

E-learning Readiness of Organization and Employees

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Abstract—E-learning is a widely used form of education. There are various kinds of e-learning both from the implementing institutions' as well as from the learners' point of view. As the learners are of different professions and educations, e-learning requires an individual approach for each users' population. The effectiveness of e-learning has been researched, measured and proved as beneficial as other forms of learning, although the problem of readiness for learning activities which would employ modern means of education was not as high. The article presents outcomes of a research made among the group of social service workers in terms of their abilities to undertake e-learning education

Keywords—E-learning, social services, modern media education, self-education, e-learning readiness, ICT, ICT competences.

I. INTRODUCTION

E-LEARNING is currently a common form of self and organized education. It is often a tool of school and academic teaching as well as a method for upgrading employees' skills in companies. There is no precise knowledge about the ability and readiness to adopt this method of education in Poland. Many projects containing e-learning modules have succeeded. Self-learning with the use of ICT became a routine tool for many Poles. Is the Polish society e-learning ready? Which groups are best prepared and which are neglected? There are more unanswered question related to the e-learning readiness. The Polish society, as most of world citizens, consists of three groups in the terms of e-learning use and awareness: those who know and intentionally use e-learning; those who don't know it and don't use it; and those who don't know the term, the idea and the tools, but instinctively use the Internet as a tool for self-learning. The numerical amount of the each group is unknown. To some extend it is related to the age of the members of population. The digital natives are probably located in first and third group while digital immigrants in second one. [1] There are no exact data about the Polish population in this subject. The intensity and complexity of usage of ICT for learning is probably similar to the use of technology for other purposes. In other words - if one is use computer for writing, shopping, communication use it as well for the learning. From this perspective most of the Poles are e-learning ready, but to check if it is actually right – evidences are necessary.

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In the article, the Author undertakes the issue of readiness and ability to use ICT by Polish social services workers for self-development, particularly for organized e-learning. In order to describe the situation the research outcomes as well as the statistics will be quoted.

The readiness for e-learning is mostly researched in terms of organization capability. Before introducing this form of improving workers' skills the capacity of institution is tested and updated if necessary. The technical and organizational examination answers the question about the possibilities, feasibility and necessary changes to introduce. It usually has a form of an inspection, usually used in the process of introduction of any technological change. The human factor is often considered as the least important one or even not at all. People are an important driver and fundament of every change. The same rule applies to introduction of technology in the learning environment. Improperly prepared implementation can hinder any intended effect. Most of implemented changes are innovative for its surrounding. The weak background preparation could reduce the innovative effect.

The elements of the change management are strictly related to human resources policy. The assessment of the readiness of all stakeholders for the change and the constant 360o support of the process, together with technical preparations are absolutely required in every process of implementation on each it's stage. The technical abilities are just a part of the requirements. This applies also to e-learning education ventures. The areas of difficulty in implementation are: the technical means, the autonomy in the web use, e-skills, the level of social support and the motivation. [2] These fields are commonly are the points where expert intervention in the process implementation e-learning into organization is necessary.

Samantha Chapnick has created a model of e-learning need assessment. Using this model answers the questions if the e-learning can be introduced and how it can be introduced in the institution. [3] The model is focused on differences between e-learning and instructor-led types of training. The main distinctions are the scope – the scale of the venture, interdependence – more actors (workers from various groups of workers) are involved and visibility – all the mistakes of the education process and participants dissatisfaction are visible in the database, can be analyzed and used as an evidence. [3] Although the model is designed for the organizational use, its core elements apply also to the e-learning participants. The underlined factors are: psychological readiness; sociological readiness; environmental readiness. human resource readiness. financial readiness; technological skill (aptitude) readiness; technical competencies; equipment readiness and content

readiness. [3] Slightly different, but similar the model was prepared by Jeanne Schreurs, Ulf-Daniel Ehlers and George Sammour. In their model investigation of the readiness of organization for e-learning was focused on three areas: resources – technical, economic and human readiness; education - educational readiness and environment – cultural and mental readiness. [2] As mentioned before, many sides of this kind of readiness assessment apply to users readiness.

