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READINESS OF TEACHERS OF GEOGRAFHY OF SPECIAL SCHOOLS IN SLOVAK REPUBLIC TO USE THE ELECTRONIC MANUAL WITH IT SUPPORT

Abstract. The purpose of the article is to highlight the level of readiness of teachers of geography of special schools of the Slovak Republic (on the example of 14 of special and inclusive education institutions of the Košice Region) to the use of an electronic didactic manual on IT support. Teachers of the Department of Special Pedagogy of the Pedagogical Faculty of the Catholic University in Ruzomberok together with teachers of the geography of special schools prepared an electronic didactic manual on IT support taking into account modern requirements to the level of knowledge, abilities and psychophysical capabilities of school children with special education needs. The manual has helped to raise the level of geographical learning among school children of special school. The convincing results of the pedagogical experiment are described in the previous article «Using a didactic tool with IT-support for teaching geography in a special school in Slovakia». However, in the course of studying the question the researchers concluded that success in the work depends on the level of readiness of the teacher for this work. Namely, the presence of interest and motivation to the introduction of innovative forms of training for the subjects of the education process the attitude of the teacher to the organization of the education process, the level of professional training (possession of the means and technologies of training). To obtain objective and unbiased results Google Form has conducted a survey of teachers of geography. The first set of questions – the reference one – provided an opportblocky to explain the answers of the second set of questions – the informative one. The statistical processing of the survey results supports the assumption that the quality of the IT-supported e-manual is largely dependent on the teacher's readiness. The results also show that the majority of teachers of geography surveyed are well aware of the benefits of this teaching tool and are now ready to put the manual into practice. However, due to the rapid progress in the use of information and communication technologies the teachers of special schools do not deny the need to improve their professional knowledge of the use of ICT in postgraduate teacher training.

Keywords: IT-supported didactic tools; information and communication technologies; school children with special education needs; geography; special school

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1. INTRODUCTION

Issues of improvement of didactics that is the theory and practice of training in education institutions for a long time remain relevant for participants in the education process. «Father» of world didactics is considered the Czech educator J. A. Komenskyi. It was he who first created a solid teaching about the essence, the basic principles and methods of teaching, the classroom system.

At the present stage of education the main form of the education process in special school is a lesson that lasts 45 minutes in the Slovak Republic. This is a time-limited space of education activity in which the teacher (transmitting) and school children (accepting) the education information summarized in this education topic, cooperate with the aim of systematic and purposeful development of knowledge for school children with special education needs. In other words it is an organization for the transfer of cognitive, psychomotor and affective didactic and professional activities of subjects of the education process in a rational continuous sequence.

A lesson can take many forms. But specifically from the teacher, his personal business, professional readiness depends on what form of training he chooses, how he plans, what didactic means he uses, how he prepares the lesson and how he conducts it. Also the quality of the lesson depends on how deeply the teacher works with school children. The teacher, within the limits of his abilities, has ample opportblocky to construct the lesson according to the needs of the school children, in accordance with his own planning and in accordance with the needs of achieving the objectives of the lesson and the curriculum. The previous article of our study (Using a didactic tool with IT-support for teaching geography in a special school in Slovakia) reflects the effectiveness of the organization of teaching school children in 9th grade in geography using IT-supported EDM based on the study in «Slovakia» block. Logical continuation is the coverage of the question of attitude and readiness of teachers of geography of special schools to use in the lessons of EDM and IT support.

Analysis of recent studies and publications. The problem of using digital technologies in the education process of education institutions (kindergartens, schools, higher education institutions) is one of the priorities at the stage of their reform. That is why the European Commission developed the «Framework of digital competence for citizens» [1; 2; 3] presented in 2016 and 2023. This shows that digital literacy is becoming the basic tool of educators in the European space.

