There is no doubt the World Wide Web phenomena is one of the most influential technological innovations of mankind. Equally, what is also obvious, is the rise of the mass of information sources that has made almost all existing human knowledge available in real time has had a significant influence on education. This complete change of information availability has caused education to apparently undergo the biggest revolution since the introduction of compulsory education. Since the Internet and especially the World Wide Web has caused such important changes in the educational system we suppose that even bigger changes have happened in non-formal and informal education. We assume that almost all information we searched and gathered over the Internet has changed our knowledge and influenced the changes in our personality. In the same way we also suppose that people who widely use the Internet for self-education have changed their attitudes towards the value of education as well. In connection with these questions we are also interested in whether professional orientation influences the attitudes towards self-education over the Internet and the value of education. That was why we made these questions a part of the project called Research on Values, World View, Leisure, Economic Situation and Proficiency in Using Information Technology. The research was gained between October 2018 and March 2019 and we questioned 5348 respondents (3048 women). The research confirmed our assumptions, there are significant connections among self-education on the Internet, value of education and professional orientation across the population. In this paper we also discuss the impacts of these connections.

Keywords: Self-education, Non-formal education, World Wide Web, Professional Orientation, Value of Education.

1 INTRODUCTION

Education is a process which should be ideally done lifelong. Beside the formal education, which is normally provided by educational institutions and governed by law, we can recognize non-formal education, as well. This form of education could provide knowledge, skills and competences which can increase one’s social status and/or professional opportunities. This form of education has its own educational aims and is done for a purpose. Although it is not bound and governed by law, but it could be offered by institutions (intentionally or even unintentionally) and could be organized or not. Acquired knowledge does not lead to a legally recognized certificate, but its value could be certified by the provider and it could have the form of an unofficial certificate. Non-formal education could be also managed and organized by educated people itself and we claim this organization could be even unintentional. Apart from formal and non-formal education there exists a third form of education, informal education. There are no certificates and nor other form of testing of achievement knowledge or skills [1]. This process comes from working out unintentionally and it is never organized or structured. But as in all education this form is part of lifelong education, it also contributes to knowledge and skills which are a part of our personal and professional growth. As informal education is not organized, it could hardly be researched independently. In this paper we suppose informal education comes almost always with non-formal one and follows it. This assumed relationship between non-formal and informal education lead us to believe we could consider self-education through the Internet as both non-formal and informal.

1.1 Self-directed learning as a part of non-formal education

The changing world pushes us to understand the role of self-education as a necessary part of the education process. It is even a part which can help the individual to better understand the globalized world and the changes in civilizations. In the contemporary world self-education should be one of the most important indicators of the value of human capital which influences the economic, political and
developmental success [2]. In the world of enhanced technology, people become to be highly capable in many technological applications and medias. Using them, people might believe to are able to learn themselves. This attitude led to the establishment of the theory of self-directed learning. Self-directed learning styles are nowadays strongly connected with the Internet and social media, and this connection makes the process of self-educational extremely easy and suitable for most people. Self-directed education is implemented in many work positions, because the employees are often able to search and access information directly from IT sources to support their work. That’s why computer literacy becomes to be more and more important, simultaneously with increasing educational needs [3].

1.2 Internet in self-education

The Internet has started a new era in which humans’ relation to the information and knowledge is changing. Accessing information seems to be more important than knowledge. This trend also opens the discussion concerning the aims of education. Education of adults defines its own aims especially from the actual needs of the participants [4]. The new task for the teachers is to enable and make the access to the information as easy as is possible. The professional orientation, which is now more than ever connected with the process of education, has to support and help people with the process of the selection of work or study, and especially it has to support their inclusion in the work market. A persons self-education achieves the optimal level when it is changed into the stable for the need of lifelong learning and this need could be satisfied by the Internet and the process of globalisation which is notably present in the field of education and globally accessible resources are ready to support lifelong learning universally [5]. All these connections revealed in the contemporary world and society leads us to ask questions concerning the relationship between self-education online and the education value, and the fields of work or study.

