LEARNING WITH THE NETWORK-ASSISTED CULTURE OF TRUST

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Abstract: The article presents the results of the research showing the conditions for creating a culture of trust among Internet users. The research was conducted in 2013in Poland (Zachodniopomorskie province) and Russia (Kaliningrad District). This paper presents a fragment of broader research conducted within the research project SIT – S*timulators and Inhibitors of Culture of Trust in Educational Interactions Assisted by Modern Information and Communication Technology* under the grant in the 7th Framework Programme, Marie Curie Actions, People, No. 318759, implemented in the period between 01.02.2013 - 02.01.2016. Partners in the project include scientists from Poland, Russia, India, Italy and Norway.

Keywords: culture, trust, education and self-education, network

Introduction

In the past few years, people have been witnessing the emergence of a specific form of culture of computer and network age, which breaks the traditional divisions and historically established areas of practical and theoretical human activity (Zamojski, 2010, p.41). On the one hand, there is a need to improve the tools of technology, and on the other hand, to look for ways to make use of their value. Continuous dynamic of change, faced by people while entering into life the products of technology, makes "normal" tools, such as the Internet, a computer, a tablet, a smartphone, etc. and related technology, to become a "humanized" partner of everyday life. And this partner changes the perception, comprehension and understanding of the world around also in the educational space. Therefore, in the situation of the new requirements in relation to the Internet available on digital devices as a place of education and self-education, it is necessary to reflect on what is that place and what conditions must be met to make it an educational environment of social trust.
Knowledge and information have been a crucial aspect in many, if not in all, historically known societies (Castells 2004, p. 138). Currently, it is also a characteristic of the network society,

modeled by the mass media. Internet and digital technology itself does not change the structure and mentality of man, but it "mixes" in the culture, religion, politics and the economy by introducing the material, symbolic and social relationships. And they form the basis for the growth of future generations and shape the globalizing character of a man. Can we trust a digital network and ourselves in this network? Or should we rather be afraid of digital network or being in that network? There are both "yes" and "no" answers to these questions. W.J. Bober rightly said that the technique involves the use of tools, and the tool itself is neither good nor bad: guns do not kill, people kill (Bober, 2008, p. 19). What is the awareness of the use of the Internet? Is it the same in pupils and students called by M. Prensky "digital natives" and parents, teachers (called "digital immigrants") (Tapscott, 2010, p. 46)? What image of the culture of trust is shaped through education and self-education by using a digital network in the first and the second group?

Theoretical considerations of research

The new generation that E. Bendyk described as "Web-kids" works perfectly in the new social space, which is cyberspace. D. Tapscott characterized them as a generation that

primarily appreciates freedom and freedom of choice. These are people who want to adapt things totheir needs and customize them according to their preference. They have a natural tendency to take joint action, they are in favor of dialogue and they reject what is spoken *ex cathedra*. They carefully scan co-workers and the organization. They require reliability and want to have fun, even at work and school. For them the fast pace is normal, and innovation is an inseparable feature of life. (Tapscot, 2010, p. 45-47)

The approach of D. Tapscott to the new generation is full of reflection as he notes that the attitude of web-kids to new technologies is different, more courageous and open than of the "digital immigrants" (including teachers), which was also pointed out by K. Wilber (2010, p. 26). The generation of "digital immigrants" is characterized by certain patterns. It can be said that these are sequential activities – from beginning to end. Everything has a beginning, middle and end, its rhythm, space and order. With the advent of a new era of digital information, which is dynamic and variable, there is being created a new culture of being and living in the digital network. The project described in this paper only in its small fragment, is an image of the culture of trust in the digital network and each other in this network.

As every culture, a culture of trust has its own structure. The following elements of a culture of trust have been selected: personal, normative and content-based elements. The research discussed the first of them, which applies to participants of educational interactions, both direct (face to face) and indirect ones, through the media. And these are the learners and teachers.

Culture of trust in educational interactions is the most complex and important phenomenon in education. It can be seen in at least two dimensions, namely: 1) formal, which consists of norms and rules governing social relations at school, in the classroom, formal positioning of the status and content of educational messages that can be easily observed; 2) informal, consisting of the behaviour of participants in educational interaction with their roots in other sources and circumstances of experience. These two dimensions are complementary, and it must be remembered that each of them has its own characteristics, mainly due to the content and structure of the elements constituting its nature.