Slovakian researchers R. Adamek [4], V. Bobot [5], P. Brečka [6], D. Markechová [7], N. Slavíková [8], D. Uhrik [9], D. Výbonová [10], E. Maninová [11], P. Fridrichová [12], B. Brestenská [13], and the Czech Republic – M. Černý [14], Y. Uhls [15], R. Čapek [16] considered ways to improve the digital competence of teachers in general education institutions. According to these researchers it is impossible to modernize the modern education process without mastering the digital competence of teachers. The foundations of this competence are laid in the training of teachers in higher education, and improvements are made in post-graduate teacher training throughout the career.

Active supporters of the comprehensive use of digital technologies in the study of English are M. Abdullah, S. Dollah, H. Atmowardoyo [17], O. Sovhar [18]. They offer a number of specially designed electronic tools to enhance digital literacy among teachers.

Scientists V. Bykov, O. Ovcharuk, I. Ivaniuk, O. Pinchuk, O. Galperina researched the issue of teachers' readiness to use digital media in general education institutions of Ukraine for the organization of distance and mixed learning in the context of the pandemic. According to the researchers the proposed process of self-evaluation of teachers is important for understanding their capabilities, shortcomings, needs. On the other hand the learning platform went beyond diagnostics, facilitating the bridging of digital gaps, centralizing information and

facilitating its retrieval, providing resources adapted to each need [19]. Of interest is the research of scientists from Iran [20] deal with the components and framework for the digital training of future special education teachers based on internal competence and validation approach.

Research on digital literacy among future teachers of geography is of great importance. In particular, V. Leta, M. Karabiniuk, M. Mykyta, M. Kachailo [21] consider the application of geoinformation technologies in the organization of distance learning. M. Aydin, T. Yildirim [22] analyzed the digital competence of teachers of geography in the application of scientific mapping methods. V. Ostroukh, V. Lepetiuk [23] highlights the use of the online platform for the study of geography.

The specifics of the use of digital learning in special schools and the influence of the level of digital competence in their use are partially revealed in the publications of scientists I. Sereda [24], A. Shevtsov, O. Lastochkina, N. Nykonenko [25], I. Sereda, N. Savinova, N. Stelmah, O. Biliuk [26], H. Mytsyk, M. Pryshliak [27], L. Bespalova [28], D. Tonks, R. Kimmons, & S.L. Mason [29], A.E. Naggar, E. Gaad [30].

However, the question of the readiness of teachers of geography, their motivation to use digital means in the education of children with special education needs remains topical and requires in-depth study. Teachers of the Department of Special Pedagogy of the Pedagogical Faculty of the Catholic University in Ruzomberok together with teachers of the geography of special schools prepared an electronic didactic manual on IT support taking into account modern requirements to the level of knowledge, abilities and psychophysical capabilities of school children with special education needs.

The purpose of the article is to highlight the level of readiness of teachers of geography of special schools of the Slovak Republic (on the example of 14 of special and inclusive education institutions of the Košice Region) to the use of an electronic didactic manual on IT support.

2. RESEARCH METHODS

The methodology and organization of the study were chosen to produce objective and impartial results. They included the following methods:

- method of analysis, synthesis and synthesis of literature, method of content-analysis of pedagogical documents. In the study of literature attention was mainly focused on modern professional literature, scientific and professional publications, collections of scientific works, journals, Internet sources;
- non-standard survey of teachers conducted in Google Form with the purpose of self-assessment of their literacy, motivation and professional readiness to use digital learning tools;
- method of self-assessment evaluation, processing and sorting.

3. RESULTS AND DISCUSSION

The questionnaire was used to collect information on the use of the e-didactic manual (EDM) in the teaching process of selected schools on the knowledge, opinions and attitudes of teachers who used EDM in teaching geography from the thematic «Slovakia» block. Fifteen teachers were interviewed and taught the subject in 14 special and inclusive schools.

The first five questions were reference questions on an empirical sample. The characteristics of the respondents by sex and age are as follows: 4 were men 1of whom was from 30 to 40 years old, 1 was from 41 to 50 years old, 1 was from 51 or older, 2 were women,

2 were from 30 to 40 years old, 5 were from 41 to 50 years old and 8 were by education level: master's degree – 10 people, engineering degree – 3 people, doctorate degree – 2 people; teaching experience: 6 to 10 years – 2, 11 to 20 years – 5, 21 and more – 8. Consequently 100 per cent of teachers have higher education and practical experience of pedagogical work that is they can professionally perform the duties of a teacher of geography.

