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The Impact of the Transition to Distance Learning in the Training of Speech Therapy Teachers: Experience and Research Results

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Abstract

The article analyzes modern research in the field of training students in the aspect of the use of distance educational technologies in professional activities. Considered new conditions affecting the system of education, dictated by the pandemic caused by COVID-2019. Updated the concept of "ICT competence of speech therapy teachers" as the ability to properly use and interact with digital technologies in correctional and pedagogical activities. Highlighted the digital skills of the teacher, which should be based on the appropriate use of innovative technologies in the educational process. Justified the role and functions of ICT in the professional activity of a speech therapist teacher, presented the process of developing ICT competence and the ability of students in the "Speech Therapy" profile to participate in the development of educational programs, to develop their individual components based on project activities. The purpose of this study is to provide a scientific justification for the transition to distance learning for bachelors of the "Speech Therapy" profile during the period of restrictive measures. The article examines the experience of the department of Special (Defectological) Education of the Pedagogical Institute of the NEFU. During the study, students were observed, compiled the experience of teachers of the department of SDE, and collected the data related. The results obtained allow us to conclude about the effectiveness of the use of ICT in distance learning as a means of improving the ICT competence of bachelors in the "Speech Therapy" profile to use electronic educational resources in correctional speech therapy work.

Keywords: speech therapy, speech therapist training, ICT competence, digitalization, e-learning, distance learning.

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Introduction

Modernization of the system of Russian education involves improving the quality of teacher training, defining the main purpose of professional education as the training of a competitive, competent, responsible specialist, ready for professional growth, social and professional mobility. The strategic goal of the higher education system at the present stage is to update its content and achieve new high-quality results, which is impossible without the use of information and communication technologies in the process of training specialists. Issues related to the active implementation of information and communication technologies in all parts of the educational sphere put forward new requirements for the training of future teachers and are an actual component of the professional training of teachers (Zhirkova, Kornilova, Amanbaeva, Kornilov & Unarova, 2020). Adequate inclusion of information and communication technologies in the educational process can significantly improve the effectiveness of training specialists in various fields of knowledge (Kalugina, Larina, Lukovenko, Smirnova & Horeva, 2017; Tretyakova, Prokopiev, Goncharova, Karpova & Iljina, 2020).

Given the emergence of the new coronavirus pandemic (COVID-19), educational institutions have an important task – the widespread introduction of distance learning. The top priority for the ministries of education of all countries was alternative educational solutions, which mainly concerned distance learning measures for schoolchildren and students. The Ministry of Education has adopted a package of documents regulating various aspects of the organization of distance learning, but, as in foreign countries, they are relevant to educational organizations of general, secondary vocational and higher education. In the context of the COVID-19 pandemic, the push to switch to emergency online distance learning has caused difficulties with distance learning. Although well-designed online learning can have the same quality as face-to-face learning (Milman, 2020; Hodges, Moore, Lockee, Trust & Bond, 2020). The shift to emergency distance learning has deepened the digital divide and made it harder to provide students with equal opportunities for online learning, and raised concerns about the availability of digital resources, student data. The processes of digitalization in the educational environment, including in the system of higher defectology education, accelerated, which served as a reason for the transition to a qualitatively new level of theoretical and practical training of future speech therapy teachers for their further competitiveness in the labor market in the post-pandemic period.

The possibility of using information and communication technologies in distance learning is an important component in professional activities, which will further promote the effective use of e-learning, distance learning technologies in combination with traditional technologies, network forms, as well as multimedia software that provides visibility and interactivity (Myers & O'Brien, 2015).

In the domestic speech therapy, the conducted research in the field of teaching tools proves the effectiveness of the use of information and communication technologies in distance learning, and their application in the system of professional training of students in the profile "Speech Therapy".

Our research aims to substantiate the impact of distance learning on the training of future speech therapy teachers who can apply knowledge and skills in new and unpredictable situations. Distance learning should provide learning opportunities as activities that go beyond case analysis and technical training. Students ' readiness, their ICT competencies, and their perspective on online learning play a vital role in the successful implementation of the program.

