



EXPERIMENTS REGARDING A GAP BETWEEN THE PERCEIVED AND THE ACTUAL STATES OF THE DIGITAL LITERACY

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ABSTRACT The main idea of this article is to describe the most important parts of digital literacy experiments and also to show the gap between the perceived and the actual states of the digital literacy. Nowadays it is very important to proceed all tasks in time and make right decisions, so we can say that digital literacy helps us to solve a lot of problems in our business and perform almost all tasks faster. A lot of work depends on using computers correctly and if we want to check some people's skills, testing is one of the most practical ways to do that. There are two experiments described in details: the first one was dedicated to teachers and the second one to students.

Keywords: Digital Literacy; ECDL Certification; IT Skills; Computer Testing; Information Technology.

Short title: Digital Literacy Experiments

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Introduction

The Information Technology has become an important part of our everyday life and changes the way of our living *via* the Internet. Internet today has become the main source of information that can be reached by everyone. Many traditional services are being replaced by their electronic counterparts. Besides, it is not only a communicative way, but it also saves resources of a company. A person who has enough information at the time when he needs it most has much more chances to succeed in his business, to make a right decision and improve the business quality.

This tendency faces a barrier i.e. capability of citizens or the labour force to understand and use different kinds of Information Technology. The digital literacy as the confident use of Information Technology for work, communication and leisure has become extremely important for everyone of us. Organizations also communicate between each other and we can not imagine this communication without using Innovative Information Technologies.

Digital literacy can help us to solve different business problems faster and better. But this also depends on how people are prepared to use information and information technologies in a company. That is why we should induce our employees to learn more about digital literacy and its advantages. People should compare their skills before learning and after learning, so it would help them to understand the difference between the actual and perceived states of digital literacy. Everyone can say that his/her skills level is either very high or poor but nobody knows how actually it is. Here in the article some experiments will be described in more details. As a result of experiments, we will be able to compare different opinions of students and teachers.

1. Digital Literacy programme and surveys in Lithuania

The Government of the Republic of Lithuania approved the General Computer Literacy Program on 15 September 2004. The State assumed the task of developing and supervising the digital literacy of the population as very important. This programme also covers a digital literacy researches in Lithuania [1]. It is proposed to perform a continuous monitoring of the general digital literacy, which is considered to be an efficient and indispensable tool of the progress assessment. That is why such researches have been analysed there for three years already [2]. The method of a questionnaire survey of the population was chosen to perform the researches. These surveys dealt with the part of population that can be described as an active, creative part of the society (citizens aged from 16 to 70).

The researches performed at the end of the years 2004, 2005, 2006 and 2007 reveal a rather high level of computer literacy among Lithuanian citizens. Approximately 50 percent of Lithuanian citizens who participated in the survey in year 2005 claim to have achieved a good level of digital literacy. The results of the last two years show that the situation has improved even more. But the results can be unreliable, because respondents might have chosen the most significant answer and we can not verify the results in practice.

How can we know that a new person in a company has enough skills and will be able to succeed in his duties? How can we

know that we think in a right way? The level of a digital literacy can be assessed in the different ways. One of such ways is a self-assessment questionnaire where people choose the answer according to their own opinion. In reality, it is very difficult to rely on one person's opinion according to his duties. Everyone can claim that he/she skilful and professional, but we should get information from more reliable sources. Another way to examine a person is by asking specific questions or inviting to perform some tasks.

The main idea of this article is to describe that we should not trust only a self-assessment testing, but also include more reliable researches. Respondents choose to answer the most significant questions and we can not verify results in practice. Such differences between person's digital literacy self-assessment and estimation of his knowledge in more effective way can allow us to see if a person is worth to be called a good specialist.