II. E-LEARNING READINESS OF THE POLISH SOCIAL SERVICES

On May 2013 there was the survey done on the population of 493 social workers. The objective of that research was to estimate if the Polish social workers are ready to undertake to improve their skills and extend knowledge using e-learning methods. (The study was made by Sergo Kuruliszwili in the frames of the project “Coordination for the active integration”) The research consisted of three parts:

The evaluation of computer skills and experiences.

- The evaluation of access to computers, software and infrastructure at work and at home.
- The assessment of social workers experiences in professional training in traditional and e-learning method.

The schedule was similar to the factors described by the Samantha Chapnick, however it was inspired by the tools used in the past for assessment of computer skills of the employees as well as the tools used for estimating factors supporting and limiting the e-learning process. (Education of gifted children teachers as an Internet based Distance Learning 1999-2001)

The research was carried nationwide. The material presented below has been selected and adjusted from the complete report which was published in 2014. [4]

III. SELECTED, SAMPLE RESULTS OF THE SURVEY.

Characteristic of the group by age of surveyed is as follows.

AGE OF SURVEYED POPULATION TOTAL BY AGE RANGES

	N	%	% cumulative
20-25 yrs.	17	3.4	3.4
26-30 yrs.	99	20.1	23.5
31-35 yrs.	78	15.8	39.4
36-40 yrs.	86	17.4	56.8
41-45 yrs.	69	14.0	70.8
46-50 yrs.	55	11.2	81.9
51-55 yrs.	62	12.6	94.5
above 55 yrs.	27	5.5	100.0
Total	493	100.0	

The majority of surveyed (70) declare that there is no need to improve their computer skills to start learning with ICT-mediated methods.

A question was asked about how the surveyed estimate their computers skills in certain defined tasks and applications.

A multi-item question with the ordinal scale allowing the surveyed to assess their ability to perform various tasks with the help of a computer. For analytical purposes and calculating central tendency measurement and dispersion, the choices on the scale were supplanted with numbers: “1” for “lack of skills”, “2” for “poor skills”, “3” for “moderate skills”, “4” for “good skills”, and “5” for “very good skills”.

COMPUTER SKILLS ANSWER DISTRIBUTION

	Lack of skills*	Poor*	Moderate*	Good*	Very good*
Writing a letter using a word processor	1.2%	2.4%	6.5%	26.2%	63.7%
Sending an e-mail with an attachment (i.e. with an image)	2.8%	3.9%	8.1%	19.3%	65.9%
Taking a picture with a digital camera and viewing it later on the computer screen	10.3%	8.1%	12.0%	19.5%	50.1%
Placing and sorting documents in folders and subfolders	5.7%	8.3%	12.2%	24.5%	49.3%
Using a spreadsheet to manage a budget	22.1%	21.1%	24.7%	16.4%	15.6%
Posting opinions on the Internet forum	7.7%	11.6%	17.2%	23.1%	40.4%
Prepare a presentation featuring simple animations	17.8%	18.5%	17.2%	20.9%	25.6%
Using the Internet for shopping and payments	7.9%	8.1%	11.2%	24.1%	48.7%
Finding useful resources on the Internet	2.0%	1.4%	7.1%	30.8%	58.6%
Initiating the cooperation among colleagues by using IT tools	8.7%	13.6%	24.5%	28.8%	24.3%
Installing software on a computer	20.9%	13.6%	18.9%	23.5%	23.1%

* Percentage of surveyed

Declared skill levels in using individual applications is good with the exception of spreadsheets and multimedia presentation creators. It supports the results of the question regarding the own task skill assessment.

HOW THE SURVEYED ASSESS THEIR SKILLS IN WORKING WITH THE COMPUTER APPLICATIONS LISTED BELOW?

