COMPUTER LITERACY AND MOTIVATION FOR CONTINUED EDUCATION – RESEARCH IN 2011 BY COMPARISON WITH 2010

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The article deals with the results of the research conducted in 2011 with the support of the specific research entitled "Research of computer literacy amongst persons over 30", under number 2131 and the specific research from 2010 entitled "Research of computer literacy amongst persons over 40", under number 2132. Both the researches were approved at the University in Hradec Králové.

Abstract: In 2011 a questionnaire survey took place to verify computer literacy in persons over the age of 30. The questionnaire survey also was to identify the respondents' motivation for upgrading. The paper aims to summarize the results compiled in the area of computer literacy as well as motivation for upgrading. A view of computer literacy as well as motivation for upgrading has been elaborated by age category, education level achieved, gender, size of place of residence, and distance of permanent residence from the regional capital. Furthermore, the paper mentions the results of the respondents' answers to questions concerning computer literacy and their evaluation, as to how they manage to work with the computer. The paper also presents the respondents' interest in study subjects and weekly timetable for their study program.

Keywords: Questionnaire survey, adult education, willingness to upgrade, computer literacy.

Computer literacy and motivation for upgrading of persons over 30 years of age is important for all types of education, be it professional education or upgrading, or education of seniors. The objective of the paper is to acquaint the public with the results of a research of the motivation for upgrading and computer literacy in individual age categories.

Present Knowledge of the Field

Many authors are engaged in the improvement of computer literacy in adults and also seniors. Bakaev, Ponomarev, and Prokhorova (2008) confirm a well-known fact: it is necessary in the field of adult education and especially senior education to overcome certain obstacles in the early stages. After that students are able to improve their computer related knowledge significantly. The authors of the paper introduced methodological approach in courses of computer literacy with 110 Russian seniors. The courses contributed to an extensive improvement in computer literacy (38% to 81%) and Internet skills (21% to 62%) in seniors. The authors emphasize that the communication skills of the lecturers are of cardinal importance in the educational process. This conclusion corresponds with the observations of Lau and Cortes (2009) who explored the relation between information and communication in detail.

Gagliardi et al. (2008) provide a practical guide for improving computer skills in seniors and disabled people. The authors deal with the analysis of focused perception of organizational and didactic aspects in teachers to facilitate the improvement of the students´ skills. A statistically important relationship was identified between the initial education level of the students and the overall responsiveness and satisfactory pace in the courses. The relationship found became a basis for a discussion of the authors about appropriate educational methods supporting computer literacy.

The personal profile of the adults who try to improve their computer literacy seems to be crucial for the efficiency and success of computer literacy courses. Burger and Blignaut (2007) even suggest the way to anticipate the computer literacy course result according to the student's personal characteristics. The authors studied several biographic, psychological and cognitive factors and identified their impact on the qualification of such courses for individual groups of adults.

According to Langmeier's development psychology (2006), the phases of the development of adults are as follows:

1. **Early adulthood** (approx. From the age of 20 to 25 – 30 years) is a temporary stage between adolescence and full adulthood.
2. **Mid-adulthood** (approx. Up to the age of 45 years) is a phase of full productivity and relative stability.
3. **Late adulthood** is the phase up to the beginning of old age (i.e. approx. up to the age of 60 – 65 years).
4. **Old age** (which can be further classified into early and late).

In the old-age group, sensual perceptibility and memory deteriorate, according to Langmeier (2006), p. 204. As far as sensual perceptibility is concerned, roughly 90% persons over 60 lose some visual perceptibility, and 30 % persons suffer from significant hearing deterioration. This meaningfully inhibits their work capability, but also recreational options, and thus also adult education options. Their memory becomes worse, primarily in the area of short-term memory for new events, while long-bygone events remain logged well in their memory. At a higher age, intelligence also declines, according to results obtained by common intelligence tests, e.g., the Wechsler test, as Langmeier mentions. These changes, too, affect man's chances for further education, although the differences between individuals can be considerable.

When examining the developmental stages according to Vágnerová (2007), we obtain the following phases:

1. Junior adulthood phase (20 – 40 years of age)
2. Mid-adulthood phase (40 – 50 years of age)
3. Senior adulthood phase (50 – 60 years of age)
4. Early old-age phase (60 – 75 years of age)
5. Genuine old-age phase (75 of age and older)

"Due to the various changes accountable to aging, human brain processes certain information differently from before. While younger people usually have to activate merely a specialized part of their brain to resolve certain problems, the brain of older persons functions in a more complex manner. Various research efforts confirm that different parts of the brain engage in the solution-finding process in young and older individuals. This difference can be viewed as one of the functionality phenomena known as plasticity, which is the human brain's way of compensating for deterioration of brain functionality. In persons over 60 years of age, we observe bilateral actuation of relevant brain centres, whereas in younger persons only certain unilateral areas of the brain are active (e.g., when recalling information and solving tasks involving verbal or spatial memory). In older persons, certain functions are no longer as clearly lateralized as before. Instead, both hemispheres are actuated as part of physiological compensation. This might change their functional integrity (Berger and Thompson, 1998; Stuart-Hamilton, 1999; Baltes, Freund and Li, 2005; West and Bowry, 2005)." Vágnerová (2007).

