

Usage of Internet Technology in Financial Education and Financial Inclusion by Students of Economics Universities

B. Frączek

I. INTRODUCTION

Abstract—The paper analyses the usage of the Internet by university students in Visegrad Countries (4V Countries) who study economic fields in their formal and informal financial education and captures the areas of untapped potential of Internet in educational processes. Higher education and training, technological readiness, and the financial market development are in the group of pillars, that are key for efficiency driven economies. These three pillars have become an inspiration to the research on using the Internet in the financial education among economic university students as the group of the best educated people in finance. The financial education is a process that allows for improving the level of financial literacy. In turn, the financial literacy it is the set of financial knowledge, skills, awareness and patterns influencing the financial decisions. The level of financial literacy influences the level of financial well-being of individuals, determines the scale of saving of households and at the same time gives the greater chance for sustainable and more predictable development of the financial market with the positive impact on economy. The financial literacy is necessary for each group of society but its appropriate level is desirable especially in respect of economics students as future participants of financial markets as well as the experts and advisors in financial decision making. The low level of financial literacy is the great problem of many target groups in both developing and developed countries and the financial education is seen as the best way of improving this situation. Also the financial inclusion plays the special role in enhancing the level of financial literacy in the aspect of education by practice as well as due to interrelation between level of financial literacy and degree of financial inclusion. Despite many initiatives under financial education, the level of financial literacy is still very low. Scientists still search for new ways of solving this problem. One of the proposal is more effective usage of the new technology in financial education, especially the Internet, because of the growing popularity of e-learning and the increasing number of Internet users, especially among young people who are called the Generation Net. Due to special role of the university students studying the economics fields for the future financial markets, students of four universities from Visegrad Countries (Czech Republic, Hungary, Poland and Slovakia) were invited to participate in the survey. The aim of the article is to present the level and ways of using the Internet technology in financial education and indicating the so far unused or underused opportunities.

Keywords—Financial education, financial inclusion, financial literacy, usage of Internet in education.

B. Frączek is with the Department of banking and Financial Markets, University of Economics in Katowice, Poland (e-mail: b.fraczek@ue.katowice.pl).

IN the wake of the global financial crisis, the importance of financial education increased all over the world. The financial reality is changing, because of the dynamic development of financial markets as well as due to the increasing transfer of risks to households which are more directly responsible for their financial decisions [1], [2]. In today's world, the financial literacy is important for each target group: For women and men [3], for young and old [4], [5] for poor and rich, for uneducated and educated all those who live in both developing as well as developed countries [6]. The proper level of the financial knowledge and skills is important for both individuals as well as financial markets with the serious impact on the economy [7]. The level of financial literacy touches many aspects of people as individuals and as a community in their daily life. It impacts upon their income, employment, and financial well-being [8], [9]. These effects are far-reaching and affect health, security, housing, food, lifestyle, a child's future literacy abilities. The level of financial literacy determines saving for the future, for retirement and for unforeseen circumstances and emergencies [10], [11].

The range of gained financial literacy skills determines feasibility of basic and complex financial tasks and decision-making. It, in turns, affects households' ability to participate in financial markets and it was proven in much research [12]-[14]. Financial literacy results in financial efficiency in using the financial products and investing without losses and unnecessary cost (e.g. paying off credit card bills late, choosing the wrong financial product or paying higher interest rates etc.) [15]. But in this point, it should be underlined that the most of people have transactions accounts, but only fraction of them own bonds, stocks and other more sophisticated financial assets [14]. In addition, the financial literacy may better equip people to deal with macroeconomic and financial shocks [16]. The enhancement of the financial knowledge and skills directly affects the increasing scale of the financial inclusion [17].

A bigger involvement of financially educated individuals in the financial markets facilitates a development and prediction of these markets includes benefits for the financial system and the economy. Financially literate consumers are collectively able to influence the ways that financial institutions are managed and at the same time they may influence on the greater competition, innovation and quality of financial products [18]. Better educated financial consumers understand

cyclical changes in the financial markets and in economy and they are more resilient in harsh economic times. But the fact is that the level of financial education is low [19], [20]. And the situation is not becoming better. People with low financial literacy are often marginalized and excluded from financial decision-making.