Research methodology

The cognitive objective of SIT project is to describe, interpret and explain the characteristics of culture of trust in educational interactions with the use of ICT. In the first year of the project, the research was conducted in educational institutions in Poland and Russia. The place of research included schools and universities, which use ICT. These were primary schools (according to ISCED and EQF classification dated 10.01.2014: the first and second level of education), lower secondary schools and upper secondary schools (third and fourth level of education) and universities (fifth – eighth level of education). Tables 1, 2 and 3 present the detailed list of schools/universities, which participated in the research.

Table 1. Number of schools/universities in the research

Type of a school/Level	Number of schools/universities Poland	Number of schools/universities Russia
Elementary school - I-II	6	2
Lower secondary school - III	4	2
Upper secondary school - IV	4	2
Universities - V-VIII	3	1

Source: own study

Table 2. Number of teachers in the research

Type of a school/Level	Number of teachers Poland	Number of teachers Russia
Elementary school - I-II	18	15
Lower secondary school - III	9	10
Upper secondary school - IV	9	5
Universities - V-VIII	23	9

Source: own study

Table 3. Number of pupils/students in the research

Type of a school/Level	Number of pupils/students Poland	Number of pupils/students Russia
Elementary school - I-II	301	415
Lower secondary school - III	159	380
Upper secondary school - IV	143	165
Universities - V-VIII	403	129

Source: own study

Case study method applied in the project allowed for the purposeful selection of schools, where it was possible to carry out the research on the structure of culture of trust in educational interactions. The research has been conducted in schools that are highly equipped with digital devices, which means that pupils/students and teachers have access to the equipment and multimedia tools (computer, interactive whiteboards), there is a broadband connection and a virtual social environment (web page, electronic log, network communication with parents, etc.). The research included the cumulative quantity and quality approach. The collection of quantitative data included the use of questionnaires, the content of which has been developed with the participation of all partners in the SIT project. The survey participants included pupils, students and teachers from schools and universities. Qualitative research has been conducted by partner teams – participants in SIT project and with the use of observation techniques according to the previously settled scheduled.

Types of digital devices used in learning

Using Internet resources can take place in many ways and in different places. This can be done at work, at home, while preparing for lessons/classes at the university and performing tasks during the formal/non-formal educational interactions – in a classroom, lecture hall and laboratory. Table 4 presents the types of equipment used in the learning process in the researched groups, divided by pupils and students.

Tab. 4. Devices used by students in the learning process (by level of education)

Type of a device	Pupils %		Students %	
	PL	RU	PL	RU
desktop	44,41	39	24,32	18
laptop	62,50	14	83,87	36
tablet	25,66	19	8,19	13
mobilephone/smartphone	43,42	17	22,33	23
mp3/mp4	9,05	4	3,72	6
other/which?	16,28	7	4,22	4

Source: own study

The list of digital devices has been prepared on the basis of the responses of pupils and students in the survey and during the class observations conducted in the classrooms and lecture halls. On the one hand, the use of desktops and laptops is conditioned by reforms aimed at developing the information society and preventing digital illiteracy, and on the other hand, by modernization and miniaturization of digital devices. This can be seen when looking at the number of laptops used in the execution of tasks by pupils/students. Polish schools are dominated by the operating systems running on PCs. Only in one school included in the research students use Macs with OS X and iPad tablets. Russian schools are equipped with Macs, however, pupils in those schools use Windows and OS X. Teachers choose the most beneficial system depending on the program they want to use in the educational process.

There has been noted a tendency of schools changing to smaller mobile devices such as a laptop, tablet, smartphone, which can be observed already in the more advanced countries, such as the United States. According to the UNESCO report ((David Souter: *Towards Inclusive Knowledge Societies: a review of UNESCO's Action In Implementing the WSIS outcomes,* UNESCO, Paris 2010, p. 57), both in Poland and Russia all schools have access to telephone communications, but only 80% in Russia have accessto Internet. In Polish school there is an average of 17 computers, in Russian school there are 15 computers, while in Finland 55. It should be remembered, however, that the percentage of rural schools is greater in Russia (61.3%)than in Poland (43.7 %,) and in Finland this percentage is even lower (30.85).