2. Digital literacy researches on the European level

The research of digital literacy is also important on the European level [3]. Up to now the appreciation of this was insufficient. The statistical data are focused only on the numbers of computers at homes, the Internet access points, the network parameters, etc. The digital literacy results were usually treated as derivatives of the defined technological indices. However, even direct assessments of digital literacy based on the survey data fail to be very reliable. Testing the respondents is more reliable and it is important from European Union point as well, because such researches enable us to value the real situation and facts in a whole country to be compared with the other countries.

Here is the list of advantages of digital literacy testing on the European level: i) country monitoring of digital skills; ii) comparison by country, gender, age and other factors; iii) decreasing gap in digital literacy data; iv) compelling argument for governments and corporative; v) tool to enable increasing digital literacy.

3. Organization of surveys

To organize such experiments we should carry out below described tasks: i) define validation group; ii) define elements and content of the survey; iii) outline demographic parameters; iv) write detailed survey scope document and/or invite potential firms to tender; v) conduct survey; vi) analyse and interpret the results.

Therefore, we should select a group of several people (validation group) to discuss the elements outlined within the documents, to define clearly the exact parameters and objectives of the survey. The purpose of this survey is to establish a true understanding of the state of digital literacy and to provide a contextualised index of digital literacy allowing comparison by gender, age and other demographic or lifestyle factors.

It is also very important that survey has to match some academically and methodologically prepared standards. Standards also have to match certification of *European Computer Driving Licence* (ECDL) community. Hence, we can divide the methodology into some parts: i) survey of opinions on skills, opinions on other factors, lifestyle and demographic questions, using online survey tool; ii) short test of actual skills, using earlier prepared tests based on a reduced ECDL or similar test.

It is intended that the fieldwork part of the survey will be largely carried out through test centre network and that is why methodology should allow us to get enough real information that would help us to calculate the results.

We can also describe some main parameters and objectives that should be discussed by validation group: i) to agree the content of the survey; ii) to discuss and agree how we market the survey externally; iii) to define details of the scope of the survey for possible tendering; iv) to define the positioning of the survey to the market researches.

The two different assessments are described here: i) digital Literacy Self-Assessment; ii) digital Literacy Practical Assessment.

4. Organization of experiments

In the first part of a test a respondent answers such questions as described below.

1. Can you move and recognize desktop icons?
2. Can you forward a reply to an e-mail message?
3. Do you know how to add an image to a document?
4. Do you know how to modify text? Ect.

The respondent is asked some self assessment questions to determine what level of a digital literacy he thinks he has, so this item includes questions which could be grouped in that way: basic Computer knowledge; online communication; common application; media Library and others. Respondents have a three – answer- choice: “Yes”- 2 points; “Unsure”-1 point and “No”-0 points.

The second part of a test includes practical tasks. The quantity of questions in both groups should be the same, it would help to calculate results more accurate. For example, respondents can be asked such questions.

1. How would you move a desktop file?
2. How to reply to all your friends at the same time by e-mail?
3. How the image should be added to a document?
4. How would you modify different parts of a text? Etc

Here we can see such questions that are the same according to the first part, but in this part respondent must choose a right answer. If his answer is right, he gets 2 points, if he is uncertain he gets 1 point and if his answer is incorrect he gets 0 points.

As a result of two performed experiments we can see that a gap exists between the ‘perceived’ state of Digital Literacy and the ‘actual state’. Self-assessment results were compared with a real situation. We can assume that it is difficult to make more accurate assessment of the respondents’ knowledge and competence unless they are tested directly. We are sure that it is a strong demand to create surveys which measure the ‘actual’ state of digital literacy.

5. Results of experiments

Here you can see the results of a research which were made at Vilnius University, Kaunas faculty of Humanities last year. Before examination students were asked to choose the answer that would fit their opinion the most. For this purpose a special questionnaire for self-assessment was drawn up. Afterwards, an ECDL examination showed us a real situation. Below we can look at the results of this testing. And what can we say? According

to Fig. 1, we can estimate that almost all the students passed the test better than they thought they would do. Also we see that 46 students have a poor level. And the same is with good results: 57 students thought that they were good in using computers, but results show us that only 34 students can use computers without any problems.

