Self-Education through Web-Searching - An Exploratory Study

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Abstract

The 21st century is marked by the extensive and easy access to information through the virtual environment.

Do we find in today's Romanian school the presence of a formative space - on the one hand, facilitator for a maximal exploitation of opportunities, and on the other hand, a "sensor" for new risks, characteristic to the information era? Is the "digital generation" (Mark Prensky) of the beginning of century in Romania ready from these perspectives?

The present paper outlines the results of a comparative exploratory study regarding the ordinary methods used by youngsters - from 5th and 6th grades, as well as 11th and 12th grades, from six different schools, high-schools and colleges from Dolj county – to find information about different topics/homework. The results offer the premises for hypothesis regarding this phenomenon at national level.

The conclusions indicate as the main method of obtaining information the web-searching. They emphasize the absence of an initial specific educational training in this domain and allow the delineation of a suggestive image regarding possible future methods of action.

Keywords: Self-education, Web-searching, Virtual Education
JEL classification: I21, Z10, O10

1   Introduction

The evolution of humans in the actual sociocultural context is subject to the oscillation between two pillars of development: spiritual and technological.

Maintainig a balance between them through qualitative acquisitions in both areas (with a complementary-synergic structure) offers the guarantee of a harmonious development of humanity. Any slippage with a major and lasting inclination to either side of the balance (whose stanchion is the environment in which we live) may lead to irreversible imbalance with unimaginable destructive consequences.

Modern society relies more than ever on knowledge as a key resource for development, access to knowledge itself becoming a leading source of strength.

An important role in this revolution of information plays the Internet as technology that transfers power of knowledge from the hands of some institutions and persons, let's say "privileged", in the hands of interested parties.

With Internet access are associated opportunities such as education, participation, interaction, creativity, which keep positive valences depending on the purpose of their usage and the time spent for these virtual activities (Irina Elena Popovici, 2010).

Realizing quickly that education in the 21st century will be based on technology, some prestigious institutions of higher education, especially in the United States (Stanford, MIT, Harvard, Yale, etc.), have developed and perfected online educational platforms (Udacity, Coursera, MITx)[4] that aim to transform the lives of students around the world, giving them the chance to get an education of the highest quality at minimal cost (Comper, M., 2012).

We can notice everywhere in the world the accelerating conversion of cultural content in digital form, thus making the information available to anyone, anywhere, anytime.

It is obvious that as Internet connections, computers, tablets and smartphones will become more widespread, education of the highest quality will depend on the geographical location and the availability of consistent material resources or loans for studies. Therefore it looks like the future will belong to those who want to discover and exploit to the maximum the new opportunities (Comper, M., 2012).

Scientific and technological development that led to the explosion of knowledge, combined with rapid perishability of knowledge, has practically determined a paradigm shift from the school-centered education to lifelong

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[4] all presented on the website: www.academicearth.org

education, understood as a principle of design and organization of education from the perspective of its different forms during a lifetime.

This targets the maintenance and constant development of individual capacities subsumed to the affective, actional and knowledge potential, the capabilities and skills of self-education and the formation of an independent and creative personality.

From this perspective, we understand self education as being part of lifelong learning represented by conscious and intentional activity that an individual is performing to achieve the goal of forming and developing their own personality, in all its aspects: intellectual, moral, bodily, religious, professional, etc. (Ştefan, M., Bunăiaşu, C.M., Strungă, A., 2012; Bunăiaşu, C.M., Vlăduțescu, Ş., & Strungă, A.C., 2014; Călin, R.A. & Bunăiaşu. C.M., 2010; Vlăduțescu, Ş., 2012; Vlăduțescu, Ş., Smarandache, F., 2014; Bunăiaşu, C.M., 2014).

We cannot ignore the major role that the Internet plays in perfecting this process. "Digital natives" (term belonging to Mark Prensky) live in an environment that exposes young people from this category to a huge volume of messages and stimuli, coming and going at high speed. These realities determine a lifestyle, a "way of being" whose rhythm is different, even out of line, with the one from the last decade and in which the focus shifts from the ability to find / access information to the ability to manage a huge flow of information.

