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DOI: 10.34866/gpwq-7m53

Obtaining information by postgraduate students in the era of IT development

Pozyskiwanie informacji przez studentów studiów podyplomowych w dobie rozwoju technologii informacyjno-komunikacyjnych

Słowa kluczowe: edukacja, wiedza, informacje, kompetencje.

Streszczenie: Przedmiotem opracowania są źródła pozyskiwania informacji wykorzystywane przez studentów studiów podyplomowych w dobie rozwoju technologii informacyjno-komunikacyjnych. Szybkie przemiany, jakie zachodzą w sferze technologicznej, wywarły również wpływ na edukację.

Celem prowadzonych badań było sprawdzenie, w jaki sposób technologia wpłynęła na proces pozyskiwania informacji. Zostało to zbadane poprzez realizację celów szczegółowych, do których można zaliczyć określenie związku pomiędzy źródłem pozyskiwania informacji a kierunkiem studiów podyplomowych, czy też na przykład wiekiem studenta.

Key words: education, knowledge, information, competences.

Abstract: Technological changes have a tremendous impact on education and methods of obtaining information. The author is concerned with the question where exactly postgraduate students obtain information from in the era of IT development. The aim of the article is to explain to what extent technology influences the process of obtaining information by determining, for instance, the relationship between the source of information and the type of post-graduate studies or the age of a student.

Sources of knowledge

Knowledge acquisition is associated with specific processes that take place in the following way: the environment provides knowledge inside the organization implements and binds it, present states that together can solve problems, and future experiments are carried out under the applicable rules.

Searching, acquiring knowledge is associated with appropriate conditions. It is of great importance here, among others, broadly understood culture, value system, style and principles. These elements should be mutually supportive, and foster creative thinking employees. This also applies to situations related to the development of competences by employees, including teachers.

You can also look at the course of acquiring knowledge through the prism of learning. At the very beginning, there is traditional science, thanks to which information is obtained individually or in a team, later transformed in the thought process into knowledge, and thanks to reasoning and dialogues, new knowledge is created. The next sub-process is experiential learning, through which we gain new experiences and expanding knowledge.

Knowledge is associated with understanding the relevant information and their use in the course of decision-making processes. Knowledge gained importance when advances in technology means that organizations need to increase the efficiency of operation and more intangible than tangible assets. This also applies to teachers who desires expanding his area of competence, including through the implementation of postgraduate studies.

Obtaining information on the basis of research

Postgraduate students commonly use the web and smartphones, obtain knowledge from available sources and use it to exchange information with each other. However, they still have access to traditional learning methods, such as textbooks or encyclopaedias.

The speed of changes in the technological sphere may also increase the disproportion between the actual source of obtaining information and the teachers' way of thinking about it. The subject of research is obtaining information by postgraduate students in the era of information and communication technologies development.

The aim of the research was to check if and how technology influence the process of obtaining information and what of classical teaching style and new techniques looks like today. It was tested through the implementation of specific objectives, which include finding out the correlation between the source of obtaining information and the field of postgraduate studies or the age of the student.

The research was conducted with the use of the "Google Form" tool, which made it possible to present questions in a convenient way for the recipients. Then, the survey was disseminated through various communication channels on the Internet, which include:

- direct link sent by e-mail or by instant messaging
- sharing the survey on social networks
- posting the survey on related groups and forums.

In the course of the research, 400 questionnaires consisting of four parts were completed. At the beginning, there is a short certificate of information such as gender, school type, class and the area in which the school is located. The next part of the survey concerns the use of school textbooks and other books to obtain information. Further questions related to the Internet, and finally even other available sources.

Obtaining information by a postgraduate student in the era of the development of information and communication technologies based on a research

Of the 400 respondents, 320 people is primary school teachers. Most of the respondents work in a a small town school – 164 respondents, which is 41%. A large and medium-sized city is fairly evenly distributed, with 84 and 92 respondents respectively, i.e. 84% and 23%. The smallest number of respondents attends school in rural areas – 60 people, i.e. 15% of the respondents.

Research has shown that about 81% of respondents use school textbooks to gain knowledge, while about 61% of people use them as far as other books, apart from textbooks. This may be due to the faster access of textbooks compared to other books and resources of knowledge.