As a conclusion we can say that from 117 students 48 can receive ECDL certificates that confirm their skills and only 11 students are not prepared for that. Therefore, we see a big difference between the real and perceived states of the digital literacy. In Fig. 2 we can see the same results, described in percents. Table 1 shows us the teacher’s opinion and what is the real state of their skills. Experiment involved 35 teachers undertaking post-graduate studies. None of them are IT specialists, but they use computers on a user level. The respondents were introduced to the subject matter. Then all the participants were given the survey for self-assessment.

Table 1. Self assessment and real testing experiment, students

Skills	Self-assessment	Test Results
Can not work	3	17
Poor	46	18
Good	57	34
ECDL level	11	48

Here again, during the experiment earlier prepared tests were used for more specific situation and we see that results are almost the same. People can’t evaluate how good they are at using a computer before passing the exams or doing such tests.

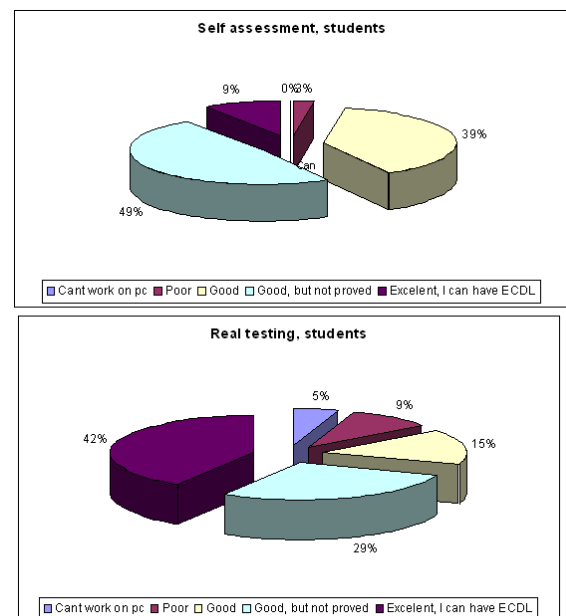


Fig. 1. Self assessment and real testing experiment, students.

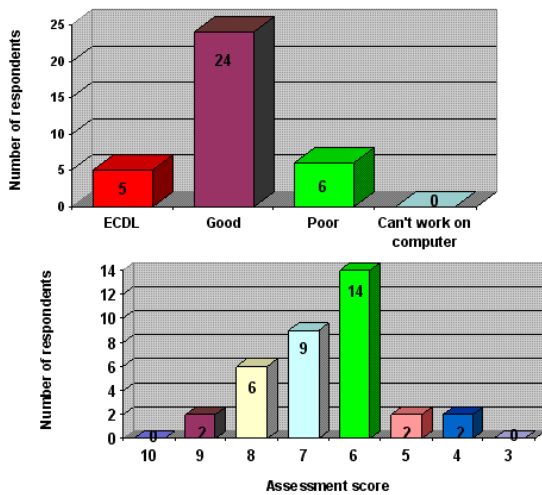


Fig. 2. Self-assessment and real testing experiment, teachers.

The results can not always be correct, so how it should be changed? First, the quantity of respondents should be about 500

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or even more. Second, where it should be done? Shopping centres and shopping areas should fit most. Thus we just need enough time to get the best results.

Conclusions

The results obtained by the survey supported our assumption on under-objective self-assessment of the respondents' knowledge.

As the main result of the experiments mentioned, we can state that such researches enable us to value the real situation of digital literacy. Also this works as a confirmation that a person has enough skills in using computer and understanding the main tasks of IT.

Information technologies are becoming more popular each day. That is why a lot of people nowadays try to get European Computer Driving Licence (ECDL) certificate, which is as an evidence for everyone to prove that they can professionally use the information technology. We can say that ECDL certificates help to value all skills of people using personal computers in reliable, right and correct way, not according only on human's self-assessment.