1.3 The aim of the paper and hypotheses

We claim there exist inner relations among the education value, the praxis of usage of the Internet for searching for information for education and the field of work/study of members of population. These theoretical assumptions led us to the formulation of four hypotheses tested and published in this paper; three of these hypotheses’ response directly the theoretical assumptions and one is additional and serves for the complete image of the researched topic.

First hypothesis we claim is, there exists a dependence between the field of work or study and using the Internet for searching for information for both professional and/or self-interest self-education. In the second hypothesis we assume a dependence between attitude to the education value and using the Internet for searching for information for both professional and/or self-interest self-education. Finally, in the third hypothesis we claim the relationship between the attitude to the education value and the field of work or study of respondents. Additionally, we set the fourth hypothesis claiming the relationship between gender and the use of the Internet for searching an information for both professional and/or self-interest self-education.

2 METHODOLOGY

The results published in this paper are a part of a wider research project called Research on Values, World View, Leisure, Economic Situation and Proficiency in Using Information Technology provided by Palacký University from autumn 2018 to spring 2019. The methodology used in this research has been unified across whole of the research instrument. There are five variables measured in the research and analysed in this paper: gender, age, preference of education value, searching educational content on the Internet and field of respondents work or study.

The variable age has been measured using metric numeric scale from 15 till 100 and has been grouped into decadic categories 15 – 24, 25 – 34, 35 – 44, 45 – 54, 55 – 64 and last one which includes ages over 65. In this paper this variable is used only for the description of questioned sample of respondents.

The first variable which is used in the hypotheses mentioned above is gender. It has been measured on a nominal scale with three possible categories: man, woman and other. In hypotheses testing we are using only the first two categories because the third category has been selected by respondents only in 16 cases and therefore has no statistical relevance for the research. This is also the reason
why in hypotheses testing the total counts in the tables below decreased approximately of 16 against total count of 5348 respondents.

The measurement of the next variable concerning the field of work or study has been provided using a nominal scale of eleven categories. Definition of these categories was inspired by the Czech official nomenclature of occupations (CZ-ISCO – [6]).

The last and most important variable needed for our hypotheses is the attitude to education value. It has been measured using a metric scale from 1 (low or no importance) till 10 (highest importance).

For statistical analysis of dependence between nominal variables we used the chi-square test for contingency tables [7] with additional z-scores computed for every cell value. The z score (evaluated using the z test for normal distribution) helps us to understand the inner characteristics of the variables’ relations and shows us the specific groups in which the dependence is manifested. When we tested the dependences between the nominal and metric variable, we used a simple one-way ANOVA [8].

Data has been collected using questionnaires from 5348 respondents between autumn 2018 and spring 2019 across the Czech Republic. Table 1 shows the age/gender structure of respondents.

<table>
<thead>
<tr>
<th>Age / Gender</th>
<th>15 - 24</th>
<th>25 - 34</th>
<th>35 - 44</th>
<th>45 - 54</th>
<th>55 - 64</th>
<th>65 +</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>591</td>
<td>514</td>
<td>407</td>
<td>359</td>
<td>226</td>
<td>181</td>
<td>2278</td>
</tr>
<tr>
<td>Women</td>
<td>838</td>
<td>648</td>
<td>597</td>
<td>486</td>
<td>243</td>
<td>233</td>
<td>3045</td>
</tr>
<tr>
<td>Total</td>
<td>1429</td>
<td>1162</td>
<td>1004</td>
<td>845</td>
<td>469</td>
<td>414</td>
<td>5323</td>
</tr>
</tbody>
</table>

|          | 26.85% | 21.83% | 18.86% | 15.87%  | 8.81%   | 7.78%| 100.00% |

3 RESULTS
As we defined above there were four hypotheses that needed to be tested to prove there exist relationships among the use of the Internet to search for information, because of self-education, field of work or study and, finally, the education value. It seems these three variables make a triangle of relationships and when we confirmed these relationships, we could also apply these results to improve the praxis of self-education, add non-formal internet self-education among the instruments serving for self-improving of each person and, then consider the Internet to be an effective media for getting the effects mentioned above.