	1 – low skills or lack of skills*	2*	3*	4*	5 – highly skilled*
Word processor	2%	3%	14%	37%	44%
Spreadsheet	18%	20%	32%	24%	7%
Applications for creating multimedia presentations	19%	17%	28%	24%	12%
Browsing the Internet	3%	4%	13%	33%	47%
Communicating through the Internet	3%	5%	13%	32%	48%

* Percentage of surveyed

There was also a question researching how the surveyed skills have been learned, and what kind of computer applications and e-sources they use.

HOW DO THE SURVEYED LEARN?

	N	%
Training courses	110	22.3%
From family and friends	201	40.8%
From books	39	7.9%
Self-education	387	78.5%
Other	12	2.4%
I don't have any skills	2	.4%
I don't improve my skills	15	3.0%

A very important way of upgrading the computer skills is self-education. The support of the family and friend is also crucial in the process of self-development.

WHAT RESOURCES AND APPLICATIONS DO YOU USE MOST WHILE WORKING ON A COMPUTER?

	N	%
Word processors	377	76.5%
Spreadsheets	144	29.2%
Databases	270	54.8%
Online encyclopedias and lexicons	233	47.3%
Websites	437	88.6%
Forums, chats	120	24.3%
Graphic design software (e.g. Paint, Photoshop, Gimp, Corel Draw, Inkscape)	75	15.2%

All kinds of Internet resources are used. Graphic design programs are the least represented group.

The main purposes of computer use are communication, information acquisition and entertainment.

WHAT IS YOUR PURPOSE OF USING A COMPUTER AND THE INTERNET?

	N	%
I create databases, sort and order information.	295	59.8%
I develop my interests browsing websites	451	91.5%
I stay in touch with family and friends (using e-mail, online communicators, social media, forums, or chats)	388	78.7%
I watch films or listen to music	283	57.4%
I use Internet resources at work/during studies	462	93.7%
I read e-books and e-newspapers	221	44.8%

The length of the experience in the computer use is an important factor in the analysis of the readiness for starting to use e-learning.

Almost three quarters of the surveyed (73.6%) have been using computers for over 6 years. Almost 15% have been using them for between 4 and 6 years.

The determinant - the absolute condition of effective use of multimedia in learning - is having a convenient access to a computer, software and the Internet. The questions concerning those issues have been asked. The process is efficient when there is proper infrastructure available at work as well as at home.

DO YOU HAVE FREE ACCESS TO A COMPUTER (AT WORK AND AT HOME)?

	at work		at home	
	N	%	N	%
Yes, and I use it	482	97.8	456	92.5
Yes, but I don't use it	1	.2	16	3.2
No	10	2.0	21	4.3
Total	493	100.0	493	100.0

Over 90% of the surveyed have free access to a computer both at work and at home.

There were also questions examining if the surveyed use a computer by themselves alone or if they had to share it with other workers or their family members.

A decided majority of the surveyed (over 85%) has a computer for their own personal use.

The answers to the question concerning the availability and quality of computers at work point out that the majority of employees is satisfied with the availability and quality of both computers and their peripherals, as well as with the quality of Internet connection. It further substantiates information found in previous answers and shows that the surveyed are prepared to start learning using the e-learning methods. The lowest scores were received in the availability of the peripherals (printers, scanners, digital cameras), but they are not a substantial requirement for implementing the e-learning methods.

The Internet connections have also been graded as good. Most answers pointed to good or very good connection (almost 70%), the average connection was reported by 26% of respondents. Poor and very poor connection speed was reported by less than 5% of the surveyed.

The technical needs and requirements were met at the satisfactory level.

As long as the e-learning – in life long perspectives’ requirements –is the process that currently should be implemented in all our daily activities. That is why the time one’s spend behind a computer or use a mobile device is important.

The question concerning that issue was asked.

In a typical day of the week, how much time do you spend working on a computer?