According to Cucoş Constantin, we consider that the great novelty that the Internet brings as a cultural space is the shift from an institutionalized education (through school, university) to a lifelong learning through self-responsibility, to a situation of generalized exchange of knowledge on a social scale, to the "Learning City", which was imagined a few decades ago by Edgar Faure, to a society that has created its own mechanisms of educational, unspecialized self-generation on a collective scale (Cucoş, C., 2011).

2   Let's search!

In scientific circles there is a debate about the future of education. How will the education be like in 20 years? Will it follow the classic path or will it take one of the forms of virtual education? Until we „meet" the future, we need to prepare it, properly managing the present and thus to prepare young people for what is to come.

Our study took as a starting point the curiosity about the ways in which students from Romania, at different stages of schooling, are getting their information on a topic/ homework/ school project received as task in class.

Held during the last three months of 2014, the research has focused, in a first stage, on a sample of volunteers (E 1) made of 250 student (133 boys and 117 girls) from 11th and 12th grades from 6 colleges and high schools in Dolj County, who were asked to indicate and rank *the main sources of information that they access when they have to prepare a paper/a school project*.

The responses are summarized in Table 1.

Sources consulted	Girls		Boys		Total	
	%	Rank	%	Rank	%	Rank
Internet	*56,1*	*1*	*70,3*	*1*	*63,2*	*1*
School books	14,4	2	10,2	2	12,3	2
The family's library	14,4	3	8,2	3	10,2	3
The school's library	9,5	4	7,3	4	8,4	4
The city's library	7,8	5	4	5	5,9	5

Table 1

One can note that the Internet is indicated as the main accessed source of information, the four other documentation sources being represented in order by: school-books (2), the family's library (3), the school's library (4) and the city's library (5).

One can also notice that there is a correlation between their order and their possibility of accessing them rapidly, because, for example, a walk to the city's library would assume an approach that is based on the mobilization of one's will or a strong motivation.

We also need to mention that book background found in personal or school libraries and often even in the city libraries is old, the information is outdated (especially in the fields of social sciences, exact sciences or technology), these institutions having limited funds for the purchase of new books.

Going into more depth, it resulted that students who indicated as the main source school-books and libraries belong in a proportion of 82% to the category of people who do not have an Internet connection at home.

The high percentage found with Internet, which qualifies it as a preferred source of information, both by boys and girls (this is true at varying degrees, but we will not dwell on this interpretation here), prompted us to refine the research approach through the expansion and comparative analysis of the responses of younger categories of pupils and of a sample (E 2) of 245 pupils (129 boys and

117 girls) from 5th and 6th grades from colleges, high schools and elementary schools in Dolj County. The responses are summarized in Table 2.

Sources consulted	Girls		Boys		Total	
	%	Rank	%	Rank	%	Rank
Internet	*66,3*	*1*	*73,3*	*1*	*69,8*	*1*
School-books	11.2	2	9,2	2	10,2	2
The family's library	9.4	3	7,2	3	8,3	3
The school's library	7.3	4	5,3	4	6,3	4
The city's library	5.8	5	5	5	5,4	5

Table 2

It is remarkable that the answers to the same question indicate the Internet as the main accessed source in a high proportion of 69.8%.

It is therefore evident, once again, the trend of the increasing importance of the Internet as a source of information for the new generation of youngsters.

Moreover, 43% of students from 11th and 12th grades, and 49% of pupils from 5th and 6th grades, stated that their only source of information is the Internet. The main reason cited is the lack of time to access other sources, but we suspect a possible attitude of convenience, which occurred as a result of low educational requirements.

The conclusions at this stage led us to expand the study and perform a comparative analysis of the two samples of respondents applied to the coordinates represented by the following questions (the responses are presented in Tables 3-5):

1. How did you learn to use the Internet?

I've learned...	E 1 (11-12th grades)						E 2 (5-6th grades)					
	Girls		Boys		Total		Girls		Boys		Total	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
...from friends/colleagues	*51,3*	*1*	*41,1*	*1*	*46,2*	*1*	*52,2*	*1*	*46,4*	*1*	*49,3*	*1*
...from relatives	14,3	3	27,3	2	20,8	2	16,2	3	28,4	2	22,3	2
...from school	25,4	2	3,2	5	14,3	3	24,2	2	14,2	3	19,2	3
...alone	2,3	5	21,1	3	11,7	4	7	4	9,2	4	8,1	4