Much research on the level of financial literacy is conducted among the young people [21], [22]. The lack of financial knowledge and skills makes them unprepared for the personal money management [23] and at the same time it makes them responsive to financial advertising. They cannot use their banking accounts and credit cards effectively and they are prone to engage in high-cost credit [24]-[26]. These facts threaten their financial security and impact on the quality of their current and future life. Very important is that the level of financial literacy may repeat itself throughout generations of families. The financial world nowadays is difficult to understand and evaluate for people who are unfamiliar with basic financial and economic concepts. The level of financial literacy of societies does not go hand in hand with a development of financial markets addicted to the new technology and subsequently, the differences between the level of complexity of financial markets and the knowledge and skills of individual financial consumers increase. Therefore, effective financial education is needed. Many activities under the financial education do not bring the expected results. The research shows that even a set of financial literacy education programs, mandated by state governments, does not meet the assumed expectations. New solutions are still being considered and at this point, the role of modern technology in effective education should be underlined. The technology supports process of education as well as the assessment of results of this process [27].

Although there is the constant attention paid to the need of financial education directed to the whole of society, the most important target group seems to be the youth. Young people are a very serious group of future financial markets participants. According to demographic data, almost half of all people in the world is under the age of 25 (50,4% in mid of 2016) and individuals between the age of 15 and 24 make up over one-sixth of the world's population (24,3% in mid of 2016) [28]. Therefore, the university students' population is the target group of the research on the possibility of increasing the efficiency of financial education by using the technological innovations in the educational process in the area of finance.

II. RESEARCH PROBLEM AND METHODOLOGY

With respect to the mentioned insights, the aim of this paper is to present situation in the of the Internet by university students of economics fields form Visegrad Group in the process of education with the special emphasis on the financial education. The article underlines the different degrees of usage the Internet in educational processes in finance, taking into account formal, non-formal and informal education.

The following research hypotheses were formulated:

1. The usage of the Internet in education at the university

level may increase the efficiency of financial education carried out in the formal as well as non-formal and informal way and at the same time may increase the level of financial literacy and degree of financial inclusion (by proper financial behavior, habits and patterns).

2. The great potential of the Internet is still untapped.

Therefore, the basic research questions are:

- A. What are the main sources of educational contents for university students who study economic fields in 4V Countries?
- B. Is the Internet commonly used in higher education as a whole and what is its role in the financial education?
- C. What are the main methods of e-learning with using the Internet?
- D. Are there in the various 4V Countries the specificity, differences, preferences in using the Internet and/or traditional (paper) forms include educational contents?
- E. Does the using the Internet influence on higher level of financial literacy and financial inclusion?

The two-stage methodology is designed to answer the research questions, verify research hypotheses and achieve the research goals. The first stage was based on the study of the academic and non-academic literature and it refers to a possibility of using the Internet in formal, non-formal and informal education with the special emphasis on the financial education as well as in the realization of the OECD idea of four pillars of the education: Learning to know, learning to do, learning to live together, learning to be. Additionally, the descriptive analysis of ways of using the Internet in higher education were conducted. The second stage was an empirical survey. The empirical element of the article is the result of a part of a wider survey carried out based on the research granted among students of economics of the Visegrad countries: The Czech Republic – 362 students of University J. E. Purkyne in Usti nad Labem, Hungary - 203 students of the University of West Hungary in Sopron, Poland - 362 students of University of Economics in Katowice and Slovakia - 274 students of the University of Economics in Bratislava, Faculty of Economics and Business in Kosice. The survey was conducted during April-May 2015. The respondents were students who were available during lectures of given universities. However, due to the large number of students at the University of Economics in Katowice, sample surveys were carried out among students available for lectures.

The universities participated in research can be considered as a typical state university, where students-respondents are characterized by a number of similar features, including: The structure of gender, differences in the size of the city they come from and differences in the economic/non-economic education of their parents. Therefore, it can be assumed that the selected research sample is a miniature of the population of students of economics in countries from Visegrad Group (the countries of Central and Eastern Europe).

The study was carried out taking into account the respondent's country and stage of teaching (I – students starting economics study, students of first year of bachelor study, II - students graduating from economic/financial

education, students of last year of master study).

The sections used in the current paper refer to following areas: Basic and extended financial literacy, financial inclusion and the usage the modern technology.