But, before we start to discuss these relationships one by one let us first discuss whether searching for information for self-education through the Internet itself depends on the gender of respondents.

3.1 Self-education using the Internet and gender
As we announced, the first question is whether we should consider whether gender is an influencing factor of self-education through the Internet.

When we tested the additional hypothesis concerning the relationship between gender and self-education through the Internet using chi-test we recognized the dependence ($p<0.05$). As we can see in Table 2 there are significant dependences in the category of those who are often using the Internet
for self-education and those who are using it rarely. No other category has been significantly
influenced by gender. Although not all categories are influenced by gender, we should, for the future,
include the gender factor among the factors influencing self-education through the Internet and redraw
the triangle in Figure 1.

Table 2. Self-education using the Internet and the gender.

<table>
<thead>
<tr>
<th>Searching information because of self-education through Internet</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Very often (more times daily)</td>
<td>922</td>
<td>1223</td>
<td>2145</td>
<td>40.24 %</td>
</tr>
<tr>
<td></td>
<td>17.30 %</td>
<td>22.94 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: 0.1694</td>
<td>z: -0.1694</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often (once per day or two)</td>
<td>653</td>
<td>950</td>
<td>1603</td>
<td>30.07 %</td>
</tr>
<tr>
<td></td>
<td>12.25 %</td>
<td>17.82 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -2.0392</td>
<td>z: 2.0392</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes (approx. once per week)</td>
<td>367</td>
<td>498</td>
<td>865</td>
<td>16.23 %</td>
</tr>
<tr>
<td></td>
<td>6.88 %</td>
<td>9.34 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -0.2701</td>
<td>z: 0.2701</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely (approx. per once month)</td>
<td>174</td>
<td>180</td>
<td>354</td>
<td>6.64 %</td>
</tr>
<tr>
<td></td>
<td>3.26 %</td>
<td>3.38 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: 2.4825</td>
<td>z: -2.4825</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>168</td>
<td>196</td>
<td>364</td>
<td>6.83 %</td>
</tr>
<tr>
<td></td>
<td>3.15 %</td>
<td>3.68 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: 1.3221</td>
<td>z: -1.3221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2284</td>
<td>3047</td>
<td>5331</td>
<td>100.00 %</td>
</tr>
<tr>
<td></td>
<td>42.84 %</td>
<td>57.16 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, ***p<0.001

3.2 Self-education using the Internet and field of work/study

First hypothesis which is focused on the relationship we recognized in the introduction, is about self-
education using the Internet and the field of work or study of the respondents. Using the chi-test we
can consider the existence of this relationship, (p<0.001) and as we can see in the Table 3 there
exists a lot of specific relationships also inside the general hypothesis.

Table 3. Self-education using the Internet and the field of work/study.