...from courses	6,7	4	7,3	4	7	5	0,4	5	1,8	5	1,1	5

Table 3

We note that in both samples (E1 and E2), *the circle of friends and colleagues* was indicated by the vast majority of subjects as the main provider of knowledge regarding Internet usage, *the school* hovering in third place after *family*. What is surprising is the difference (more than double) between the number of responses that said *friends / colleagues* are those from whom they learned to use the Internet and the number of those who responded that they learned from *family members*. It is a reality that can and must be changed. Hints, though fragile, of an increasing involvement of families and school in this direction are a result of the comparative analysis of the percentages for the two categories of the two analyzed samples of respondents.

2. How much time do you spend daily on the Internet? Doing what?

	E 1 (11-12th grades)						E 2 (5-6th grades)					
	Girls		Boys		Total		Girls		Boys		Total	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
How much time do you spend daily on the Internet?												
< 1 hour	28,3	2	19,1	3	23,7	3	46,3	1	40,3	2	43,3	1
1 – 3 hours	45,2	1	47,4	1	46,3	1	39,4	2	42,6	1	41	2
> 3 hours	26,5	3	33,5	2	30	2	14,3	3	17,1	3	15,7	3
Doing what?												
Playing games	12,1	4	18,5	2	15,3	4	18,3	4	24,5	2	21,4	2
Studying/ Documentation	23,2	2	17,2	4	20,2	2	19,3	2	11,7	5	15,5	4
Surfing the Web	9,5	5	15,5	5	12,5	5	8,8	5	18,2	3	13,5	5
Social networks /chat/email	38,4	1	30,4	1	34,4	1	19,2	3	15,4	4	17,3	3

Listening to music/Watching movies	16,8	3	18,4	3	17,6	3	34,4	1	30,2	1	32,3	1

Table 4

The daily time spent online is different for the two samples, which means that the spent time increases with age and specific school requirements.

The comparative analysis from two schooling categories reveals the different age-specific and gender-specific preoccupations. Thus, if for grades 11th and 12th the dominant activity in the virtual environment is *to socialize*, the 5th and 6th grades students access the Internet mainly for *listening to music* or *watching movies or videos.*

Also relevant in the context of our study is the place occupied by the activity of *study/documentation* in the economy of time spent by youngsters in the virtual environment. If for sample E 1 this ranks second, for sample E 2 it occupies only the fourth place, fact explained by the nature of specific school activities, by changing areas of dominant age-specific concerns and interests, by discovering the Internet resource.

The study gives us the possibility of making an interesting comparative analysis regarding the dominant activities carried out in the virtual environment in terms of gender differences. The concern for *study and documentation* thus appears to be stronger for *girls* than for *boys*, just as the proportion changes when it comes to *playing games*.

The analysis of responses to the question *how do you spend your time on the Internet?* offers us the opportunity to separate the main aspects of the virtual environment:

- a source of information / an ad-on of individual knowledge;
- a space for recreation and leisure;
- a means of socialization, a communication facilitator;
- a repository of memories and personal experiences;
- a private teacher.

3. Were the school projects/papers made by you evaluated from the

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perspective of some predetermined criteria of form/content?

Frequency of evaluation	E 1 (11-12th grades)		E 2 (5-6th grades)	
	Form (%)	Content (%)	Form (%)	Content (%)
Never	19,6	18,5	15,4	13,6
Very rarely	27,4	28,5	24,6	23,5
Rarely	34,3	35,4	27,5	29,4
Frequently	10,2	9,3	13,9	16,4
Very frequently	6,5	7,1	10,6	12,5
Everytime	2	1,2	8	4,6

Table 5

The responses to this question are equally interesting and worrying. We can easily see that most of them are within the area of *rare* and *very rare* evaluation, with an emphasis on this phenomenon with students from 11th and 12th grades (E 1).

This may be an explanation for the situation that the academic environment faces when it needs to evaluate the materials developed by young first-year university students, materials characterized in many cases by negligence in respect to academic rules of the papers' form, content or citation of sources consulted.