The measurement of financial education efficiency has taken into account the basic level of financial literacy and uses the questionnaires available in the literature containing a concept of simple and compounding interest, inflation, portfolio diversification [20], [29] as well as expanded level of personal finance containing the fundamentals of derivatives market. The degree of financial inclusion is measured by the prism of having account, savings and borrowing the money in formal financial institutions – on the base of World Bank research [30], [31].

The section refers to the usage of modern technology where the following have been examined: Forms, preferences and sources of educational contents (including Internet), forms of e-learning with the special emphasis on the applications of the Internet in education, types of tools used by students undergoing financial education. In the research, the descriptive statistics methods are used.

III. THE ROLE OF USING THE INTERNET IN HIGHER EDUCATION IN FINANCE

The Internet plays a significant role in today's lives. It is possible to use it always and everywhere: In schools, colleges, universities, in the workplace, and at home. From the point of view of the financial education, it is the medium of the educational contents and the common distribution channel of financial products and services.

Participants of the financial markets need the individual and unique knowledge and skills in many cases. The Internet and other technological innovations may help in both achieving the theoretical knowledge as well as the financial practice (education by practice).

The educational process (teaching and learning) may be carried out in formal, non-formal and informal ways [32]:

Formal education represents organized, systematic, structured and administered education model according to a given set of laws and norms. The typical for this kind of education is the mono-directional methodology, which is used regardless of the number of students in the course. It is usually ineffective and scarcely creative and it does not stimulate students to their active participation in the process of education. The usefulness of the education for the student's personal and professional growth is neglected. The formal higher education in the finance comprises mainly studying at the universities. A lot of researchers point on benefits of using the Internet in formal education. They argue that the Internet is used in education because it facilitates learning, teaching and communication [33]. It is also possible to find a great deal of information online at every time. In the finance, it may be used to update the financial data and information during lessons and classes under formal education.

In opposite to the formal education, the non-formal education is focused on the student and his previously identified needs and possibilities. It is the intentional from the

learner's point of view. The other very important characteristic of the non-formal education is immediate usefulness of the education for the student's personal and professional growth. It is carried out by studying voluntarily with a teacher who assists students with their self-determined interests, by using an organized curriculum. Non-formal education is comprised of a wide variety of educational situations. In today's world, very important and popular educational processes which fall within the scope of non-formal education are "correspondence learning" and "distance learning" in the area of finance as well as "open systems" in the form of online courses in the field of finance, accounting and financial management. The sets of educational contents (usually for free) are provided by banks, stock exchanges and other stakeholders interested in and responsible for financial education of societies.

The informal education differs from both formal and non-formal education. It does not refer to an organized and systematic education and it does not include the objectives and subjects usually encompassed by the traditional curricula. From the point of view of students, it means the learning resulting from daily life activities related to finance. It is not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification. It supplements both formal and non-formal education. In the finance area, the informal education means education by practice. It is carried out by participating in financial markets but also by listening to the radio, watching TV, visiting banks and other financial institutions. In addition, very important element of informal education may be the financial data analysis during the financial decisions making. Most of these activities may be carried out via the Internet.

The Internet facilitates the realization of four pillars of the education promoted by UNESCO: Learning to know, learning to do, learning to live together, learning to be [34].

Learning to Know: Internet allows for improved access to the educational contents in online encyclopedias, books, articles, reports, databases, etc. It also provides opportunity for deeper drilling the achieved information in learning processes in shorter time. The Internet as the medium helps its users select an item for study and help delve more deeply into a related topic with links to databases and other online sources of knowledge. It facilitates the more effective educational processes in Finance. It should be underlined that Internet allows increasing the low level of financial literacy of various unprivileged groups as well as all societies in many countries all over the world. Most of participants of financial markets are uncertain about many concepts and parameters characterizing financial markets, and they learn about these parameters by observing data. This learning is facilitated by the existence of large quantities of financial data available via the Internet. This way of education provides the general teaching and learning together with the deepening knowledge and at the same time promotes the idea of *life long learning*.