Purposes and objectives of the study

In this study, the authors wanted to scientifically justify the transition to distance learning of bachelors in the profile of "Speech Therapy" during the restrictive measures caused by coronavirus infection, to explore the experience of the Department of Special (defectological) Education of the Pedagogical Institute of the North-Eastern Federal University named after M. K. Ammosov.

Literature review

Distance education is a more progressive form of education based on a specialized information and educational environment. The progress of science and technology in the field of IT, audio-video technology, telecommunications, and their introduction into the education system make it possible to widely use distance learning tools in the training of students and specialists (Polat, Bukharkina, Moiseeva & Petrov, 2009).

The new "informational" stage of the development of the world education system is objective and irreversible. The use of information technologies in distance learning and the introduction of distance learning in educational institutions for the training of highly qualified personnel is the only possible way of progressive development of the education system and, first of all, higher education (Khalikov & Musamedova, 2013).

Distance learning requires certain skills to achieve high learning outcomes. Students should have fundamental computer skills before taking classes (Arcorful & Abaidu, 2015). Fakilende, Yusuf and Agdebja argued that online learning readiness is determined by Internet access, functional ICT skills, and related self-learning skills (2014).

There are different definitions of the concept of distance learning. Polat gives the following interpretation: "Distance learning is a new form of education that already exists along with full-time, part-time, and external studies. This is a learning system that provides for the interaction of teacher and student, students with each other at a distance through ICT and Internet technologies. The technological component in distance learning is a tool that should be used to solve pedagogical problems" (Polat, Moiseeva & Petrova, 2006). Khutorskoy defines distance learning as follows: "Distance learning, correspondence training, external studies-all these methods of obtaining education claim to be distance learning, since they mean distance learning (2005).

In Russia, distance learning began its development with the release of the order of the Ministry of Education of the Russian Federation of 30.05.1997 No. 1050 "On conducting an experiment in the field of distance education", which allows conducting an experiment in the field of distance education. The availability of computers and the Internet in the 21st century also played a significant role in the development of distance learning (Ayupova, 2016; Order of the Ministry of Education of the Russian Federation, 1997).

Determining the importance of information competence in the process of modern educational space, it is noted that it is part of the general process of informatization, and its development is inextricably linked with the process of informatization of education, the essence of which is revealed in the works of Robert, Mukhametzyanov, Arinushkina, Kastornova and Martirosyan (2017) and Verbitsky (2012), and others. Modern scientific developments in the field of competence-based approach (Zeer, 2005; Zimnaya, 2004; Markova, 1996) played an important role in the interpretation of the features of the formation of students ' information competence. Khutorskoy understands information competence as a person's possession of the relevant competencies, pre-set requirements for the educational training of the student (2005). Tairova defines information competence as a quality of personality, which is the result of reflecting the processes of selection, assimilation, processing, transformation, and generation of information into a special type of subject-specific knowledge, allowing to develop, accept, predict and implement optimal decisions in various fields of activity (Tairova, 2001). In the interpretation of A. L. Semenov's information competence is a new literacy, which includes the skills of active independent processing of information by a person, making fundamentally new decisions in unforeseen and non-standard situations using technological means (Semenov, 2000). Information competence, according to Trishina, is an integrative quality of personality, which is the result of reflecting the processes of selection, assimilation, processing, transformation, and generation of information into a special type of subject-specific knowledge, which allows you to develop, accept, predict and implement optimal decisions in various fields of activity (2005).

Summarizing the various views of scientists, we came to the conclusion that the information competence of students - future speech therapists can be understood as an integral quality of personality, characterized by a high level of knowledge, skills and application of modern information and communication technologies in educational, practical and professional activities.

Tubeeva (2017) notes that the ICT competence of students-future teachers-speech therapists – this is an integral professionally significant personal neoplasm that is necessary for performing all kinds of operations with information in educational, correctional-pedagogical, diagnostic-advisory, design-research and cultural-educational activities (search, processing, storage), as well as high-quality performance of organizational, constructive, communicative development functions (organization of video seminars, conferences, development of educational and correctional programs, work in an electronic library). Author identifies the following as the main components of ICT competence: motivational-value component, cognitive component, activity component and reflexive-evaluative component.