Table 1. Using books during education process

	L.	%
Using textbooks	291	72,75
Using other available books	109	27,25

72.7% of the respondents used school textbooks during postgraduate studies, and 27.2% of the respondents used other available books. Among teachers working in general secondary schools, as many as 90% of people using textbooks and available books. 80% of teachers working in primary schools similarly declared, while in the case of teachers of technical secondary schools it was 74%. Still most high school teachers look for other book sources, but in a smaller number - 64%. Just behind them, followed by primary school teachers and technical respectively 60 and 61 percent. As can be seen in all three cases the results are very similar. Among vocational school teachers, only one in four searches for other books. Interestingly, among technical secondary school teachers, the difference is slightly smaller when it comes to people using textbooks. It is the largest among high school teachers and primary school teachers, which may result from the specificity of subjects in technical schools. The results are presented in the table below.

Table 2. The use of school textbooks and books by postgraduate teachers, taking into account their work at a specific stage of education

Teacher work at school	Using textbook				Using different books			
	Tak		Nie		Tak		Nie	
	L.	%	L	%	L.	%	L.	%
Primary	320	80	80	20	240	60	160	40
High school	360	90	40	10	256	64	144	36
Technical school	296	74	104	26	244	61	156	39
Vocational school	200	50	200	50	100	25	300	75

Students of postgraduate studies in school textbooks mainly look for definitions of concepts / terms, over 50% of people who use textbooks in a given field indicated this answer. It is especially visible among teachers of natural and chemical subjects, where as many as 72% of people answered this way. Only vocational and IT teachers have 50% or less of these responses. Other actions, not mentioned, are also being taken, but to a much lesser extent. Only teachers of technical and IT, vocational and other subjects were declared in about 30%. The rest is at the level of 10%. Detailed results are presented in the table below.

Table 3. Questioned teachers who use school textbooks depending on the school subjects they teach

Teacher accordingly to science group	Defining Terms		Information needed to pass exam/ kartkówkę		Source of essay		Aid in homework		Solving classwork		others		Sum.	
	L.	%	L.	%	L.	%	L.	%	L.	%	L.	%	**L.**	**%**
Foreign Languages	110	59	124	66	39	21	105	56	3	2	11	6	**187**	**98**
Humanities subject's	112	62	107	59	71	39	102	56	1	1	15	8	**182**	**95**
mathema-tical and physical subjects	102	55	114	62	6	3	138	75	3	2	23	12	**185**	**97**
natural and chemical subjects	129	72	115	64	11	6	116	65	`1	1	23	13	**179**	94
technical and IT subjects	70	48	58	40	8	6	65	45	1	1	41	28	**145**	**76**
professio-nal courses	62	55	56	50	20	18	54	48	1	1	37	33	**113**	**71**
other	33	43	27	35	8	10	47	61	0	0	25	32	**77**	**48**

Table 4. Using other books depending on the category of taught subjects

Using books other than textbook	Encyclopedia		Repertory		Library books		Studies objective		other		summ	
	L.	%	L.	%	L.	%	L.	%	L.	%	**L.**	**%**
Foreign Languages	14	11	77	59	6	5	33	25	44	34	**130**	**90**
Humanities subjects	39	30	46	36	43	33	72	56	19	15	**129**	**89**
mathematical and physical subjects	14	12	57	50	4	3	35	31	41	36	**114**	**80**
natural and chemical subjects	34	31	44	40	7	6	42	38	39	35	**111**	**77**
technical and IT subjects	13	15	19	22	3	7	21	24	50	57	**88**	**61**
professional courses	11	14	16	20	15	19	18	23	47	59	**79**	**66**
other	12	23	14	26	7	13	6	11	30	57	**53**	**44**

When it comes to the frequency of using other available books, apart from textbooks, a smaller percentage of postgraduate students use them every day - 60% and most often less than 1 hour – 54%. Only 20% of them use them several times a week, but most often from 1h to 2h. A few times a month only uses - 14% and additionally, less than 1h – 65%. The vast majority of respondents among those who answered this question (220) believe that books are a good source of knowledge – 79%. They argue this mainly with the credibility of information, a large number of definitions, accuracy of descriptions, and stimulation of the imagination. Some also are accustomed to this type of learning, they believe that they broaden the knowledge and there are the most important information or just there all that is necessary to complete the course. According to 13% of respondents, books are not a good source because you have to look for information for too long and believe that there is much too much of everything there, making it difficult to search, while continuous text is boring.

Computer and web pages as a postgraduate teachers source of knowledge

The vast majority of respondents use the Internet to obtain information needed during their studies – as much as 97%. Only 3% do not use it for this purpose.