The following questions focus on the self-assessment by the respondents of the geography subject in a special school. This information is the basis of our research. The views expressed by the respondents were separately classified according to individual allegations grouped into groups with the same or similar views. Subsequently, individual responses were evaluated qualitatively. Questions 5; 6 and 10 were evaluated from 1 (positive response and teaching) to 4 (negative response) (Table 1). Finally individual points were averaged and statistically estimated. This method was chosen statistically to confirm or refute our assumption.

Table 1

Legend for teacher questionnaire for statistical evaluation of hypothesis

Legend to questionnaire items №5; 6		**Legend to questionnaire item № 10**	
Categorisation of items	**Points**	**Categorisation of items**	**Points**
Yes	1	Positive evaluation of EDM	1
Yes, but with comments	2	Negative evaluation of EDM	4
No with comments	3		
No	4		

Item 5 of the questionnaire. ***To assess whether lessons using EDM on IT support in geography were useful for school children with special education needs and you?***

In item 5, the response was predominantly positive (Table 2). 10 respondents (66.66 per cent) answered «Yes» to this question which is very encouraging from the point of view of the preparation and establishment of an EDM. «Yes, but with additional comment» two respondents (13.33 per cent) replied. The comment referred to the observation of school children whose concentration was not sufficiently effective, despite the introduction of EDM in the learning process and the great efforts of the teacher. However, this condition should be understood individually in terms of the subjective conditions of school children with special education needs. The other subquestion in this question is «No», which was justified by:

(a) obsolescence of the interactive equipment, that is, that IT failed. Unfortunately, even technology can fail in normal school practice. Therefore, the teacher is always required to have a backup lesson plan that completely replaces the scheduled lesson.

(b) the fact that there are several classes in the same room and to give full attention to all school children in each class is very difficult and time-consuming (this applies primarily to the objective problems of inclusive learning). In this case the teacher should be very rationally and logically on the basis of competent profiles, consider what forms to use in the class.

There was another answer to this question – «No». It is difficult to comment on this part of the question because it has no justification. However, it can be assumed that there are school children in the class with multiple impairments that affect the course of the lesson or the teacher has no motivation or the necessary digital literacy to conduct lessons supported by EDM and IT, or ICT is used in the classroom above the required level, or the teacher could have subjective, that is, other, reasons for categorical «No». It can also be assumed that some teachers, and these are as a rule people «adulthood» are not fully proficient in computer skills. But this is only an assumption because the self-esteem was anonymous.

Table 2

Responses of respondents to item №5

Respondents' answers	Men	%	Women	%	Total	%
Yes	2	13,33	8	53,33	10	66,66
Yes, but despite the good visualisation of the EDM, some pupils were unfocused and distracted others	1	6,66	1	6,66	2	13,33
M – No, because IT broke down in the classroom. Therefore, the class was held traditionally. Ž – No, because there are several grades combined in the class and it is very difficult to attend to all the pupils so that the pupils concentrate enough on the illustration of the topic.	1	6,66	1	6,66	2	13,33
No	-	0	1	6,66	1	6,66

Item 6 of the questionnaire. ***Did the EDM-based training motivate school children and you?***

In item 6 the teachers reported the results in their replies (Table 3). Nine teachers (60 per cent) replied «Yes», without justification or additional data. In this case, it seems to be a sufficient and adequate motivation to study the topic. The answer «Yes, with justification, despite a good demonstration of EDM, some school children were scattered and constantly distracting others» gave four teachers (26.66 per cent). It can therefore be concluded that the pattern of developmental impairment of some school children has a significant impact on learning. The answer is «not unreasonably» similar to the previous group of teachers (one teacher – 6.66 per cent), and there is also an assumption that disability or behavioural disorders of the student will significantly interfere with learning not only geography, but in other subjects on a normal school day. «One teacher (6.66 per cent) noted that this was not a bad thing». There may be a number of reasons, but in most cases these are health related to the health of the group of school children concerned. However, it is also possible as in the previous question 5 of the questionnaire that the teacher and especially the school children have automated their own methods and forms of learning implementation supported by EDM and IT in the education system or ICT are used in the classroom above the level of need, or the teacher could have a subjective, that is, another reason to say decisive «no».