As you might notice yourselves, two specialists working in developmental psychology differ in the way they differentiate individual stages of development and determine the age brackets of such development. On the other hand, they agree on many of the changes that take place due to aging of the population.

Demographic Classification of the Survey Sample

The aim of the research in 2011 was to identify the degree of computer literacy and motivation for upgrading of the population over 30 years of age. This paper aims to compare the results acquired from the research in 2011 with the results of the questionnaire survey conducted in 2010. In the spring of 2010, a questionnaire survey took place to evaluate the computer literacy of persons over 30 years of age. In 2011 a verifying questionnaire survey was carried out. In the month of April, 4,000 questionnaires were handed out thanks to the help of 250 students of the College of Polytechnics in Jihlava, in which respondents expressed their opinions in three thematic areas. Most of the questions were prepared in the multiple-choice-answers form. In 2011 approximately 200 students of the

College of Polytechnics in Jihlava helped with the research. 4,000 questionnaires were handed out again.
The first part of the questionnaire in 2010 and the second part in 2011 aimed to identify the respondents' elementary demographic characteristics for the purposes of subsequent differentiation into groups of respondents and analyzing their answers. The following personal data were recorded: gender, age, education, place of residence, distance from regional capital, and current occupation.
The second part of the questionnaire in 2010 and the third part in 2011 aimed to assess the respondents' motivation for upgrading. For respondents who wished to enrol in adult education classes we tried to find a suitable field of specialty (i.e., demand for educational opportunities) and the time that the respondents were willing to devote to learning and, last but not least, the distance they were willing to travel to attend classes.
As far as the response rate of the questionnaires is concerned, 3,258 of them, out of 4,000, returned to us for processing in 2010. This brings the response rate to 81%, which is – from methodological point of view – a very positive result. After discarding incomplete and wrongly filled-in questionnaires, we had 2,537 respondents left to work with. In 2011, 3,072 questionnaires, out of the total number of 4,000, returned to us for processing, which brings the response rate nearly to 77%. From the methodological point of view, the response rate over 80% would be better but even the result of 77% seems to be sufficient for verifying the preceding survey. After discarding incomplete and wrongly filled-in questionnaires, we had 2,577 respondents left to work with. This presents a better result as compared with 2010. More respondents filled in the questionnaire correctly than in the preceding year, although the difference makes only 1% of the total number of questionnaires handed out.
If we examine the demographical distribution of the respondents in our survey sample, we can state the following findings: the sample of respondents in 2010 consisted of 55.22% women and 44.78% men, whereby the largest age group was represented by age group 40 to 44 years and from the point of view of education the largest group comprised graduates of secondary schools. The sample of respondents in 2011 consisted of 54.67% women and 45.33% men, whereby the largest age group was again represented by age group 40 to 44 years and from the point of view of education the largest group again comprised graduates of secondary schools. The exact distribution by the above demographical determinants is reflected in the following table.

Table 1 – Respondents by Age

Age	Percentage of respondents in 2010	Percentage of respondents in 2011
30 – 39	12.73%	14.4%
40 – 44	23.49%	25.34%
45 – 49	22.23%	22.98%
50 – 54	14.74%	15.74%
55 – 60	10.25%	7.99%
60 – 64	6.23%	4.57%
65 – 69	4.85%	4.68%
70 – 74	3.19%	2.20%
75 +	2.29%	2.01%

Source: own research

The comparison of the two years shows that the respondents of 2011 were younger. The willingness of older students to fill in the questionnaires was not as high as in 2010.

Table 2 – Respondents by Education

Education level achieved	Percentage of respondents in 2010	Percentage of respondents in 2011
Elementary	4.41%	2.76%
Vocational training	34.25%	32.91%
High school with graduation	39.57%	43.33%
University – bachelor's degree	6.54%	7.42%
University – master's degree	12.38%	12.04%
University – doctor's degree	2.72%	1.42%
Higher professional school	0.12%	0.12%

Source: own research

In 2011, the number of respondents with high school education with graduation and with bachelor's degree from universities increased. This fact indicates a shift in education achieved in the Czech Republic.
When considering the sample of respondents from the point of view of their place of residence, the highest number of respondents in 2010 belonged to the category village/town/city with the population of up to 9.999 inhabitants. This group was followed by inhabitants of regional capitals and another numerous group of respondents lived 21 to 30 km from the regional capital. In 2011 the highest number of respondents also belonged to the category village/town/city with the population of up to 9.999 inhabitants. This group was followed by respondents who lived 21 to 30 km from the regional capital. The exact data is again presented in the two following tables.