There are a few recommendations and suggestions for improving the support system for distance learning about the integration of video applications that will allow the use of filters, image manipulation, high-quality still images and animated virtual backgrounds (Cutri & Mena, 2020; Correia, Liu & Xu, 2020).

Zimmerman and Kulikovich (2016) recognized the importance of distance learning experiences for performing specific tasks in an online environment. The study found that students with online learning experience give higher confidence in distance learning compared to students without experience of learning in this format.

Readiness is an element that is often used and measured in distance learning research. It has been found that student readiness plays a central role in successful distance learning. Changing requirements are associated with distance learning in terms of technology, learning management, teaching practice, and social roles, which requires substantial training on the part of students (Upton, 2006).

Warner, Christie and Choy in their study defined readiness for distance learning as students 'preferences for online classes compared to face-to-face classes and students' perceived level of confidence and competence in using the Internet and computer communication for educational purposes (1998).

Distance learning involves the active use of Internet technologies that allow to conduct training if the teacher and student are at a distance from each other, and the project can be implemented both on the Internet and in a local corporate network.

Distance learning is most consistent with the current level of development of society. In contrast to the classical forms of education, distance learning is carried out using all the latest technical achievements in the field of telecommunications technologies and the Internet.

Distance learning is learning in a virtual classroom where the teacher and students can interact through various platforms (Moodle, iSpring Learn, WebTutor). This makes it a suitable educational response to the COVID-19 pandemic, as face-to-face classes are not possible (Tretyakova, Prokopiev, Goncharova, Karpova & Iljina, 2020).

Methodology

This study is based on the work of Demei, Moon-Heun Cho, Chia-Lin Tsai and Rose Marra (2013), showing that the number of completed online courses, academic status, show the effectiveness and satisfaction with distance learning. Research studies (Callo & Yazon, 2020; Kwaah & Essilfie, 2017; Peechapol, Na-Songkhla, Sujiva and Luangsodsai, 2018; Zimmerman & Kulikowich, 2016; Edilberto et al., 2020) were used as reference materials to determine the framework for developing a tool suitable for both respondents with and without distance learning experience.

The study was conducted based on the Department of Special (Defectological) Education of the Pedagogical Institute of the North-Eastern Federal University named after M. K. Ammosov. A total of 86 respondents took part in the study: the first group consisted of 43 students of the 2nd, 3rd and 4th courses of the Department of Special (Defectological) Education in the direction of training 44.03.03 Special (defectological) education, profile "Speech Therapy", who during the 2nd semester of the 2019-2020 academic year and the 1st semester of the 2020-2021 academic year took distance learning, and the second group - 43 graduates of 2017, 2018, who previously studied only in the traditional form of education. In February of the 2020-2021 academic year, students completed a questionnaire survey. The emphasis was placed on comparing the results of the study to identify the level of formation of ICT competence in 2 groups.

In this study, the predictive variables of the formation of ICT competence are defined as the motivational-value component, the cognitive component, the activity component, and the reflexive-evaluative component (Tubeeva, 2017).

To assess the motivational and value component of ICT competence, we compiled a questionnaire based on the Callo & Yazon, 2020 methodology, which allows us to assess the readiness for distance learning, the main motives for the formation of information competence in students. This is a 6-point Likert scale ranging from 1 - "Very Low" to 6 - "Very High".

To determine the level of formation of the cognitive component, a 10-point questionnaire was used, based on a study by Kwaah and Essilfie (2017), which assesses the level of students ' ability to the online learning environment, the mechanisms of stress and coping of students in distance education. It is measured on a 5-point Likert scale, which ranges from 1 - "Never" to 2 - "Always".

To assess the activity component, we conducted a questionnaire using an adapted 10-point questionnaire based on the study of Callo and Yazon (2020), which allows us to establish the familiarity and ability of students to use applications and tools of educational technologies, the use of modern information and telecommunications technologies in the educational environment. It is measured on a 6-point Likert scale ranging from 1 - "Very unfamiliar" to 6 - "Very familiar".

Reflexive-evaluative - 22 points that measure self-control, self-criticism and self-improvement in the educational process, time management, and the use of technology. It is measured on a 6-point Likert scale from 1 - "Bad" to 6 - "Expert".