Table 3

Respondents' answers to item 6

Respondents' answers	Men	%	Women	%	Total	%
Yes	1	6,66	8	53,33	9	60
Yes, but despite the good illustrative treatment of the EDM, some pupils were unfocused and consistently distracted others	3	20	1	6,66	4	26,66
No, EDM with IT pupils was only able to motivate briefly.	-	0	1	6,66	1	6,66
No	-	0	1	6,66	1	6,66

Item 7 of the questionnaire. ***Describe the difficulties in the process of geography lessons in 9th grade with the application of EDM***

The answers were as follows. The subject of geography «Slovakia» was difficult for school children to understand the content. School children who attend school despite the great efforts of all teachers, very rarely read most texts with the understanding that is one of the main reasons for difficulties in understanding this subject of the curriculum. A total of 11 respondents responded. «Understanding what is read» is an ongoing problem not only for school children in special schools with different types of disorders but also for healthy school children. One of the objectives of the EDM is to increase interest in learning through ICT and visual aids to remember and understand the level of taxonomy of education purposes. One of the reasons for such responses is reduced intelligence to which other causes associated with multiple violations are usually attached. Very closely related to the previous response are other respondents' responses namely difficulties in the questions «Orientation on the map» or «Logical Links» noted 14 respondents, that is 93.33 per cent and «Concept» noted 11 respondents, which is 73.32 per cent. It is clear that such answers are influenced by the low level of basic knowledge that school children gradually acquire through the study of social sciences. It is for this reason that the EDM under consideration was designed to develop an interest in pragmatic knowledge of the subject through an interesting demonstration (Table 4).

Therefore, the difficulties described by the respondents are objective because it is an education process with school children who have problems with intellectual growth. The proposed e-tool is designed to address positive trends in the psychophysical development of children.

Table 4

Respondents' answers to item №7

Questionnaire item №7	Respondents' answers	Men	%	Women	%	Total	%
Write what was in the geography subject was challenging for pupils in terms of their understanding of the curriculum.	Reading comprehension	4	26,66	7	46,66	11	73,32
	Logical connections, orientation on the map	4	26,66	10	66,66	14	93,33
	Concepts	4	26,66	7	46,66	11	73,32

Item 8 of the questionnaire. ***Indicate what additional training tools were used in the geography course for 9th grade in the thematic «Slovakia» block***

In item 8 respondents expanded their responses and provided several alternatives for using the training manual in the block. The primary and most desirable answer was the answer «textbook and workbook, map». This answer was given by all 15 respondents that is 100 per cent. This indicates that the textbook, workbook and map are the basis for synchronized continuity of the curriculum and thematic plan in terms of the choice of teaching methods and forms. Respondents mentioned the classic school green board as another teaching aid. This answer was given by 12 respondents which is 80 per cent. This response shows that the above-mentioned Green Board and Chalk continue to be an integral part and a unique «icon» of the education process for each subject. Five respondents (33.33 per cent) chose the answer «Own worksheet». This response suggests that teachers while preparing for the learning process,are looking for ways to attract and teach school children attending a special school in the best, most

effective and most interesting way. Another answer given by respondents was «the Internet and Google» which in our modern electronic age is given a growing advantage of the phenomenon of bias. Four respondents (26.66 per cent) noted this response. Also 4 respondents noted that they consider this topic throughout the excursions, explaining the topic to school children through discussion of illustrative examples.

From these answers to the question it is clear that teachers make a lot of efforts to be as effective as possible in the education process taking into account the composition of the class, circumstances and degree of disability which have to be taken into account to a large extent (Table 5).