Table 3 – Respondents by Place of Residence

Place of residence is a village/town/city with the population of:	Percentage of respondents in 2010	Percentage of respondents in 2011
0 – 9.999	45.92%	45.97%
10.000 – 19.999	17.70%	15.51%
20.000 – 29.999	10.60%	11.24%
30.000 – 39.999	4.85%	6.54%
40.000 – 49.999	8.36%	7.09%
50.000 – 59.999	8.32%	9.91%
60.000 and more	4.26%	3.76%

Source: own research

Table 4 – Respondents by Distance from Regional Capital

Place of residence distance from the regional capital	Percentage of respondents in 2010	Percentage of respondents in 2011
place of residence in the regional capital	21.80%	18.38%
1 - 10 km	8.47%	8.39%
11 – 20 km	14.70%	15.16%
21 – 30 km	16.71%	19.98%
31 – 40 km	14.31%	16.34%
41 – 50 km	11.39%	10.82%
more than 50 km	12.61%	10.93%

Source: own research

In 2011, the groups "place of residence in the regional capital" and "place of residence 21 – 30 km from the regional capital exchanged their positions in terms of quantity. The other groups are similar to the research in 2010, although there was either a slight decrease or increase ranging up to two percent.
We examined the relevance of data from the perspective of official data stated in the public database of the Czech Statistical Office (www.czso.cz). The distribution of the respondents in both researches corresponds to the distribution of men and women in the Czech Republic as per the Czech Statistical Office. According to the website of the Czech Statistical Office, each age category represents roughly 10% of the population for persons over 30 years of age. From the age of 65 up, the percentage of these persons in total population begins to decline. The questionnaire survey corroborated the figures reported by the Czech Statistical Office, except that there were more respondents in age categories from 40 to 50 years than their percentage in these age categories reported by the Czech Statistical Office. The aforesaid is again applicable to both of the researches.

Results and Discussion – Motivation for Upgrading in 2010 and 2011

The following text analyses the willingness (motivation) of the respondents to enrol in adult education programs. The data analysis from 2010 shows that 56% respondents are willing to upgrade in their free time, on the other hand, 44% respondents are not interested in upgrading. The number of respondents willing to upgrade decreased in 2011. 55% respondents are willing to upgrade, 45% respondents are not. This one-percentage decrease in interest might be caused by the overall situation in the society. Although in terms of the present economic crisis people should be more interested in upgrading to enhance their chances to find a job at the time of unemployment. From the point of view of employment, people should upgrade to become more beneficial for the society.

If we examine the sample of respondents who are interested in further education by gender, we see that women are more motivated (59% of them expressed to be motivated in 2010) as opposed to men (53% in 2010). The research of 2011 indicates a decrease of motivation for further education. In both the categories the motivation decreased by 5%. Further researches might verify this downward trend. I hope, from the professional point of view, that this was only an exception. From the point of view of adult education, it would be desirable if the respondents were more willing to upgrade, otherwise the efforts of education experts would have little effects, and that would be a big loss nowadays.

Although these figures cannot be considered statistically meaningful, there are certain gender-specific motivation differences. Even more interesting is the information that relates to individual age groups. As for the research of 2010, in the individual age groups of up to 70 years, greater motivation for learning can be found in women, in the age group of over 70, the survey showed results in favour of men. In the research of 2011 the greater motivation for learning in most age groups can also be found in women. The only difference occurred in the age group of 55 to 59 let, when men were more motivated to study in 2011. This might be caused by the fact that men realize, because of later retirement, the necessity to upgrade to find a new job in case they are unemployed and thus to fulfil themselves on the job market.

The above mentioned result for 2010 is comprehensively presented in the following graph.

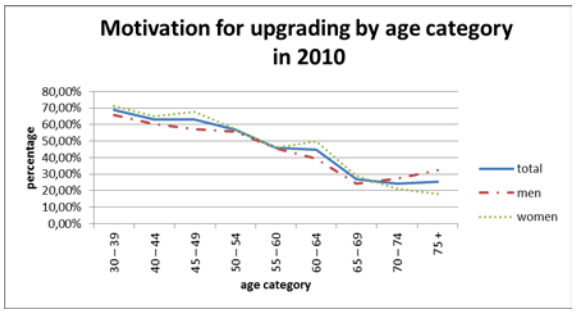

Figure 1 – Motivation for upgrading by age category in 2010
Source: own research

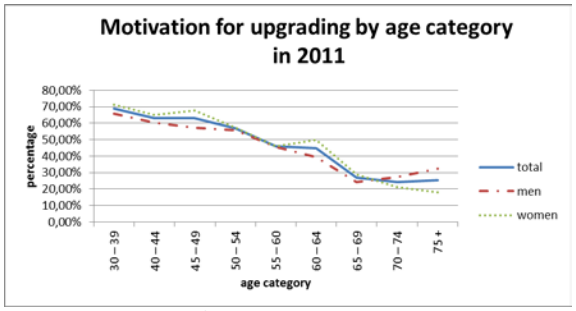

Figure 2 – Motivation for upgrading by age category in 2011
Source: own research

The graphs presented above indicate clearly that willingness for further education decreases with increasing age of the respondents and depending on the developmental stage of an adult person, as described by specialists in developmental psychology.

We have to realize that the results of the research correspond to the developmental stages of man, where certain cognitive changes occur in the individual phases and motivation for upgrading changes in correlation to these changes.

If we interpret the results from the perspective of gender, age, and highest level of education achieved, then we find that in the category of men who would like to upgrade their education were predominantly respondents with tertiary education. Only the group aged 60 - 69 years was distinctly different from the other age groups. The category of women is similar – female respondents with tertiary education have greater motivation to learn.