IN A TYPICAL DAY OF THE WEEK, HOW MUCH TIME DO YOU SPEND WORKING ON A COMPUTER?

	at work		at home	
	N	%	N	%
I don't use it	4	.8	34	6.9
less than 1 hour	30	6.1	181	36.7
1-2 hours	84	17.0	192	38.9
2-4 hours	222	45.0	72	14.6
over 5 hours	153	31.0	14	2.8
Total	493	100.0	493	100.0

Most respondents use computers over 2 hours a day (76%). It is over ¼ time spent at work – with almost a third of the group (31%) spends over 5 hours a day behind a computer. The time spent using a computer at home is usually between 1 and 2 hours a day (56.3%). It further substantiates results of previous questions – that the computer has become a universal and frequently used tool both for work-related and leisure time activities.

The outcomes presented below contain the bit of information about the tested people’s knowledge and attitude toward e-learning as the educational method.

HAVE YOU MET WITH THE PHRASE “E-LEARNING”?

	N	%
yes	365	74.0
no	128	26.0
Total	493	100.0

Not only the learners’ attitude, but also and the psychological comfort is critical for the efficiency of this kind of education. Anxiety or mental barriers could be the factors decreasing the effectiveness of learning and in some particular situations could even cause drop-outs or failures.

The choices of answers to this question confirm lack of hardware and competence barriers (1, 2, 4) and an awareness regarding the need of high level of self-discipline, motivation, systematicity and planning one’s own learning schedule (7, 8, 9, and 10). Nearly one-third of respondents (29%) have no fears regarding the e-learning.

ACCORDING TO YOU, WHAT ARE THE MAIN ADVANTAGES OF E-LEARNING?

	N	%
Individualization of content	123	24.9%
Individualization of teaching speed	318	64.5%
Permanent access to educational resources	325	65.9%
Forming an active attitude in managing one’ own education process	158	32.0%
Acquiring new work-related skills	211	42.8%
Building one’s self-discipline and habit of self-education	223	45.2%
Improving skills of effective time management	168	34.1%
Learning of how to educate oneself using the Internet	231	46.9%
Multimedia resources (images, animations, videos, sounds, simulations) and varied activities	149	30.2%
Interactive personal contact with the teacher	108	21.9%

There was a question related to the anxiety on undertaking the learning with the distant education methods.

THINKING ABOUT YOUR PARTICIPATING IN FUTURE E-LEARNING COURSE, WHAT DO YOU WORRY ABOUT MOST?

	N	%
The IT infrastructure at my work is not adequate.	45	9.1%
I have inadequate IT skills.	135	27.4%
I do not have enough self-confidence to meet new challenges.	46	9.3%
I do not have access to IT tools at home.	31	6.3%
In case of problems, I won’t be able to count on technical support of other people.	93	18.9%
I won’t have time for additional learning activities.	134	27.2%
I lack motivation for learning independently.	38	7.7%
I lack self-discipline.	77	15.6%
I am not systematic.	84	17.0%
I lack skills for planning and managing my learning time.	21	4.3%
I am not worried.	143	29.0%

The answers show relatively high level of predispositions of social workers for learning which bases on self-learning activities.

The surveyed describe themselves as eager to explore new areas of knowledge, persistent, conscientious, able to study independently, systematic, and disciplined. They are able to solve basic IT problems independently. Reading information on the screen is not an issue for them. Those characteristics are very influential with regard to effectiveness of distance learning methods.

Self-education and learning using modern media technologies without or with limited support by the other person require some special features of character. In the survey there was a part dedicated to estimation if those features of character exist among members of the surveyed group of social workers.

DO YOU AGREE WITH THESE STATEMENTS?