Table 5

Respondents' answers to item №8

Questionnaire item №8	Respondents' answers:	Men	%	Women	%	Total	%
Please describe what other teaching aids you have used in geography	Textbook, workbook, map	4	100	11	100	15	100
	School green board	3	20	9	60	12	80
	Custom worksheet	1	6,66	4	26,66	5	33,33
	Internet / Google	3	20	1	6,66	4	26,66
	Cross-sectionally during excursions and walks	4	26,66	0	0	4	26,66

Item 9 of the questionnaire. ***Write down what methods were used to assess school children' knowledge in the subject***

In item 9 the respondents again provided a number of responses which we put together in three consecutive groups. The first group mentioned by respondents in this question is oral or classical oral testing of school children. As expected all teachers who took part in the survey remembered this point which is 100 per cent of respondents. The next answer chosen by the teachers was a written answer called a written test or written test. This point like the previous one noted all respondents that is 15 of them – 100 per cent. Another response to this point was tasks that are given and simultaneously verified through feedback through pre-prepared and pre-scheduled homework. Nine teachers responded representing 60per cent of the total. In the overall assessment of question 9, it is necessary to highlight the routine activities related to student assessment (table 6). The conclusion is simple – it is necessary in the future, together with teachers-respondents, to improve the system of assessment of school children with special education needs through information and communication means and technologies.

Table 6

Respondents' answers to item №9

Questionnaire item №9	Respondents' answers	Men	%	Women	%	Total	%
Describe the	Oral Answer – Examination	4	26,66	11	73,33	15	100

methods you use to measure pupils' knowledge of the subject	Written answer/test	4	26,66	11	73,33	14	100
	Homework assignments	2	13,33	7	46,66	9	60

Item 10 of the questionnaire. Make a self-assessment of teaching the subject «Geography» for 9th grade in the thematic «Slovakia» block using the EDM

Table 7

Respondents' answers to question №10

Questionnaire item №10		Respondents' answers	Men	%	Women	%	Total	%
Try to briefly evaluate the teaching of geography using EDM	Positive assessment of EDM	EDM was for pupils motivating	3	20	9	60	12	80
		EDM was sufficiently illustrative	4	26,66	8	53,33	12	80
		Pupils were attentive and focused	2	13,33	6	40	8	53,33
		There was interaction in the classroom, the pupils had interested in discussion	2	13,33	4	26,66	6	40
		Pupils suggested and encouraged to a more frequent form of this type	1	6,66	4	26,66	5	33,33
	Negative assessment of EDM	Pupils, despite their efforts positive, quality and with appropriate scope of the learning material disrupt the progress and distort the planned preparation	1	6,66	3	20	4	26,66

In the last tenth question of the questionnaire teachers were able to assess and express their views on the teaching of the subject «Geography» for the ninth grade in the thematic «Slovakia» block using the EDM. The statements of the respondents were not too extensive but with specific and clear language. As in previous open questions the teachers evaluated the teaching process using several formulations. The most common responses were motivational and visual, reported by 80 per cent of teachers. In this context it should be noted that school children, regardless of whether they are healthy or less mentally retarded/disabled are interested in visual learning which leads to higher motivation and interest in learning. Closely related to this answer to the questions is the third group of opinions of teachers/respondents in which they note the attention and concentration of school children (53.33 per cent). The fourth set of responses is a natural reflection which is the result of interest and well-planned, interpreted and targeted training activities.

Thus, this lesson creates a rational discussion or interaction and debate on the topic. This response was given by 40per cent of teachers. The next group was the incentive response where school children were encouraged to teach more of these lessons, i.e. more. This answer was given by 33.33per cent of respondents (Table 7).

In total, 15 teachers evaluated their work using EDM. They could comment on how satisfied they were and whether they rated the use of EDM positively or negatively at each point of the questionnaire. According to the respondent's inclination to a positive or negative rating based on his/her experience with the tools the scores were placed on a scale from 1-most positive to 4-most negative. To test our assumption, 3 items of the questionnaire were used, and thus, if all teachers would answer unambiguously positive they would score only 45 points (15 respondents * 3 items * 1 point). If all the teachers were clearly negative, we would get a maximum score of 180 points (15 respondents*3 items*4 points).