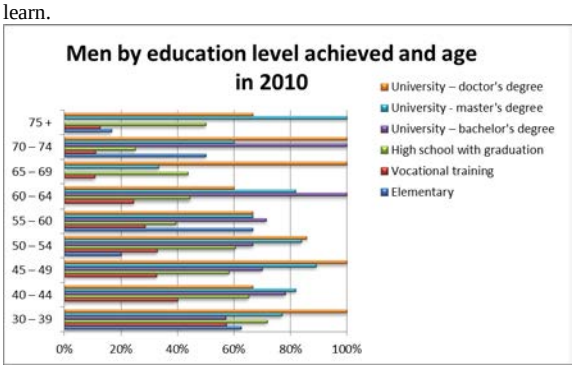

Figure 3 – Motivation for upgrading in case of men by education level achieved and age – research of 2010
Source: own research

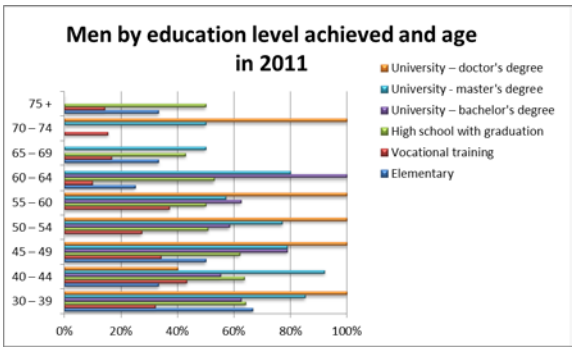

Figure 4 – Motivation for upgrading in case of men by education level achieved and age – research of 2011
Source: own research

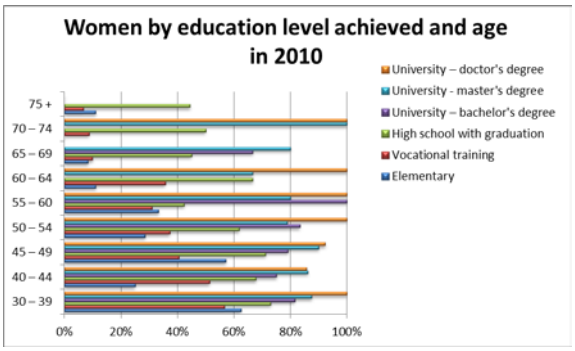

Figure 5 – Motivation for upgrading in case of women by education level achieved and age - research of 2010
Source: own research

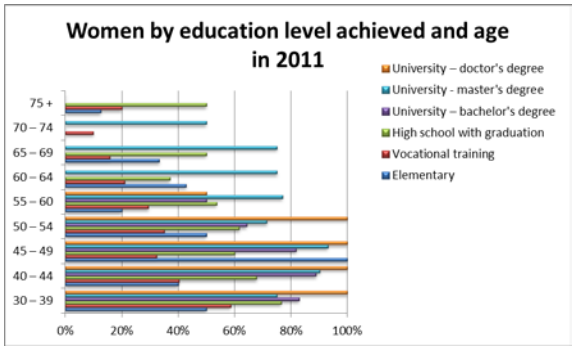

Figure 6 – Motivation for upgrading in case of women by education level achieved and age - research of 2011
Source: own research

If we examined the motivation phenomenon in the light of this distribution by age category, we find that greater motivation for upgrading – at this level of education hitherto completed – is on the part of the younger rather than the older age categories. Again, this finding is corroborated by individual changes in the developmental stages of the respondents. The intelligence of the younger age categories is, according to specialized research, is higher and so is their memory capacity. Hence, these respondents are more willing to attend adult education programs. Persons in the older age categories are more fearful and apprehensive of the changes that impact on their lives and are therefore less motivated.
It is also highly interesting to look at the motivation for upgrading from the perspective of the place of residence, both concerning its size of population (table No.5) and its distance from the regional capital (table No.6).

Table 5 – Motivation for Upgrading by Place of Residence

Place of residence is a village/town/city with the population of:	Motivation for upgrading 2010	Motivation for upgrading 2011
0 – 9.999	47%	47%
10.000 – 49.999	41%	41%
50.000 – 59.999	8%	8%
60.000 and more	4%	4%

Source: own research

Here the results of the two surveys are completely the same. It is amazing that respondents with place of residence in a village/town with lower population are more interested in further education than respondents from larger towns/cities who have better opportunities for education than respondents from smaller towns and municipalities. The results of this survey might be influenced by the places where the researches were conducted. The researches in 2010 and 2011 were both carried out by students of the College of Polytechnics in Jihlava, and thus we could say that the majority of respondents probably come from the Vysočina Region, but it is not possible to state it clearly for the research of 2010. The reason is a wide range of the students' places of residence where the research was done. It is true that only a little percentage of students come from Prague or Brno. However, the distribution of individual regions can be traced in the research of 2011. It is true that nearly 65% respondents live in the Vysočina Region. Other regions, which are represented by 5% each, were the South Bohemian, South Moravian, central Bohemian and Pardubice Regions. This is obvious when we realize the location of the Vysočina Region and its neighbouring regions. Other regions, not mentioned above, are represented by small numbers lower than 1%.

Table 6 – Motivation for Upgrading by Distance from the Regional Capital

Place of residence distance from the regional capital	Motivation for upgrading 2010	Motivation for upgrading 2011
place of residence in the regional capital	22%	20%
1 - 10 km	8%	7%
11 – 20 km	15%	15%
21 – 30 km	17%	20%
31 – 40 km	14%	17%
41 – 50 km	11%	11%
More than 50 km	13%	10%

Source: own research

As the table No. 6 shows, distinctive motivation for further education is not related to the distance from the regional capital but it is distributed evenly in the area around the regional capital. The questionnaire survey also tracked the specialization that the respondents would like to study. Respondents could choose from multiple options. In some cases, they could fill in a specialization of their choice, if it was not offered in the questionnaire. The table below shows the number of respondents by specialization of their choice. If we want to examine the individual preferred specializations by gender, we have to look at Table No. 7.