<table>
<thead>
<tr>
<th>What is the field of your work or study?</th>
<th>Very often (more times daily)</th>
<th>Often (once per day or two)</th>
<th>Sometimes (approx. once per week)</th>
<th>Rarely (approx. per once month)</th>
<th>Never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>188</td>
<td>121</td>
<td>47</td>
<td>18</td>
<td>5</td>
<td>379</td>
</tr>
<tr>
<td></td>
<td>z: 3.8331***</td>
<td>z: 0.8313</td>
<td>z: -2.0645*</td>
<td>z: -1.5456</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>252</td>
<td>175</td>
<td>87</td>
<td>34</td>
<td>25</td>
<td>573</td>
</tr>
<tr>
<td></td>
<td>z: 1.9024</td>
<td>z: 0.2773</td>
<td>z: -0.6747</td>
<td>z: -0.7349</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -2.4897*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine or health care</td>
<td>184</td>
<td>139</td>
<td>99</td>
<td>30</td>
<td>21</td>
<td>473</td>
</tr>
<tr>
<td></td>
<td>z: 0.6482</td>
<td>z: -0.3243</td>
<td>z: 2.9501**</td>
<td>z: -0.2871</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -0.2871</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -2.1694*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>379</td>
<td>268</td>
<td>112</td>
<td>26</td>
<td>21</td>
<td>806</td>
</tr>
<tr>
<td></td>
<td>z: 4.2255***</td>
<td>z: 2.1585*</td>
<td>z: -1.8983</td>
<td>z: -4.2411***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -5.1727***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business or economy (including accounting)</td>
<td>299</td>
<td>210</td>
<td>104</td>
<td>53</td>
<td>30</td>
<td>696</td>
</tr>
<tr>
<td></td>
<td>z: 1.5364</td>
<td>z: 0.0821</td>
<td>z: -0.9384</td>
<td>z: 1.0877</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>z: -2.8391**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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From the detailed analysis we can see there are professions and fields which are strongly connected with self-education (management, education, ICT – no surprise) and on the contrary there are ones which are in the opposite position to self-education (esp. operators and unskilled labor). As we looked at the professions and fields, it seems to us there is a connection also between the demanding fields and professions and the others.

### 3.3 Field of work/study and the education value

The education value as we understand it is one of the most important factors influencing the attitudes to education itself and, also, the desire for self-progress. That is why we attribute the education value so highly important, and why we made the education value one of the triangle tops.

#### Table 4. The influence between the field of work and the education value.

<table>
<thead>
<tr>
<th>What is the field of your work or study?</th>
<th>Attitude to the education value</th>
<th>Attitude to the education value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>AVG</td>
</tr>
<tr>
<td>Public governance (officials)</td>
<td>451</td>
<td>7.6978</td>
</tr>
<tr>
<td>Law or social and/or cultural services</td>
<td>487</td>
<td>7.851</td>
</tr>
<tr>
<td>Machine operator</td>
<td>370</td>
<td>8.1634</td>
</tr>
<tr>
<td>Auxiliary and unskilled labour</td>
<td>162</td>
<td>8.1444</td>
</tr>
<tr>
<td>Services (both public and trades) (e. g. craftsmen, police officers, fireman’s, gardeners etc.)</td>
<td>649</td>
<td>8.0716***</td>
</tr>
<tr>
<td>Total</td>
<td>5333</td>
<td>7.7463</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001
The ANOVA showed the influence of the field of work on the education value can be confirmed (p<0.001). When we analyse the results shown in the Table 4 we could also see the interesting values of standard deviations. Besides higher average values (10 was allowed as the maximum of the scale) in the fields with higher personal and professional demands the standard deviations fall in the same cases. It means the people working / studying in these fields have not only a higher preference of the education value, but they are more united in this attitude than those working / studying in other fields, as well.

3.4 Self-education using the Internet and the education value

Last and the most important relationship for this paper is defined in the hypothesis proclaiming the influence of self-education through the Internet on the education value. As it was in previous cases here also the ANOVA test proved the relationship (p<0.001).

The case of average and standard deviation it is repeated here even more clearly than in the previous hypothesis. There is not only the influence of self-education on the education value, but what is according to our opinion even more important, the average is even more significantly rising with the increasing in the frequency of self-education activities through the Internet. The same positive trend could be seen in the case of standard deviation, namely it is falling simultaneously with the increase of frequency of self-education activities. It means likewise, the fact that people who prefer the education value are also working on self-education through the Internet more intensively (Table 5).