Results

According to the results of the questionnaire in the first group, it turned out that 90% of students had the main motive of "Assessment", 10% - the motive of "Mastering a profession". The analysis of the questionnaire showed that 100% of everyone is ready for distance learning. The analysis of the results of the questionnaire of the second group showed that 90% of graduates had the main motive of "Assessment", 10% - the motive of "Mastering a profession". While determining the conditions, it turned out that 100% of everyone is ready for distance learning.

According to the results of the study, the formation of the cognitive component of ICT competence in the first group showed a low level - 30% of students, an average level-60%, and a high level-10%.
The second group showed a low level of formation of the cognitive component of ICT competence-40% of graduates, an average level-60 %, a high level was not noted.

According to the results of the study of the formation of the reflexive and evaluative component of ICT competence in the first group, 30% of students showed a low level, an average level - 60%, and a high level-10%. These students had situational involvement in distance learning, situational readiness for self-education, working on a computer at the level of an average user, knowledge of basic skills in working with applications, using educational technology tools, ability to work on a distance learning platform, receiving and processing the necessary educational information. 40% of graduates of the second group have a low level of formation of the reflexive and evaluative component of ICT competence, which is characterized by passive inclusion in distance learning. They make mistakes in the use of educational technology applications and tools.

Comparative results of the study of ICT competence indicate that the level of future speech therapists of the first group is significantly higher. In the first group, 60% of students showed an average level of ICT competence, and 40% showed a high level. In the second group, 90% of graduates showed an average level of ICT competence, but no high level was noted.

Discussion

The results of the study indicate that the cognitive and activity components of ICT competence were at a higher level in the more motivated students. Students used educational technology apps and tools more than less motivated students. These results indicate that the theoretical knowledge of students about information and information processes, about the sources of information, about the methods of working with information has become better, but they are not deep and not always conscious. Knowledge about modern methods of working with information and ICT has become better, but they are often superficial, unsystematic, and not personally conscious. Students who studied in the form of distance learning used various resources (electronic library facilities, applications, and websites) to a greater extent than graduates. This is due to the fact that the ICT competence of graduates was formed during training only within the framework of one academic discipline "Introduction to end-to-end information technologies". Graduates were aware of the lack of information to solve any problem, tried to use several information sources, and showed mostly standard operational skills in the use of ICT tools.

It is also noted that most of students noted the impact of distance learning-it made them more independent in their learning. Nevertheless, some students admitted that they experienced difficulties in self-organization, motivation, prioritization, and distraction from their relatives at home.

This raises the question of providing students with an environment that increases motivation, engages them, but also guides and encourages them. The use of distance learning in the educational process is growing, and there is a need for more in-depth study of the material and how it is presented in order to best interact with students (Stanton et al., 2001). There is an increase in the level of ICT competence among students, so teachers also have the question of improving their skills in developing interactive material to encourage students to use it, interact with it, and interact with it.

Statistical analysis and processing of the obtained data indicate that the pedagogical conditions contribute to the formation of their information competence, the development of informatization and decision-making in various situations of professional activity; provide a positive dynamic of motivation for future professional activity.

Conclusion

In conclusion, the results of the study are summarized, the following conclusions are formulated:
1. Information competence of future bachelors is an integral professionally significant personal innovation necessary for performing all kinds of operations with information (search, processing, storage), as well as high-quality performance of organizational, constructive, communicative, and developmental functions.
2.The conditions for the formation of information competence of future bachelors are identified: psychological and pedagogical (motivational attitudes to the use of ICT in educational activities; the development of reflexive skills and others) and organizational and methodological (the use of methods and means of electronic and distance learning, visualization of information while presenting new material, consolidating material, monitoring and testing knowledge).
3. The results obtained in the course of the experimental work indicate the correctness of the choice of pedagogical conditions for the formation of information competence of students.

As the main directions of further research, we assume:
1. Development of methodological support for the process of formation and development of information competence of teachers.
2. Continuity of formation of readiness of bachelors of the Department of Special (defectological) Education of the NEFU Pedagogical Institute for professional activity in the information educational environment.

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