3   Conclusions and openings

A number of problems arise in the foreground. One problem is to identify the solution by which young people who use the Internet as a source (often the only source) of information can be able to document at least at satisfactory level one topic of interest to them.

In fact, the first and most important step when we talk about this process was already done... the young man sought in the virtual environment the response to a question that he needed to solve. Now, from pedagogical point of view, we can certainly act in order to increase the demands regarding the rules of bibliographic research and to impose that documentation be done in libraries. We do not believe that this approach would enjoy significant success, particularly in the pre-university education. We believe, however, that the starting point should be represented by youngsters' sympathy for the Internet, an aspect which is real and which needs to be seen as an opportunity that needs to be exploited.

There are three methods that we consider important in this context:

- the first method aims at understanding the importance of training young people in terms of best practices in research done on the Internet. The idea has already been elaborated by Yasmin Kafai and Marcia J. Bates (1997).

We distinguish between searching the Web, understood in the sense of The American Heritage New Dictionary of Cultural Literacy as exploration of the World Wide Web by following one interesting link to another, usually with a defined objective and the Planned search strategy[5], and what is meant by surfing the Web, navigate through the World Wide Web, usually by clicking with a mouse; spending time on the Internet[6].

We emphasize here the fact that searching the Web appears to be a major component of self-education and lifelong learning.

- the second method is to accelerate the efforts already initiated to digitize the culture and human knowledge, to create the digital infrastructure necessary to enable access to knowledge and virtual education of good quality.

The value of many platforms and virtual education programs is already recognized, Matthew M. Chingos and Guido Schwerdt showing in a study from 2014 that there are no significant differences in terms of training between students who have attended a classic system and those who opted for a virtual education (Chingos, M.M. and Schwerdt, G., 2014).

It becomes important in this context to make the distinction between what we generally understand by "virtual education" as education delivered, usually via information technology networks, without restricting the learner in space or time and imply learning via the Internet without any formal requirement to attend a physical campus[7] and what we believe is a new area in education, arising as a result of easy access to existing information in the virtual environment.

From the perspective of virtual education, we believe, in agreement with Ene Cîrnu and Nedelko, that attitude and preparation of the participants for enrolling in virtual education programs are an essential factor in the success of these programs. Thus, it doesn't matter how good a course offered by these programs is if students do not care and fail to organize their learning process. Furthermore, it doesn't matter how useful the information that the students can

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[5] The American Heritage New Dictionary of Cultural Literacy, Third Edition, 2005, published by Houghton Mifflin Company http://www.businessdictionary.com/definition/searching.html

[6] Ibidem, http://dictionary.reference.com/browse/surfing+the+web

[7] http://www.qualityresearchinternational.com/glossary/virtualeducation.htm

find learning in virtual environments is if they are not interested to discover it (Ene Cîrnu, C.E. Nedelko, Z., 2011).

- the third method is based on the conclusion that education for virtual learning should be initiated in stages, starting from primary school, providing benchmarks necessary for efficient and good quality management of the information in the virtual environment.

There are websites that provide excellent summaries of the main issues circumscribed to the use of the Internet as information resource[8], some even talking about education for searching on the Internet[9].

The ability to search and find adequate and correct answers and solutions to problematic situations (in our case by searching the Web) as an indicator of constant learning involves acquiring the balance between technological development and spiritual development (which includes character as a moral-valoric side of personality). We are referring here to those principles, values, social and moral norms whose importance is emphasized in the context of early access to information and knowledge.

Inadequate integration of these aspects in the cognitive architecture of an individual and their incorrect association with pseudo-moral-valoric structures is likely to generate at least unpredictable consequences on the formation of youngsters' personality. It is obvious that in the digital age the role of mentor, guide and counselor of a Professor increases in importance, given that, if it will not be able to honor this task, other sources will solve this (friends, colleagues, etc.).

To apply this approach would require teachers who are able to teach students how to harness the opportunities offered by the Internet, but also to teach them about the dangers and risks they may encounter in the virtual environment and what to do to avoid or mitigate these risks.

In this study, we learn that two things are essential: the awareness of the importance of training youngsters in terms of taking advantage of the Internet resource, of training the teachers to provide good quality mentoring in this sector and the need for early operationalization of a formative approach in this regard.

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