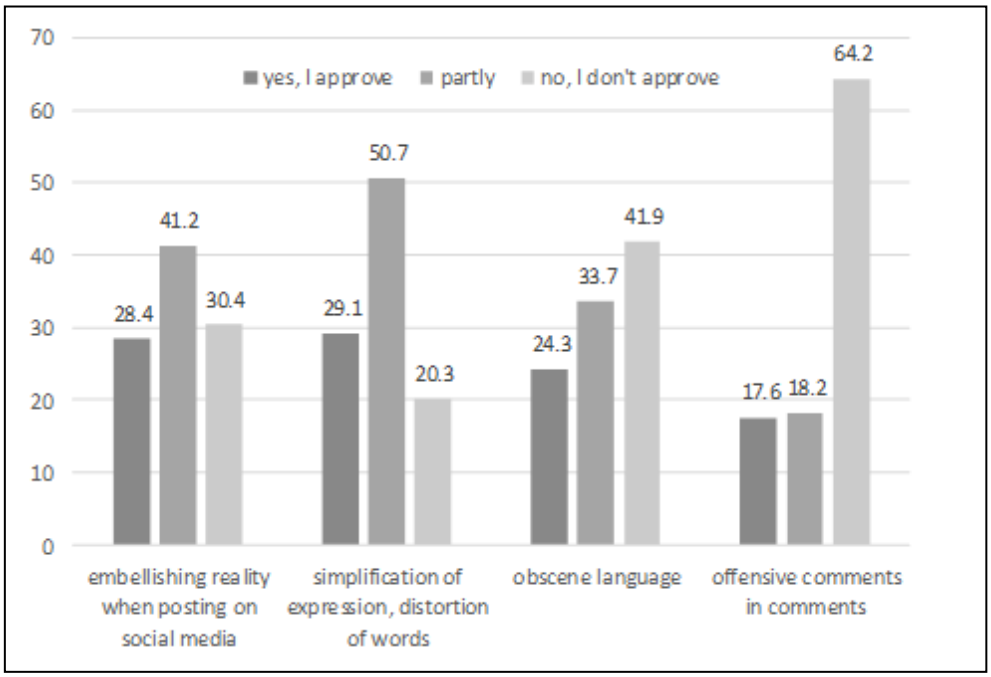

Fig. 3. Distribution of answers to the question: "Do you approve or disapprove of various aspects of communication on the Internet?" (%)

An analysis of the data presented in Figure 3 shows that modern students are rather superficial about the ethical principles of digital interaction. More than half of the students surveyed fully or partially approve of the use of obscene language. Most students have a very calm attitude towards the distortion of information in the process of digital interaction, embellishment of facts (29.1 % fully approve, 50.7 % – in part). One in three fully or partially approves of the use of offensive language in the comments. The results obtained also indicate that the modern education system does not fully cope with the implementation of the educational function, the formation of ethical principles of interaction in the digital space.

5. Conclusion

According to the results of the study, it was concluded that students' subjective assessment of their level of media competence (skills of working with information) is centered in the medium-high range. At the same time, the detailing of the respondents' answers showed the presence of difficulties in assessing such information parameters as reliability and relevance. Thus, the main

hypothesis of the study was partially confirmed. The competence of students in terms of assessing the reliability of an information source is formed to the least extent. This problem is of particular relevance with the intensification of the information flow, the expansion of digital network interactions. In the context of the spread of fake news, the insufficient level of media competence of students leads to vulnerability to information manipulation. The study confirmed an additional hypothesis that official channels of information (television, press) are losing their popularity among students, giving way to digital channels of network interactions.

It is concluded that the traditional practices of conducting classes in the system of higher education do not provide the required level of media competence of the individual. Thus, the hypothesis of dysfunctions in the higher education system was partially confirmed: the test system for assessing knowledge; lack of special tasks aimed at developing the ability to find, evaluate and effectively use information in personal and professional activities. The conservatism of higher education, the focus on mastering academic knowledge and skills, is facing new challenges of digitalization, distortion and falsification of information. In this context, it is necessary to modernize educational practices for the formation of young people's media competence, skills for assessing the reliability of information, and countering manipulative influences.

A correlation was established between the development of a student's skills in the Internet and the formation of his media competence. Internet skills determine a higher level of youth competence in the practice of information analysis, the ability to resist information manipulation, determine the degree of reliability of an information source, and establish the presence of falsification of news content.

In addition, the distortion of moral norms in the process of digital interaction (social approval of obscene language, embellishment of reality, offensive statements in the assessments of every fifth respondent) confirms the functional weakness of the higher education system in the practices of developing media skills.

The generalization of the positive foreign experience in the formation of media competence of students showed the possibility of its partial use in the system of Russian higher education. So of interest are: a reflective pedagogical method, collective discussion of media texts, work on media platforms.

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