Changes that occur as a result of tool and software infrastructure development cannot be solely concentrated on the technical side of the use of ICT. Access to the Web 2.0 allows to expand the sphere of education, in particular the exchange of information and the acquisition of new messages; but above all, it gives the possibility of free communication and exchange of views. The statistics show that there the digital divide and disappearance of digital white spots has not ended. However, there is the end

of the digital tool divide and the new forms of digital illiteracy (which resulted in the development of phishing, pharming, cyberbullying, Internet addiction disorder and others) resulting from the digital culture of trust. Digital divide affects the elderly. We can talk about generational counter and it does not refer to the region of the world, but to specific groups, including e.g. teachers.

Using network resources in learning at school

The number of hardware in schools does not translate into changes in methods and techniques in the educational process. In contrast to their students,teachers have less trust in digital tools and their educational potential. This is still linked to digital and information competence (Perzycka, 2008), particularly with a limited knowledge of the specific functions of individual mobile devices, the diversity of applications available for these devices, and the lack of knowledge of the criteria for assessing the content of web pages. Table 5 presents the digital tools used by the teacher in the educational process.

Tab. 5. Devices used by the teacher in the educational process (by level of education)

Type of a device	Elementary and Lower secondary school %		Upper secondary school/Universities %	
	PL	RU	PL	RU
desktop	0	24	36,36	0
laptop	83,33	56	90,91	53
tablet	36,11	32	22,91	13
mobile phone/smartphone	27,78	0	22,27	7
other/which?	0	31	63,65	13

Source: own study

The development of the Internet as a social space raises questions about the importance of trust in virtual contacts. The trust is created on many levels: personal, group, institutional and symbolic. Attention is directed here towards cultural variables, as well as trust in yourself and others in the network. In such a situation the analysis should cover the relationship of trust with risk and uncertainty. Such uncertainty

is inherent in the school community, especially among teachers. They were asked what sources of Internet they use. Both teachers in Polish and Russian schools named primarily those that help them in pedagogical and professional issues. However, there is a lack of educational websites.

Tab. 6. The list of website used by teachers

Addresses of websites	
Teachers in Polishschools	**Teachers in Russian schools**
www.interklasa.pl	www.e-xecutive.ru
www.sieciaki.pl	www.alexlarin.net
www.ece.edu.pl	http://www.gnpbu.ru
www.scholaris.pl	http://www.rsl.ru
www.edukacja.ne	http://center-laa.ru
www.edulandia.pl	http://www.edu.gov39.ru

The qualitative part of the research showed that the students in both Polish and Russian schools use computers and the Internet only during lessons after logging in with the password provided by the teacher. However, they do not use websites listed by the teachers (Tab. 6). These websites help teachers to prepare for classes in terms of methodology and not of content. They are not websites, which support learning of issues presented at different subjects. Teachers use ready-made presentations, which are provided with methodological books and textbooks or prepare those presentations themselves.

The results of observations shed light on the category of standards, linkages, networks and their impact on social and emotional development of pupils and students. Cognitive development is the development on which school and teacher focus their attention. A teacher decides on the eBook that will be used and the website that students will visit for information during the lesson. At school this is the teacher, who decides on the place occupied by the student in the digital space. This means that the mobile device, despite the fact that it enables modern and fast support in education and self-education, does not inspire trust in teachers as a common teaching aid. This is in contrast to students, who use the Internet, above all, to learn. They enjoy using message boards and blogs, treating them as interesting sources of knowledge. However, they are only passive recipients, as active participation would require them to have above-average motivation, greater commitment and passion. Lower secondary school students perceive themselves as people who do not have sufficient knowledge to provide others in the network with their resources. They are the group of so-called surfers. They do not trust their knowledge, but trust knowledge of others in the network. They will find it easy to clearly describe the attitudes of students and teachers to the use of the Internet at school, but it will be harder to do it in relation to the use of it outside of school. The school does not develop critical expertise on valuation of Internet content, because teachers do not create conditions for it. Thus, can and/how can students handle outside of school if they do not know what is trust in the digital network? When do they deal with the valuable and educationally useful information, and when with the destructive force of a young psyche?