Table 7 – Specialization of choice by category of men and women

Specialization	Men 2010	Women 2010	Men 2011	Women 2011
Technical (maths, physics)	81.94%	18.06%	83.17%	16.83%
Social	22.57%	77.43%	22.18%	77.44%
Historical	40.24%	59.76%	47.92%	51.39%
Artistic	25.71%	74.29%	32.53%	67.47%
Economic	41.31%	58.69%	40.58%	58.76%
Legal	54.03%	45.97%	38.13%	61.25%
Sports	57.63%	42.37%	55.56%	43.65%
Languages	36.23%	63.77%	39.41%	60.04%
Computers	49.67%	50.33%	51.04%	48.34%

Source: own research

If we focus on the specialization that they would wish to study, we find that the three most popular areas in both researches are: languages, computers, and economics. The least popular fields of specialty in 2010 were sports and law. The research of 2011 shows a decline in the interest in artistic specialization, so this was the least demanded specialization. The answers indicate which specializations are preferred by men and which by women. While men prefer technical subjects and sports, women prefer social subjects and creative arts in both researches.
There was a change in the willingness to study the legal specialization. In 2010, this specialization was favoured by men while in 2011 it was preferred by women. Lower or higher willingness to study any of the other specializations by gender groups remained the same in both researches, only the proportionate representation changed.
If we focus on the distance which the respondents are willing to travel, the majority of respondents opted for the distance of 20 km in both researches. The second most frequent answer was 50 km in the research of 2010 and 30 km in the research of 2011. The third most frequent answer was 30 km in the research of 2010 and 10 km and 50 km in the research of 2011. The respondents manifested different attitude to commuting for education. Some respondents, despite of the fact that they live in a small village, are not willing to commute because of education. They would prefer to study in their place of residence, which is usually much more complicated.

Table 8 – Optional length of studies with an educational institution

How much time would you be willing to spend doing your studies at the institution?	Men 2010	Women 2010	Men 2011	Women 2011
Less than 1 hour per week	7.72%	5.96%	8.20%	7.77%
1 to 2 hours per week	52.01%	56.02%	52.79%	51.97%
More than 2 hours per week	36.11%	34.98%	33.59%	34.92%
Other time limit	4.17%	3.04%	5.42%	5.34%

Source: own research

Furthermore, the questionnaire survey examined the length of study that the respondents would be willing to spend at the educational institution. Table No. 8 shows the percentages for the categories of men and women.
As Table No. 8 clearly indicates, most respondents, both men and women, were willing to devote 1 to 2 hours a week. These findings are the same for both researches and might lead to generalization that the respondents find one to two hours a week the ideal time for further education. One third of the respondents are willing to spend on education more than two hours a week.

Results and discussion – computer literacy

The third part of the questionnaire survey of 2010 and the first part of the research of 2011 focused on the computer literacy of persons over 30 years of age. The results of 26 questions, with consideration given to the respondents' personal data, can be interpreted as follows. In this particular paper I limit my interpretation to several questions.
Question No. 1: "Do you know how to use a PC at least on a completely elementary level?" Answers: Yes, No.
The number of "Yes" answers was 85.17% in the research of 2010. The comparison of men and women indicates that women were a little more self-confident than men, and that more of them know how to use a PC on at least elementary level than men. From the perspective of age, younger respondents were more self-confident, which clearly reflects the trend of the time, where the younger generation is likely to be more technically inclined than the older generation. If we examine this phenomenon from the perspective of education and age, we can see it best in the following graph, see Fig. 7. Most of the self-confident respondents were amongst the university-educated with bachelor's degree aged 40 to 44 years.
In the research of 2011, the number of "Yes" answers was already 89.75%. This time men were more self-confident than women but the difference in percentage representation was not significant. From the perspective of age, the research verified the result of 2010 that younger respondents were more self-confident in using a PC. An interesting change occurred in 2011 in the groups of respondents who achieved university education with bachelor's degree and those who achieved only elementary education. These two education groups were more self-confident after the age of fifty but each in a different way, see Fig. 8.

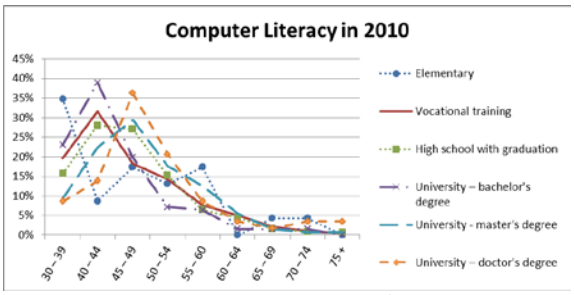

Figure 7 – Computer literacy – research of 2010
Source: own research

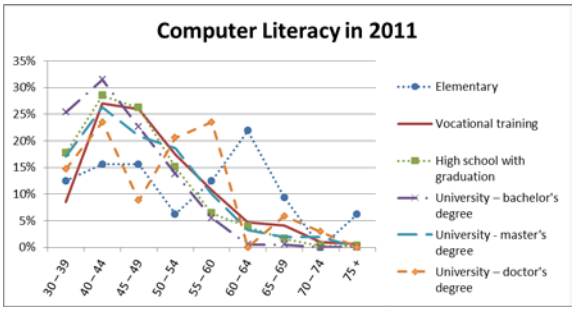

Figure 8 - Computer literacy – research of 2011
Source: own research

Question No. 12: "Do you have at least some idea what a hard disk is and what it is used for?"
Answers: Yes, No.
76.05% respondents answered "Yes" in 2010 and 78.95% respondents answered "Yes" in 2011. Their exact differentiation by gender is shown in Table No. 9.