Virtually all respondents use the Internet. Most technical teachers, almost 100% the least in primary school – 93%, which is a very high value anyway. The results are shown in the table below.

Table 5. Using the Internet while learning based on the stage of education

Teacher working in:	Using online sources			
	Yes		No	
	L.	%	L	%
Primary school	372	93	28	7
High school	392	98	8	2
Technical school	336	99	4	1
Vocational school	300	75	100	25

Teachers most often use the most popular websites. Few people use scientific articles, although it is interesting that the most (25%) look for an additional source of knowledge and information for learning.

Table 6. individual websites depending on the action taken, as a percentage

websites most often used by teachers - postgraduate students	% of users										
	Brainly.pl	Bryk.pl	Fora internetowe	YouTube	Wikipedia	Sciaga.pl	Wypracowania.pl	Scientific articles	others	others	
	%	%	%	%	%	%	%	%	%	L.	%
Solving computational tasks	65	17	27	49	17	29	4	9	18	215	96
Completed essays or inspiration	37	47	20	27	40	48	37	11	14	207	92
Definitions of terms / concepts	28	16	19	15	82	20	5	16	9	221	98

Additional source of knowledge	15	12	29	53	62	14	8	25	17	213	95
Ready homework	79	33	16	11	11	45	13	3	13	204	91
Help with homework	63	30	30	37	37	35	11	16	22	218	97
Information to the learning test / quiz	20	23	28	40	58	25	9	25	23	213	95
others	14	8	19	31	25	12	6	10	54	93	41

The Internet is used the most in the case of foreign languages – 97%, then in mathematics and physics 94% in humanities and in biology – chemistry 94% and 93%, respectively. There is less demand in technical and IT subjects – 77% and professional subjects – 75%.

In the case of foreign languages, help is most often sought on YouTube 50%, as in mathematics and physics 48% and technology and IT 45%. Brainly.pl helps the most in mathematical - physical and biology - chemical subjects, 63% and 51%, respectively. Wikipedia is mainly used in the humanities and biology - chemical successively with 50% and 44%. There are 43% of other pages in vocational subjects, which are probably more specialized depending on the field.

Other sources of information relevant to obtaining information from research

Most of the respondents use other available sources besides books and the Internet (63%). In the case of vocational school teachers, more than half of the respondents from a given stage of education use other available sources than books or the Internet. Among high school and technical high school teachers, it is 68% and 62%, respectively, and in primary school a little over a half (55%).

Table 7. Using other sources to obtain information

Teachers working at:	Using other sources			
	Yes		No	
	L.	%	L	%
Primary school	22	55	18	45
High school	71	68	33	32
technical school	53	62	32	38
vocational school	1	25	3	75

Other additional sources besides books and the Internet are most often used by postgraduate students to learn foreign languages (95%). Secondly, there were mathematics and physics (89%), while science and chemistry and humanities subjects were obtained by 79% and 74%, respectively. At the end there were technical and IT subjects 66% and vocational subjects 62%. In learning foreign languages, users most often use various learning applications / programs, as much as 72 percent. In second place are the parents / friends / tutors or help others in science. Here we have 59% of the answers. Interestingly, apart from technical and IT, professional and other subjects, the help of other people takes the top. Mostly in science (63%) and biology-chemical subjects and humanities, 46% and 40%, respectively. This may be due to the importance of these subjects as compulsory for the Matura exam or supplementary for those who want to enter the field of study. In the case of science, learning applications / programs are also high (52%). The rest is about 30%, TV shows are the least significant, this answer was marked by individuals.

Conclusions

The results indicate that the Internet is the main source of information obtained by postgraduate students. As many as 97% of respondents replied that they use it for educational purposes. For comparison, 81.6% of respondents use school textbooks, while 61.5% use other books. The participation of the Internet in acquiring knowledge by postgraduate students remains high, especially in secondary schools. 93% of teachers working in primary schools declared using the Internet, while in high schools and technical schools these numbers were 98% and 99%, respectively. Among primary school teachers, using textbooks was declared by 80% of respondents, while 90% of respondents in high schools, 74% in technical schools, and 50% in vocational schools. On the other hand, the use of other books was important for high school and technical teachers, and small for teachers in vocational schools.

Based on the research, the use of other books as a source of knowledge was declared by 61.5% of the respondents, which means that most teachers still use them.

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