	1*	2*	3*	4*	5*
I eagerly undertake independent searches regarding new areas of knowledge	2.6%	5.3%	14.6%	45.8%	31.6%
I can work for a long time on an issue which I am interested in.	1.4%	3.9%	8.3%	48.5%	37.9%
I try to be conscientious in working on the tasks I am given.	1.4%	1.4%	3.2%	30.4%	63.5%
I am a disciplined person and I always finish what I started.	1.2%	2.4%	8.5%	43.4%	44.4%
I usually work better by myself than in the group.	3.2%	19.1%	31.4%	33.9%	12.4%
I sometimes do even tedious tasks despite being weary and tired.	1.8%	8.9%	15.4%	56.6%	17.2%
Information in my computer are ordered in the form of files and folders.	2.4%	5.9%	13.4%	41.0%	37.3%
I can cope with basic technical problems with my computer.	5.1%	14.4%	17.0%	41.2%	22.3%
I like setting my own tasks and decide about their deadlines and form of their completion.	1.4%	6.9%	19.9%	47.5%	24.3%
Reading even long pieces of information on the screen is not an issue for me.	8.9%	18.3%	17.0%	34.9%	20.9%

* Percentage of surveyed; 1 - I strongly disagree, 2 - I quite disagree, 3 - I neither agree nor disagree, 4 - I quite agree, 5 - I strongly agree

From those questions which are related to declarations of the respondents regarding their character traits such as carefulness, conscientiousness, self-discipline conditioning the self-learning, and the respondents' evaluation of their skills in performing certain groups of tasks using their computers, a new variable ("predispositions") was created. The variable has the value range of 10-50. It has been analyzed using the measure of central tendency and dispersion as well as numerical and percentage dispersion of answers in five ranges forming 5-level scale: "very weak" (10-18), "weak" (19-26), "moderate" (27-34), "good" (35-42), "very good" (43-50).

IV. THE OUTCOMES

The majority of respondents declare the knowledge of the term "e-learning". This declared knowledge finds partial confirmation in pointing out proper advantages and disadvantages of this method of learning.

Most of the surveyed have not taken part in such way of improving their job skills.

The availability and quality of computers and Internet connections is good or very good both at work and at home. The barrier related to equipment, which existed only few years ago in case of many occupational groups in Poland, has virtually vanished in case of the surveyed group of social workers. Computers and high quality Internet connection are available both at work and at home. This suggests that it is possible to use flexibility regarding time of learning, which is its main advantage.

Practical competency of the surveyed are high enough to undertake their education using modern IT-based distant learning courses. Declared skill levels regarding individual application types and their relative freedom concerning performing various tasks using a computer – also typical for the e-learning education – also points out in that direction.

Using a computer at work and at home is a part of a normal daily routine. The respondents use them for work and/or leisure for a few hours a day. The surveyed look for information and solve problems using Internet-connected computers. The intersection of work, education and leisure activities lies at the core of the e-learning.

The answers show positive attitudes towards new method of education. Despite common opinions about low effectiveness of distant education (in the beginning while facing then-existing infrastructural and competency deficits, the e-learning effectiveness was indeed much lower than nowadays), a half of respondents points to equal or higher effectiveness of e-learning compared to traditional methods. The opinion regarding high effectiveness of such educational method fosters the motivation to undertake and continue one's education using this method.

The surveyed pointed to proper advantages and disadvantages of distant learning. This proves that they have some rudimentary knowledge regarding this way of learning. In connection with the belief about its effectiveness shown by the half of respondents, this makes a good prognosis regarding future education of social workers using Internet distance learning.

All answers to the questions show that the surveyed employees of social services are easy to undertake education using the e-learning. They have access to the proper infrastructure. They have IT skills allowing them to learn using modern forms of distance education. Their attitudes towards e-learning and opinions on its effectiveness are not a barrier for beginning to learn using this method, and a noticeable habit of using electronic media can be an element which strongly supports the education process.