Table 9 – Answers to question: "Do you have at least some idea what a hard disk is and what it is used for?"

	2010		2011	
	Yes	No	Yes	No
Total	76.05%	23.95%	78.95%	21.05%
Men	80.59%	19.41%	81.42%	18.58%
Women	72.38%	27.62%	77.34%	22.66%

Source: own research

If we examine the data obtained from the answers to this question from the perspective of education and age, it is interesting to see the results deriving from answer "No", where respondents with elementary and vocational education do not have an idea what a hard disk is. Results in the categories of education (elementary, vocational) and age, by gender are shown in Fig. No. 9 for the research of 2010 and Fig. No. 10 for the research of 2011.

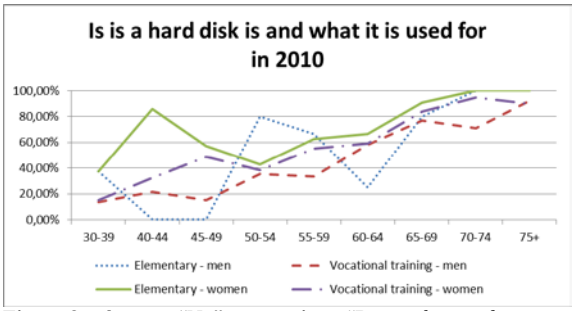

Figure 9 – Answer "No" to question : "Do you have at least some idea what a hard disk is and what it is used for?"
Source: own research

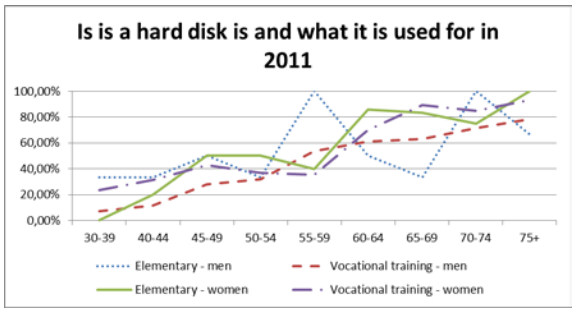

Figure 10 – Answer "No" to question : "Do you have at least some idea what a hard disk is and what it is used for?" Source: own research

Question No. 13: "Do you have at least some idea how to find a file on the disk?" Answers: Yes, No.
75.94% respondents answered "Yes" in 2010 and 80.48% respondents answered "Yes" in 2011. Their exact differentiation by gender is shown in Table No. 10.

Table 10 – Answers to question: "Do you have at least some idea how to find a file on the disk?"

	2010		2011	
	Yes	No	Yes	No
Total	75.94%	24.06%	80.48%	19.52%
Men	78.13%	21.87%	83.16%	16.84%
Women	74.17%	25.83%	78.51%	21.49%

Source: own research

If we examine the data obtained from the answers to this question from the perspective of education and age, it is interesting to see the results deriving from answer "No", where respondents with elementary, vocational and vocational with graduation education do not have an idea how to find a file in the computer. Results in the categories of education (elementary, vocational, vocational with graduation) and age, by gender are shown in Fig. No. 11 for the research of 2010 and Fig. No. 12 for the research of 2011.

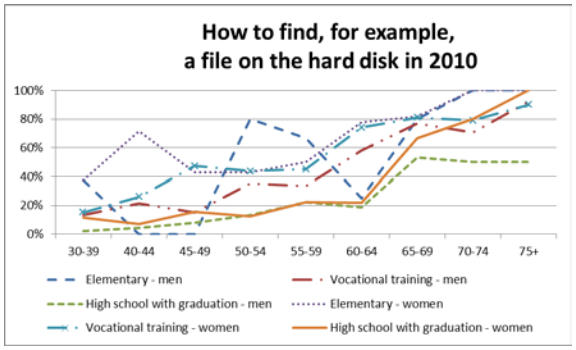

Figure 11 – Answer "No" to question: "Do you have at least some idea how to find a file on the disk?"
Source: own research

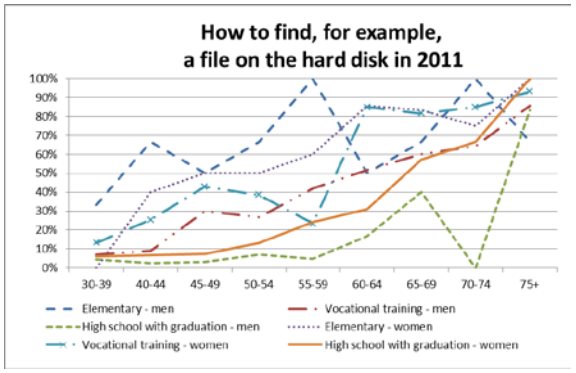

Figure 12 – Answer "No" to question: "Do you have at least some idea how to find a file on the disk?"
Source: own research

Question No. 14: "Do you know how to work with a program for text editing, so-called text editor (e.g., Word, WordPerfect, Text602 etc.)?"
Answers: Yes; Yes, partly; No, not at all.
41.29% respondents answered "Yes" in 2010 and 44.66% respondents answered "Yes" in 2011. Their exact differentiation by gender is shown in Table No. 11.