The computer and the Internet provide a whole spectrum of choice of one's own actions and those of interaction partners. And this is possible when the network access is free and unrestricted. The respondents were asked about how often they turn to network resources during classes at school and university. Fig. 1 shows received answers.

The experiences of teachers and students in the use of digital tools in the learning process at school are not uniform. Teachers declared the greater frequency of use of digital tools than their pupils and students. What does it mean? Attention should be paid to the incidental nature of using digital media in school and university education. This is surprising, especially due to the fact that many of the research participants use digital devices, including mobile ones. Therefore, the lack of equipment in classrooms and lecture halls is not an argument explaining this incidental nature. Perhaps the source of this state of affairs is rooted in the traditional, if not the ritual, organization of work in the classroom and lecture hall with predominant *face-to-face* relationship, where the teacher and the "paper" book are still the primary source of knowledge

and competence. There are slight differences between pupils and students in the use of Internet resources to do homework. As shown in other studies in Polish schools (*Nowe media w polskiej szkole,* 2013) homework that requires the use of Internet is given very rarely. Every fifth teacher does not give such homework at all. The teachers explain that the reason for this
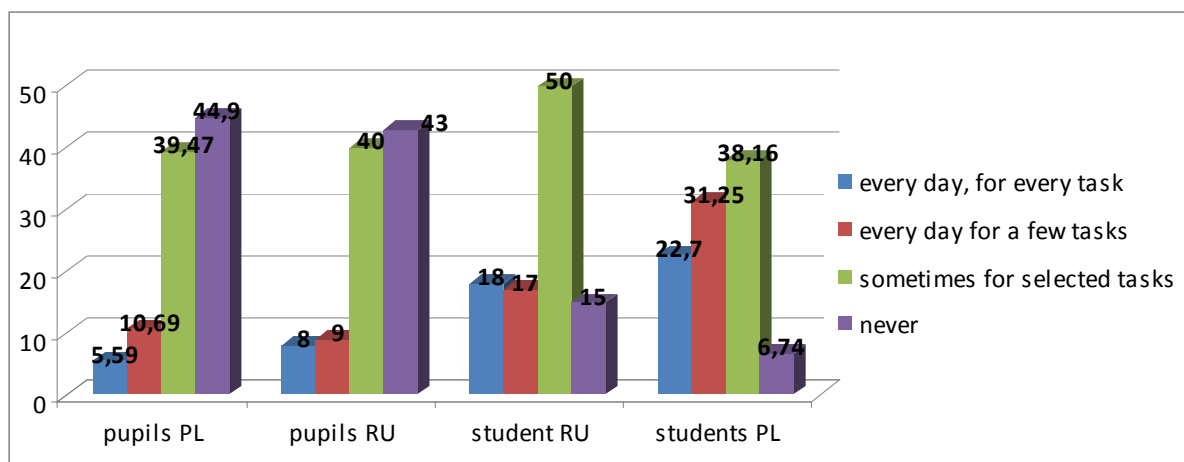

Fig. 1. Using the Internet during school/university classes. *Source*: own study.

is the assumption that pupils will copy the materials from the Internet and that learners have low media competence. Both reasons emphasized by the teachers show the lack of trust in the pupils, their honesty and/or competence. Such a situation forces to treat digital media with caution as material and behavioural artefacts of culture of trust in formal educational interactions taking place in the classroom. Another reason for this state of affairs may be distrust of teachers to what may be encountered by the students on the Internet. Teachers express the need for caution and moderation in the introduction of digital media in education. Their concerns relate primarily to the risks of the safety of students using the network resources and the skills of students in searching for the relevant sources of information (Report *Media w polskiej szkole*).

Using network resources in learning at home

Pupils and students were asked how often they use the Internet at home while learning. The results are different in relation to the frequency of use of the Internet at school in the context of learning. It has been found that Internet access in households facilitates learning and preparation for school/university classes. This

is shown by statements of the participants of the research, which are presented in Figure 2.