Learning to Do: This idea was invented in order to acquire both an occupational skill as well as the competence to deal with many situations and work/education in teams. Effective financial education helps people to deal with macroeconomic

and financial shocks [16]. The realization of the idea "Learning to do" helps in increasing the degree of financial inclusion, because it facilitates access to a wide range of regulated financial products and services and broadening their use by all segments of society. [35]. This idea also means young peoples' various financial experiences which may be informal, as a result e.g. participating in financial markets (banking account, payments cards, carrying out transactions at the stock exchanges and forex), or formal and non-formal, involving courses, alternating regular study and work. The using of Internet accounts, the information and financial data served via Internet, etc. in such situations is unquestioned.

Learning to Live Together: This idea tends to develop an understanding of other people and an appreciation of interdependence - carrying out joint projects, the cooperation and exchange of experience and this way contribute to enhance positive relation among people. It is more and more popular to use Internet platforms to realize many projects, including projects in financial area. It is very popular especially among young people, for whom the Internet environment is well known. Other examples of using the Internet in learning to live together in the area of finance are social networking sites for students, scientists and researchers to share papers, ask and answer the questions, and find collaborators (e.g. Facebook or ResearchGate).

Learning to Be: This pillar of learning allows to develop one's personality, personal responsibility for own actions and the implementation of own goals. In today's world, the Internet helps to appear and exist in many different groups, in society. The financial education, including formal and informal financial education via Internet gives the possibility to be an active investor, to participate in finance forums, to be participant of the financial markets.

At this point, it should be noted that the role of the universities in the education changed (as a whole), because of the technological and civilization progress. The importance of non-formal (e.g. different forms of distance education) and informal (e.g. education by practice) learning definitely increases. The "center of gravity" from formal, to non-formal education processes is displacing. These changes are characteristic for many fields of education, including finance, where the importance of practice still increases.

The contemporary concept of teaching is often held in accordance with rule "tell me and I will forget, show me and I may not remember, involve me and I will understand". Very important role in distance education and financial practice, e.g. participating in financial markets, analyzing the financial data plays the Internet.

There is the long list of advantages of usage of the Internet in education. Among them are better outcomes of learning and the better chances for carrying out all pillars and ideas of education, especially among young people who are seen as the Generation Net. This group has a greater predisposition for optimal use of the Internet in the process of formal, non-formal and informal education in a conscious and more effective way.

In comparison to traditional learning, learning via Internet

makes studying the finance easier. The Internet helps in quickly master financial skills at different level of the financial situation complexity.

Students may start from observing the financial data, using financial demos, financial calculators and different analytical tools available in the Internet. They may visit financial forums and discuss many financial problems because the Internet is the great medium of communication.

The Internet allows for better and more effective realization all the Government's objectives for financial education by easier, faster and cheaper access to the final beneficiaries of education.

IV. WAYS OF USING THE INTERNET IN HIGHER EDUCATION

The Internet is very important element of e-learning, which is usually understood as the intentional use of networked information and communications technology in educational processes [36]. There are used the alternative terms for the e-learning in the literature, like online learning, network and web based learning but sometimes there is explanation the differences in current terminology [37].

The Application of the Internet in Education (AIE) is enormous. In the literature, there are different typologies of AIE [38], which present these great number of possibilities. Many descriptions of AIE take into account e.g. used telecommunication tools, skills level of teachers and learners in computer and telecommunication tools, interaction between the participants of the educational process (types of communication), types of communication methods and the kinds of "pedagogical techniques" or teaching methods.

In this article, the most popular typologies will be presented. They take into account types of used Internet tools, skills level of teachers and learners in computer and telecommunication tools, interaction between the participants of the educational process (types of communication).

TABLE I
 INTERNET TOOLS FOR ONLINE TEACHING

Internet tools	Skills level of teachers and learners in computer and telecommunication tools			
e-mail, discussion lists	L	M	H	E
	O	E	I	X
	W	D	G	P
online lecture notes delivered via the Web		I	H	E
		U		R
		M		T
interactive web tutorials, designed for the course and student interaction virtual environments, giving the participants possibility of co-operative activity (like Multi User Dimension, MUD)				

Students may use the Internet in educational processes by their personal computers (laptops), telephone (smart phone) or other mobile tools (e.g. tablets). Sometimes the presented typology also includes the telecommunication media to collect information on interactive technologies in educational programs (telephone, fax, audio-conference, video-conference, electronic mail, access to databases). Table I presents the most

popular Internet tools used in the education assigned to skills level of teachers and learners in their usage.