Table 11 – Answers to question: "Do you know how to work with a program for text editing, so-called text editor (e.g., Word, WordPerfect, Text602 etc.)?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Yes	41.29%	45.30%	38.05%	44.66%	48.31%	41.73%
Yes, partly	33.56%	30.94%	35.68%	35.41%	33.36%	37.27%
No	25.15%	23.76%	26.27%	19.93%	18.33%	21.01%

Source: own research

If we examine the data obtained to this question from the perspective of education and age, it is interesting to see the results deriving from the answer "No", where respondents with elementary and vocational education do not know how to work with text editing program. Results in categories education (elementary, vocational) and age, by gender, are shown in Fig. No. 13 for the research of 2010 and Fig. No. 14 for the research of 2011.

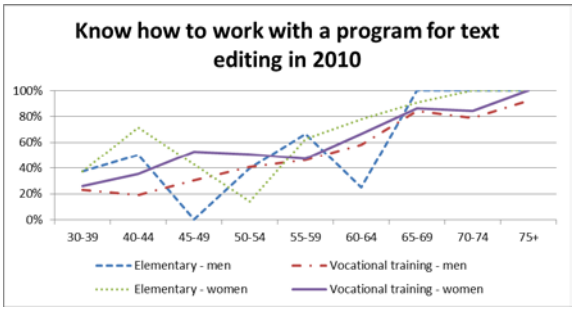

Figure 13 - Answer "No" to question: "Do you know how to work with a program for text editing, so-called text editor (e.g., Word, WordPerfect, Text602 etc.)?"
Source: own research

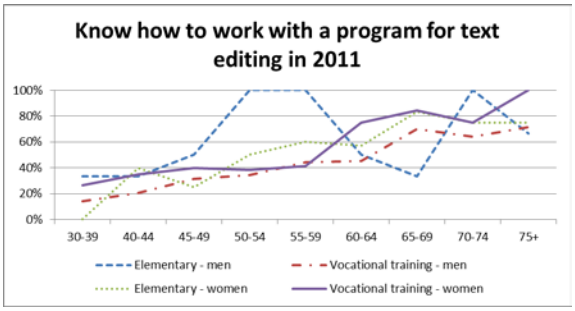

Figure 14 - Answer "No" to question: "Do you know how to work with a program for text editing, so-called text editor (e.g., Word, WordPerfect, Text602 etc.)?"

Source: own research

It is interesting how answers to this question changed. In the research from 2011, the answer "No" was peculiar to men with elementary education in the age groups from 50 to 60 years. In the research from 2010, however, only approximately 50% of the same group answered "No". Another change occurred in the age group over 70 years. In the research from 2010 most respondents from this group answered "No" while in 2011 only up to 50% respondents of the same group answered "No".

Question No. 17: "Do you know how to work with the Internet?"
Answers: Yes, no.
82.19% respondents in the research from 2010 and 86.00% respondents in the research from 2011 answered "Yes". Their exact differentiation by gender is shown in Table No. 12.

Table 12 – Answers to question: "Do you know how to work with the Internet?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Yes	82.19%	82.87%	81.64%	86.00%	86.81%	85.60%
No	17.81%	17.13%	18.36%	14.00%	13.19%	14.40%

Source: own research

If we examine the data obtained to this question from the perspective of education and age, it is interesting to see the results deriving from answer "No", where respondents with elementary and vocational education do not know how to work with the Internet. Results in categories education (elementary, vocational) and age, by gender are shown in Fig. No. 15 for the research of 2010 and in Fig. No. 16 for the research of 2011.

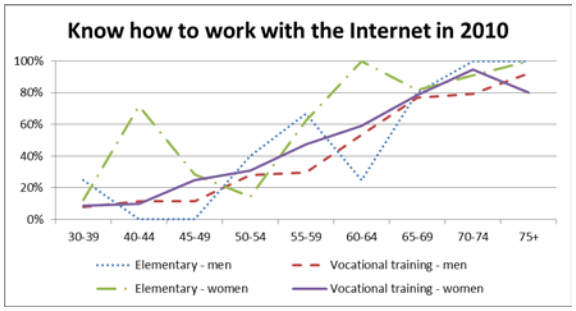

Figure 15 – Answer "No" to question: "Do you know how to work with the Internet?" Source: own research

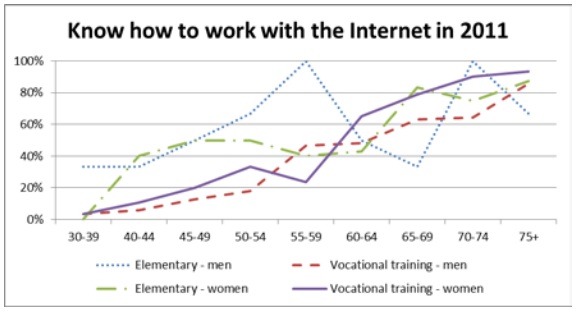

Figure 16 – Answer "No" to question: "Do you know how to work with the Internet?" Source: own research

Question No. 20: "Do you use a PC or laptop/notebook when not at work?"
Answers: Yes, actively, practically daily; Yes, but only occasionally; No, never when not at work.
43.73% respondents in the research from 2010 and 49.32% respondents in the research from 2011 answered "Yes, actively, practically daily". Their exact differentiation by gender is shown in Table No. 13.