It is difficult to clearly describe the attitudes of pupils and students to the use of the Internet in the context of learning at home. It can be stated that these attitudes are conservative. On the one hand, a few students, both in Poland and Russia, declare that they do not use the Internet and a large group declares that it uses the Internet sometimes. On the other hand, over half of students prepare at least one task with the use of the Internet every day.

Attitude towards the content on the Internet varies depending on what or who motivates the use of its resources. More frequently than pupils of primary and lower secondary schools, and more often than teachers, pupils of upper secondary schools and, above all, students become creators of content posted on discussion forums, particularly social networking sites, such as: Twitter, Facebook, LinkedIn, etc. both in Poland and Russia. Respondents participating in the qualitative part of research devoted a lot of space to Facebook. They use it not only on a computer, but most of all on smartphones. Social networking sites provide many features to their users. According to them, they are an invaluable tool for communication, also for obtaining information regarding learning. Moreover, they are the way of spending free time. Pupils and students use

these sites to exchange addresses of websites with useful content, including educational ones (information and cognitive function). They use them to share their photos, videos and resources, which gives them a lot of joy (information and entertainment function).

Especially, they emphasize the occasional participation. This includes commenting posts added by friends. For many of them liking is the optimal type of activity on the Internet (information and communication function).
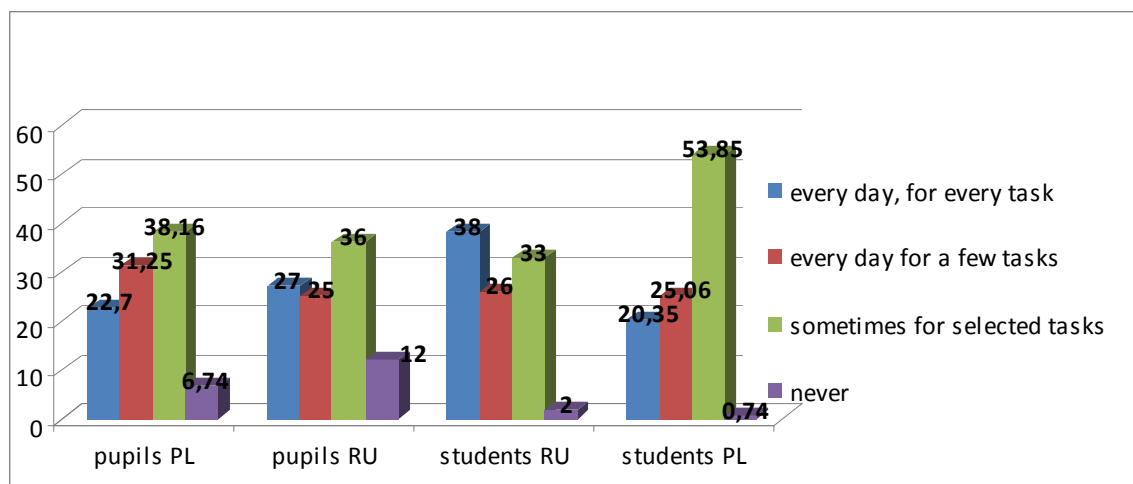

Fig. 2. Using the Internet at home. *Source*: own study.

For research participants, the argument explaining the activity on the social networking site was primarily conditioned by belonging to a group and the possibility of sharing their feelings (joys and sorrows). Respondents who do not have their pages explain this by fear of the lack of acceptance, rejection or ridicule. They limit their network activity to liking. They are less confident and therefore they trust less. They often faced violence in the network. In this place particularly important seems to be the issue of assessing the value and credibility of information on the Web. It should be noted that the vast majority of young people use many resources available on social networking sites, keeping the distance through the comments given by them and other users. And more than half of the users use a nick or a pseudonym.