The next typology is focused on types of communication. This criterion may be presented (among others) in accordance with possible combinations of the participants in the communication process, as following:

- *Single communication type* – includes the situations involving an information inquiry (e.g. online resources software: browsers, search systems, Telnet-terminals),
- *One-to-one* – includes bilateral communication (e.g. electronic mail).
- *One-to-multitude* – includes the cases when the information is distributed from one source to many recipients (e.g. listservers, BBS and WWW).
- *Multitude-to-multitude* – includes multilateral multi-directional communication, where all participants in communication have the same status (e.g. www, synchronous and asynchronous teleconferencing, and virtual reality systems with embedded programming language (Multiple User Domains – MUD, MUD Object Oriented – MOO)).

There are in the literature also the typologies of the Internet tools, using in the education under e-learning, with multiple criteria. One of them divides the Internet usage into the four modalities, taking into account educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously [39].

TABLE II
 THE APPLICATIONS OF THE INTERNET IN EDUCATION

Individualized self-paced e-learning online	Individualized self-paced e-learning offline
Student is accessing learning resources such as a database or course content online via an Intranet or the Internet. An example: The student studying alone or conducting some research on the Internet or a local network.	Student is using learning resources such as a database or a computer-assisted learning package offline (i.e. after the previous connection to an Intranet or the Internet). An example: A student working alone off a hard drive on gathered materials, (also using CD or DVD).
Group-based e-learning synchronously	Group-based e-learning asynchronously
Groups of students are working together in real time via the Internet or an Intranet. An example: Students engaged in a real-time chat or an audio-videoconference.	Groups of students are working over the Internet or an Intranet, where exchanges among participants occur with a time delay. An example: Online discussions via electronic mailing lists.

The Internet and its tools swiftly entered the daily life and were adopted in education. But there are many factors, which influence the effectiveness of the Internet usage in learning and teaching. One of them is the ability of a user to work with information provided via Internet. In the finance area, it means having the skills of collecting educational contents, data and information, the proper selection of these data and facts, analyzing the information, dealing with the information and data as well as using many different analytical tools available on the Internet. The second factor which impacts the efficiency of using the Internet in education are skills of intercultural communication in network. It is important during setting different educational materials in international

environment as well as during learning by practice at the stock exchange, forex, etc. where a special language with many abbreviations is required. The next factor is adequately prepared teachers who are open to the new ideas, new practices and technologies. The lack of teachers, who are familiar with modern technology and who can benefit from using of the Internet as an additional teaching resource is very serious inconvenience.

Today's dynamic financial environment requires very special features of its participants. They should accept the changes in the world that surrounds them and at the same time should be creative and innovative. And this requires preparing teachers who introduce potential participants of financial markets in such dynamic world. The teachers should have the skills to produce these desired student's attributes like opening to new ideas, new practices and technologies. The usage of the Internet in the financial education meets a lot of needs but also entails some minor inconveniences and threats. The financial education using the information and data available via the Internet is hampered by the huge amount of randomness pervading financial markets. Besides, some programs, scientific articles with educational contents are free to be copied and distributed while others have copyright that limits distribution.

Today, anyone can post a multimedia web page and students, often "surf the web" for information. Therefore, skills of the directing and harnessing Internet has become one of the greatest challenges faced by all stakeholders involved in.

V. EMPIRICAL RESEARCH

Having identified main findings on possibility of using the Internet in the financial education, it is important/worth to analyze how it works in practice. The undertaken study should be regarded as preliminary and necessary part of wider research, conducted in order to seek the most effective and the most optimal methods of financial education using the Internet.

At the beginning, it should be highlighted that for university students the Internet is the great potential, because 100% respondents (students of economics fields in Visegrad Countries) are Internet users. In this point, it is worth to note that percentage of Internet users in all population in mid 2016 amounted to 49,2% for the World, 73,9% for Europe, 88,4% for Czech Republic, 80,2% for Hungary, 72,4% for Poland and 82,5% for Slovakia [40].

The first result of research shows that Internet is very popular source of educational content, notably when it is not directly related to the fields of the studying. The use of the Internet for educational purposes e.g. to getting to know the specifics of a phenomenon, to explaining any concepts, to use dictionaries or virtual encyclopedias etc. is very high.