Table 13 – Answers to question: "Do you use a PC or laptop/notebook when not at work?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Yes, daily	43.73%	49.59%	39.02%	49.32%	53.50%	46.07%
Yes, no daily	32.40%	28.08%	35.87%	34.77%	31.27%	37.64%
No	23.87%	22.33%	25.11%	15.91%	15.23%	16.29%

Source: own research

Question No. 21: "Do you use the Internet or e-mail when not at work?"
Answers: Yes, actively, practically daily; Yes, but only occasionally, No, never when not at work.
44.85% respondents in the research from 2010 and 54.86% respondents in the research from 2011 answered "Yes, actively, practically daily". Their exact differentiation by gender is shown in Table No. 14.

Table 14 – Answers to question "Do you use the Internet or e-mail when not at work?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Yes, daily	44.85%	49.22%	41.34%	54.86%	57.02%	53.11%
Yes, no daily	31.95%	28.58%	34.65%	30.87%	29.74%	31.90%
No	23.20%	22.19%	24.01%	14.27%	13.25%	14.98%

Source: own research

Question No. 22: "How often do you use computer?"
Answers: Daily, 1x up to 6x a week, 1x up to 3x a month, Less than 1x a month, Never.
43.64% respondents in the research from 2010 answered "Daily" and 47.56% in the research from 2011 also answered "Daily". Their exact differentiation by gender is shown in Table No. 15.

Table 15 – Answers to question "How often do you use computer?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Daily	43.64%	46.21%	41.57%	47.56%	50.48%	45.40%
1x up to 6x a week	24.99%	23.64%	26.08%	26.77%	26.32%	27.27%
1x up to 3x a month	12.36%	11.06%	13.40%	12.37%	11.73%	12.81%
Less than 1x a month	4.03%	4.46%	3.67%	4.21%	3.74%	4.68%
Never	14.99%	14.63%	15.27%	9.09%	7.73%	9.86%

Source: own research

Question No. 23: "How often do you use the Internet?"
Answers: Daily, 1x up to 6x a week, 1x up to 3x a month, Less than 1x a month, Never.
41.03% respondents in the research from 2010 answered "Daily" and 44.56% in the research from 2011 also answered "Daily". The exact differentiation by gender is shown in Table No. 16.

Table 16 – Answers to question "How often do you use the Internet?"

	2010			2011		
	Total	Men	Women	Total	Men	Women
Daily	41.03%	43.71%	38.86%	44.56%	47.66%	42.19%
1x up to 6x a week	25.88%	24.89%	26.68%	28.99%	28.04%	29.95%
1x up to 3x a month	12.24%	11.51%	12.83%	12.10%	11.63%	12.38%
Less than 1x a month	4.31%	4.46%	4.18%	4.56%	4.34%	4.75%
Never	16.55%	15.43%	17.45%	9.79%	8.33%	10.73%

Source: own research

Question No. 26: "Which of the following Internet services do you use?" Answers:

1. Electronic mail
2. Surfing the Internet for information
3. Chat / ICQ
4. Internet shopping
5. Digital TV
6. Radio broadcasting
7. Videoconference

71.38% respondents in the research from 2010 answered that they use "Surfing the Internet for information" most of all the Internet services. 78.87% respondents in the research from 2011 answered that they use "Electronic mail" most of all the Internet services.

Conclusion

The results of the questionnaire survey are important for optimal suggestions for adult education of persons over 30 years of age. On the basis of my evaluation of the answers of respondents, adult education in the area of information and communication technology can be assessed not only by age category, but also by education category as effectiveness of further education depends on the level of education hitherto completed. From this perspective, according to the research conducted in 2010, it would be a good idea to concentrate on upgrading the education of persons with elementary or vocational education. As far as the age category is concerned, the results of the questionnaire survey indicate clearly that respondents over 50 years of age have great problems with using present-day information and communication technology. The reason seems to be also in the fact that they had little opportunity to encounter such technology at school. Thus, whatever knowledge and skills some of them may have acquired, they are usually related to their work or the type of occupation they have or had in the past.

The results of the research in 2011 verified in some points the research of 2010. In some questions, however, interesting changes occurred, both positive and negative ones. The results of the questionnaire survey in the field of adult education brought interesting conclusions. It would be constructive to explore this theme in greater depth. Adult education of the population and motivation to participate in it is very important for every country and, above all, for the participating individuals. Individuals who do not age in their mind, thanks to continued education, find additional reasons for living in it and fulfilment of their lifelong dreams. Moreover, continued education opens the way for new social contacts that enrich their lives.

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Primary Paper Section: I

Secondary Paper Section: IN