V. ITC IN POLAND AND IN THE WORLD

The question remains if the computer skills, motivation, attitude and some abovementioned personal traits of the tested group of social workers can be extrapolated to other professional or social groups. According to the Polish Information Society in Numbers 2014 report, about 60% of the Polish population has low or none computers skills (they are

able to do at most 2 simple computer tasks). The Internet literacy is nearly at the same level. The persons of computer skills are related to education and age. The best skilled are people < 55 years old and those well-educated. However, the good results of the surveyed group (social workers) is not in contradiction to this data, as 80% of the sample were under 50 years of age, and most of them have higher education. [5]

The general skills in the TCT use in case Poles are at the lower level than the OECD average in all age cohorts. [5] Despite the general use of the Internet is rapidly growing, it is still lower than other EU countries. The average use of the Internet at work by Poles was 4.4 hours per week while, for instance, in the USA it was 10.5 and in Russia - 15.5. [6] In 2013 about 63% of the Polish population used a computer and the Internet, 25.1% - smartphone. 21.9% didn't have and didn't use computer and internet at all, 14.9% possessed it but declared that didn't use any of them. [7] Having the access to the internet is also not as obvious as it seems to be. In 2013 there were 6 million of optical fiber broadband subscriptions and 22.4 million broadband subscriptions total. The average connection speed in Poland is 8.8 Mbps while in France it is 7.1 Mbps, in Austria – 9.8 Mbps, in Sweden - 14.6 Mbps; in Switzerland - 14.5 Mbps, and in the Czech Republic – 12.3 Mbps. Poland is not last on the list but still there are many countries to catch up with.

This brief analysis leads to the conclusion that the ICT skills of Poles are at a satisfactory level, however they vary significantly in social groups. The members of the surveyed group are ready and willing to learn using the ICT means. Generally, the access to the Internet is at the level which enables the use of it as a medium in the process of distance education. The access to computers and mobile devices meets the e-learning requirements. However, the readiness for e-learning is not at the same level in all social groups.

VI. CONCLUSIONS

There is no precise answer the question if the Polish are ready for the e-learning. However, according to the research outcomes, the social services are ready for the e-learning education. Technically, mentally and in the terms of their computer skills. The statistics presents the bright picture of the Polish society. The majority of the population have computers with an Internet access and use them. Nevertheless, individual social and professional groups could differ in this regard (as 60% of the population have low or no computer skills). In the process of e-learning implementation, the assessment of the potential is necessary. Each target group should be tested before beginning the process of supporting them using ICT means. The brief test of computer skills, meeting the technical requirements and participants motivation should be a part of each preparatory process. That is the current situation, as generations change and technical development goes forth, such tests will hopefully become unnecessary in the near future.

VII. REFERENCES

- [1] M. Prensky., "Digital Natives, Digital Immigrants." in *On the Horizon* - NCB University Press, 2001, vol. 9, no. 5
- [2] J. Schreurs, U. Ehlers, G. Sammur, "E-learning Readiness Analysis (ERA): an e-health case study of e-learning readiness," in *International Journal of Knowledge and Learning*, vol.4 no.5, 2008, pp. 496-507.
- [3] S. Chapnick, "Are you ready for e-learning?" in <http://www.learningcircuits.org/2000/nov2000/Chapnick.htm>.
- [4] S. Kuruliszwili, „E-learning w kształceniu służb społecznych,” Warszawa: Centrum Rozwoju Zasobów Ludzkich, 2013.
- [5] V. Szymanek, „Społeczeństwo informacyjne w liczbach,” Warszawa: Ministerstwo Administracji i Cyfryzacji - Departament Społeczeństwa Informacyjnego, 2014.
- [6] J. Cole, M. Suman, P. Schramm, E. Zhou, L.Reyes-Sepulvedation, "The World Internet Project. International Report – Fifth Edition," <http://www.worldinternetproject.net/>, 2013.
- [7] J. Czapiński, T. Panek, „Diagnoza Społeczna,” Warszawa: Centrum Rozwoju Zasobów Ludzkich, 2014.