For comparison we used $\chi 2$-consistency criterion. The hypothesis H0, the coincidence of empirical and theoretical distributions was tested. In our case the empirical, i.e., true, data distribution consisted of the values formed by the difference between our actual scores (66 – 45 = 21) and the lowest possible score and the difference between our highest possible score and our actual score (180 – 66 = 114 points). We compared this distribution to the theoretical distribution, which we defined as the average of the maximum score – 180 points – and the minimum score – 45 points, that is, 112.5 points. The data structure together with the result of $\chi 2$ compliance test is aligned in Table 8 below.

Table 8

Data structure

	Differences	Mean values	P-value
Difference real-most positive	21	112,5	$6{,}3.10^{-18}$
Difference most negative-real	114	112,5	

Since the probability value is lower than the significance level p(6,3,10-18) α(0,05), we reject the null distribution hypothesis in favor of the alternative hypothesis H. From the data structure given in the table, shows that there is a statistically significant difference from the theoretical average for a positive assessment of the impact of EDM, that is, most teachers rated the work positively. Given the very small difference between the negative and the theoretical average it is clear that very few teachers were inclined to the negative and in only one of the three points studied. Indeed, the more teachers evaluate the manual positively, the more the average difference decreases, and vice versa, the more teachers rate the manual negatively, the more the average difference increases to maximum. This diameter difference is also visible in histogram 1 which shows the ratio of positive and negative to average.

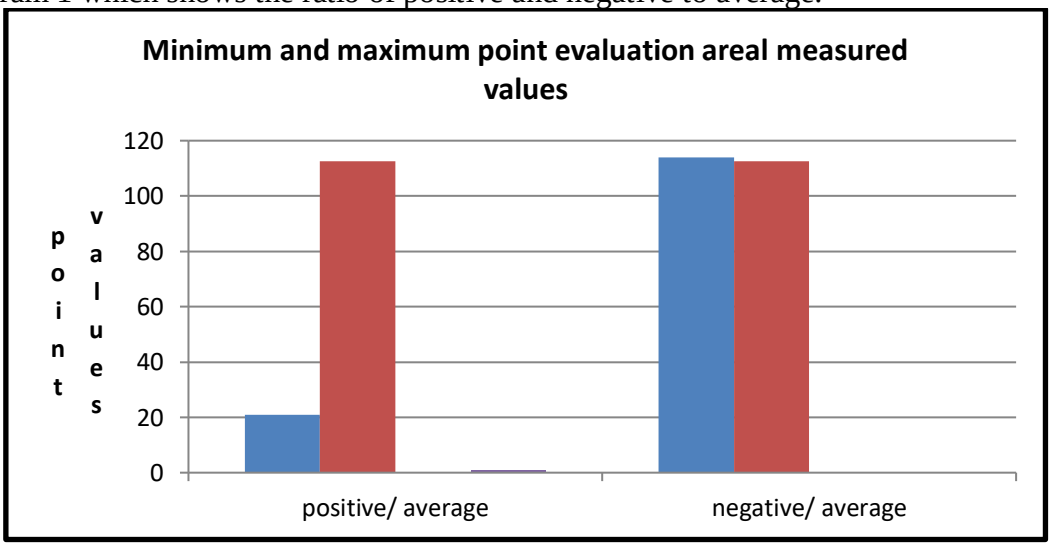

Fig. 1. Proportions of positive and negative ratings to the average

In the preliminary study we came to the conclusion that the application of the proposed electronic didactic manual with IT-support in teaching «Geography» in the «Slovakia» block In the 9th grade of the school for school children with special education needs statistically significantly affects the quality of teaching the subject. In this study we found that teachers of geography in a special school rate teaching using EDM with IT support more positively than traditional teaching without EDM and IT. This difference is statistically significant in favor of teaching using EDM and IT. At the same time respondents showed that future use of ICT tools and technologies should be systematically accompanied by improvements in digital literacy of teachers in postgraduate teacher education.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