Development of digital tools and technologies is the source of change in the education and self-education process. Heading towards the future development of the information/network society, we cannot forget the inspiring heritage that teaches us about the benefits of interdisciplinarity, the merits of combining theory and practice, *vita activa* and *vita contemplativa*, fascinating relationship between

reflection and technique, using different types of interfaces and popularizing its effects (Barbrook, 2007). Digital information environment forces its users to the continuous networking and interactivity. Extremely important in such a situation is the adoption of patterns learned from the parents. The level of digital literacy and language skills, which is the cultural capital, is subject to reproduction under the influence of the family and other reference groups. This will include the school environment, but also the digital network environment, especially – social networking sites with the phenomenon of *prosumption* (production and consumption in one term), which is an important aspect for the emerging culture of digital trust.The roles between the sender and the recipient in the network become blurred. We can talk about the phenomenon of *sendceiving* (sending & receiving). Culture flows in the network through digital tools. On the one hand, it is a dispersed culture, and on the other, it is acommunity. J. Habermas (1999) speaks of communication community. And it can be said that it is a culture of social action – interactive culture. Intersubjectivity and collective integration lead to a mutual

agreement based on freedom. This culture creates new identity and starts the process of redefining the understanding of trust in You and other persons, things and conditions. Research carried out under different economic, political, religious and educational conditions makes it possible to recognize and describe the culture of digital trust that is currently emerging. Prosumer can reach any prosumer, and each user can reach any concurrent user. Anyone can create their own unique world or filter the existing one through one's own system of values. On this basis, people may create their own representation; each pupil, student, teacher can personalize the digital space. More digital tools mean more digital activity. The bigger the number of digital activity, the bigger the number of social events, called Web-native. They emerge and exist through cyberspace and they represent the added value of cultural technology.

Therefore, the culture of digital trust will be created by the users of digital tools – it will be the culture of self-regulation. Teachers and parents should do everything, so that this culture is created in the school environment, and not in social networking sites. Therefore, the crucial role plays critical reflection on communication and information in the digital learning.

Summary

Relationship between the school and the use of digital tools in education and self-education goes far beyond the boundaries of classrooms and computer rooms. The Internet is a place primarily for the acquisition and dissemination of information.The data contained in Fig. 1 and 2 raise observation that ICT is revolutionizing learning in many different places, besides the classroom and lecture hall. It is possible that at home, learners can access a richer range of resources, which is less controlled. Another hypothetical explanation may be found in culture of trust. The use of network resources means learning in many ways. Quite a few of them are associated with experiencing failures and errors. People experiencing that prefer not to disclose their imperfections. Incorrect performance of the task is more difficult to be hidden in the classroom/lecture hall than at home. It is easier to test our own competence without the control of others and without the risk of being assessed or, especially, criticized.

Such behaviours are specific to culture of distrust, but they may also promote the formation of self-confidence.

The use of ICT in the educational process at school and self-education at home (stimulating/facilitating or hindering) has significant influence on shaping the culture of trust in the human development, and thereby it influences social change. This is particularly important in the context of the scale of the use of the Internet in everyday life and in the perspective of the concept of the learning society. As stated in the report *Survey of Schools: ICT In Education. Benchmarking Access, Use and Attitudes to Technology in Europe's Schools* (2013 p. 16): "the use of ICT by students during the lesson is still much smaller than its use outside of school" (2013 p 16). It provokes students to experience life in parallel worlds: the world of everyday life in a natural environment, where they can enter into relationships with certain aspects, people, places and issues, and abstracted one, detached from the natural world of school education, in artificial reality, which is dominated by the principle of learning not for the life but for the school. (Czerpaniak-Walczak, Perzycka, 2013). In this place particularly important seem to become the issue of assessing the value and credibility of information on the Web. It should be noted that the vast majority of young people use many resources available on social networking sites, keeping the distance through the comments given by them and other users. They acquire critical competence, but in informal situations. Is it enough to properly assess the value/usefulness of content found by the young person on the Internet?

On the basis of the presentation of just a part of the empirical data collected in the field of trust in the personal digital media the following points should be stated.

1. Understanding the cultural context of the network environment helps to understand who is the person providing information, what this information means to one, why it is important or not, because not all signals, signs or symbols, not any perceived or created image, not all heard statements or read sentences and not every knowledge acquired, is valuable in the same way.

2. Full and uncritical trust to the people in the Internet and information they provide introduces its users to cognitive chaos.

3. It should be necessary to improve information skills of the network society of teachers and pupils/students at every level of education.
4. It is reasonable to develop critical competencies of students in relation to the content on the Internet in the formal learning.

5. Trainings for teachers in the field of valuable use of digital resources in education and self-education should be organized.

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