<table>
<thead>
<tr>
<th>Attitude to the education value</th>
<th>N</th>
<th>AVG</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searching information because of self-education through Internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very often (more times daily)</td>
<td>2153</td>
<td>8.0967</td>
<td>1.7963</td>
</tr>
<tr>
<td>Often (once per day or two)</td>
<td>1606</td>
<td>7.9026</td>
<td>1.8069</td>
</tr>
<tr>
<td>Sometimes (approx. once per week)</td>
<td>865</td>
<td>7.4393</td>
<td>2.0178</td>
</tr>
<tr>
<td>Rarely (approx. once per month)</td>
<td>356</td>
<td>7.0466</td>
<td>2.2566</td>
</tr>
<tr>
<td>Never</td>
<td>367</td>
<td>6.4014</td>
<td>2.5105</td>
</tr>
<tr>
<td>Total</td>
<td>5347</td>
<td>7.7458</td>
<td>1.9838</td>
</tr>
</tbody>
</table>

4 CONCLUSIONS

When we started the research concerning self-education on the web (self-education through the Internet) we asked three questions and proposed the answers using three hypotheses. Finally, we added one more hypothesis about the relationship between self-education online and gender. As the results show we confirmed all proposed hypotheses. Let us discuss the results and make a conclusion.

To be honest, the confirmed significant role of gender in self-education through the Internet, or self-education online, is the biggest surprise for us. When we fired the hypothesis, we expected it wouldn’t
be confirmed because we believe there exists equal access to the Internet for men and women, so there shouldn’t exist any inequality in this matter. When we focused on the details of these results, we found the source of this inequality in two groups of respondents: the first group are those who are using the Internet for self-education often, and the second group are those who are using the Internet for questioned purposes rarely. After all the analysis we found an explanation of this phenomena. We suppose, the inequality is hidden in the time spent using the Internet. Women who are using the Internet for self-education often spend, probably more time online than men of the same group. On the opposite side the women who are using the Internet for self-education rarely spend less time online and are probably more bound to their parental obligations.

As we supposed, all other hypotheses were confirmed and, it means the triangle of relationships figured in the beginning of section 3 is fully interrelated. What exactly does it mean? And what is the role of the education value in the process of self-education? These questions we will try to answer.

Basically, the full interrelation among frequency of self-education online, the education value and the field of work or study means these three phenomena are bond and could be understood as mutually influencing. The Internet works only as a medium here, and if we change the environment to the non-online, the relationships will stay. We might not question the role of the Internet. It is a phenomena with unquestionable position and makes the researched relationships easy to manifest and expand. But, it is still the medium. The nature of the researched relationships are quite different, and doesn’t depend on the medium, however effective it appears. The nature of the group of connections we discovered and confirmed is in inner qualities of the connected phenomena. When Clyde Kluckhohn in 1951 defined values [9], he claimed the value is something desirable as well as the object of the desire. In the case of education this desire moves into the action and leads the person to enhance education in the process of self-education. Self-education in this sense means nothing more and nothing less than the fulfilling the desire. Milton Rokeach in his book ‘The Nature of Human Values’ [10] claims the values are normative and prescriptive beliefs and help us to make judgements about the world and situations we are in. The judgements depend mostly on our knowledge and qualified judging for which we need to be skilled. That’s why the desire in the case of the education value has even bigger role. This additional role is in the training of the judgement making. Although we are situated in many different life positions, we could say the difficulty of making the judgements grows with the responsibility connected with our working position (and even with the working position we are being educated for). That’s why there exists the connection to the work position and field of work. As we can see in Table 4 the importance of the education value almost always grows with the demands in working positions. So, the triangle is closed and work around all three sides taking all these sides inside the bond and process of interactions.

But, there is one last question unanswered. As we know there exists a confirmed relationship between self-education online and the education value. But, what kind of education was recognized when we asked our respondents? We can be almost sure it was not formal education. In the same way we are sure it was not informal education because that form of education is not intended, and probably couldn’t be directly measured. Therefore, the only form of education we can identify when we ask about self-education online, is non-formal education. But as we claimed in the introduction, we supposed non-formal and informal education is not exactly separated in the case of online learning and the online environment is so fluid we probably can’t say exactly which knowledge had been gathered non-formally and which informally. So, we could claim again the border between non-formal and informal education is blurred in the case of the online environment, and the intentionality of learning is also questionable, that the division of non-formal and informal education in the case of online learning almost loses its sense.

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