One of the important determinants of the success of special schools is the introduction of innovative forms, methods and means of teaching. Teachers of the Department of Special Pedagogy of the Pedagogical Faculty of the Catholic University in Ruzomberok together with teachers of the geography of special schools prepared an electronic didactic manual on IT support taking into account modern requirements to the level of knowledge, abilities and psychophysical capabilities of students with intellectual disabilities. Studies have been carried out on the effectiveness of this manual among ninth grade students. The results were positive and the quality of training improved. A new step in the study was to test the effectiveness of the manual. In theory it is clear that the effectiveness of ICT usage depends significantly on the digital competence of teachers of the special school. An empirical study of teachers' readiness to use ICT in the education process was conducted to confirm this. In the research a non-standard survey of teachers (Google Form) was used in order to self-evaluate their literacy, motivation and professional readiness to use digital learning tools. The statistical processing of the survey results confirmed the assumption that the quality of the electronic didactic manual on IT support is largely dependent on the teacher’s readiness. The vast majority (80%) of teachers have shown a positive attitude towards the use of the manual and have indicated their willingness to use it actively. So, the readiness of most teachers of geography of special schools (according to the empirical sample) is on the one hand encouraging and on the other hand considering that not everyone is positive and not yet ready to use ICT prompts us to look for additional conditions and opportunities to further develop digital literacy of the teachers of special education.

The further direction of the study will be the issues of increasing the digital competence of teachers in the system of postgraduate teacher education.

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ГОТОВНІСТЬ УЧИТЕЛІВ ГЕОГРАФІЇ СПЕЦІАЛЬНИХ ШКІЛ СЛОВАЦЬКОЇ РЕСПУБЛІКИ ДО ВИКОРИСТАННЯ ЕЛЕКТРОННОГО ДИДАКТИЧНОГО ПОСІБНИКА З ІТ-ПІДТРИМКОЮ

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Анотація. Метою статті є висвітлення рівня готовності вчителів географії спеціальних шкіл Словацької республіки (на прикладі 14 закладів спеціальної та інклюзивної освіти

Кошицького краю) до застосування електронного дидактичного посібника з ІТ-підтримкою. Викладачами кафедри спеціальної педагогіки Педагогічного факультету Католицького університету в Ружомберку спільно з вчителями географії спеціальних шкіл підготовлено електронний дидактичний посібник з ІТ-підтримкою з урахуванням сучасних вимог до рівня знань, умінь та психофізичних можливостей учнів з порушеннями інтелектуального розвитку. За допомогою посібника вдалося підвищити рівень оволодіння географічними знаннями учнів спеціальних шкіл. Переконливі результати педагогічного експерименту описані в попередній статті «Using a didactic tool with IT-support for teaching geography in a special school in Slovakia». Утім у ході вивчення питання дослідники дійшли висновку, що успіх у роботі вагомо залежить від рівня готовності вчителя до цієї роботи. А саме від наявності у суб'єктів освітнього процесу інтересу та мотивації до запровадження інноваційних форм навчання, ставлення вчителя до організації освітнього процесу, рівня професійної підготовки (володіння засобами та технологіями навчання). Для отримання об'єктивних та неупереджених результатів за допомогою Google Form проведено опитування вчителів географії. Перший блок питань – довідковий, за допомогою цих відповідей з'явилась можливість пояснювати відповіді другого блоку – інформаційного. Статистична обробка результатів опитування підтверджує припущення про те, що якість використання електронного посібника з ІТ-підтримкою багато в чому залежить від рівня готовності вчителя. Результати також свідчать, що переважна більшість опитаних учителів географії добре розуміють переваги цього засобу навчання і сьогодні вже готові на практиці застосовувати посібник у педагогічній практиці. Утім через стрімкий прогрес у використанні інформаційно-комунікаційних засобів, які мають необмежені можливості, педагогічні працівники спеціальних шкіл розуміють потребу в удосконаленні своїх професійних знань з використання ІКТ у системі післядипломної педагогічної освіти.

Ключові слова: дидактичні засоби з ІТ-підтримкою; учні з особливими освітніми потребами; інформаційно-комунікативні технології; географія; спеціальна школа

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