Presented very high Internet usage as a source of knowledge probably follows that in the fields which are not subject of studying people do not have the appropriate materials and the usage of the Internet is the simplest and the fast way to get the data or the information.

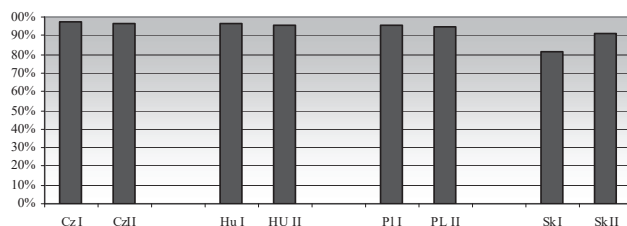


Fig. 1 The usage of Internet for educational purposes not directly related to the fields of study

The results of research show that the use of the Internet as the source of educational content in the studying fields (e.g. economics or finance) is not so high. Fig. 2 presents the scale of Internet usage in financial education in comparison to traditional paper version of materials form lectures, books, reports and etc.

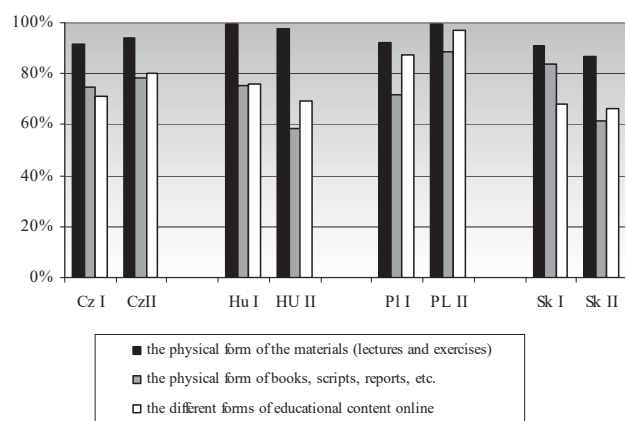


Fig. 2 Usage of the different form of educational content (in finance) by students of economics fields

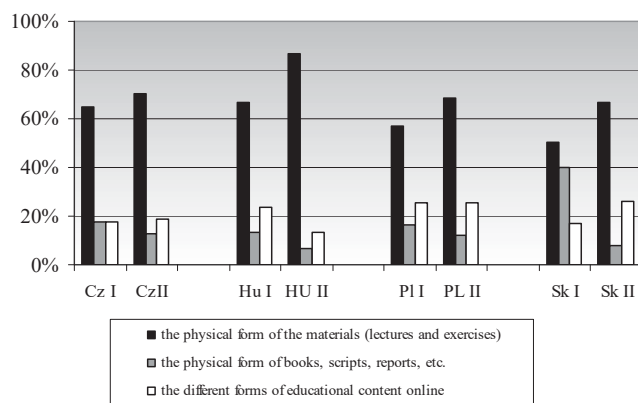


Fig. 3 The most preferred forms of learning under process of financial education

Although almost all (100%) students-respondents declared the usage of Internet as a whole, not all of them use it in educational process during study (Fig. 2). More detailed research shows the place of Internet as the source of educational content. It turns that the Internet is not favorite form of learning among respondents (Fig. 3). In each country and at every level of study, students prefer and use the

traditional educational form, source of educational content like physical form of the materials form lectures and exercises.

As it is described in the theoretical part of the paper in financial education very important is education by practice. Therefore, the using the Internet for comparing offers of financial market is examined - e.g. if students want to take the advantage of the financial market's product like bank account, credit card, insurance, investments and other savings and investment products. Results of this part of research show that students finishing their university financial education (II) use the Internet to compare the financial products more often than students starting their financial education (I). The reason is probably higher knowledge and better understanding after financial education and financial practice during study. But the differences are not significant and they do not meet expectations of the Authors. In addition, in many cases students who achieved the best score in the test on financial education more often use the Internet to find the information about the products of financial markets. This suggests that the use of Internet may be helpful in more effective financial education.

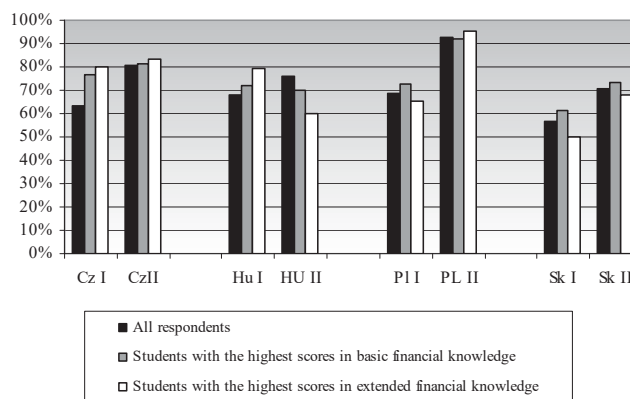


Fig. 4 Using the Internet for comparing offers of financial market - education by practice

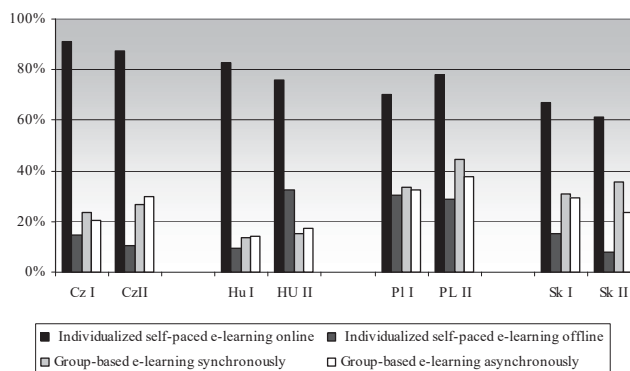


Fig. 5 The usage of various applications of Internet in financial education among the students-respondents (multi-choice question)

For examining the usage of Internet in educational process in finance, it is worth to explore the popularity of the various applications of the Internet in education described in Table II in the theoretical part of the paper.

Definitely, the most often used form is individualized online e-learning. The research shows that the most popular way of usage of the internet is the alone on-line study and the other applications (e.g. education off-line and group-based e-learning) are used by minority of the students. Such situation confirms the untapped opportunities offered by contemporary modern technologies in educational processes. And this time, the situation is diverse in particular researched countries.

In the next multi-choice question students pointed the types of Internet possibilities, tools they use in the financial education.

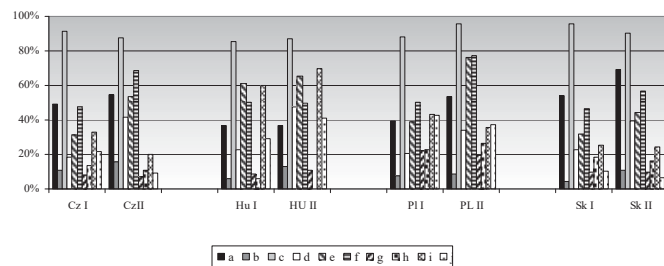


Fig. 6 Internet tools used in the financial education: a. E-mailing (Thematic student-to-student correspondence); b. E-mailing questions to the experts; c. Google – looking for the information; d. Google Scholar (E-books, E-articles); e. Financial portals; f. Websites of financial institutions (banks, brokers, stock exchanges, etc.); g. Interactive web tutorials, h. Active educational cooperation with other Internet users in virtual environments (discussions, videoconferences); i. Virtual educational content prepared by your teachers; j. Virtual educational content of your friend

The results of research show that most popular is the Google way of searching the Internet for the information. But it should be noted that the Internet is not an ordinary encyclopedia. It is rather a disorganized database to which everyone can contribute. Therefore, users should be equipped in ability and skills of selection and evaluation of searched information.

Specificity of area of financial education causes that the next very important Internet tools are websites of financial institutions like banks, brokers, stock exchanges, etc. as well as the financial portals. These sources of knowledge supply a lot of worth information and educational content under education by practice.

Important finding is that prevailing and most popular Internet tools refer to individual and self education. But Internet also offers the tools facilitate common education of many stakeholders, e.g. many students, students and teachers, students and experts, etc. under mailing, discussions, videoconferences. In this group of tools, the most popular ones are: looking for the information and thematic student-to-student correspondence and sometimes virtual educational content prepared by teachers. The less popular ones are still interactive web tutorials and questions to the experts. Also the reviewed e-books and virtual version of the articles on Google Scholar are not popular among the students.

Next aspect of the research is financial inclusion. Having banking account, saving money in the banks or borrowing

money from the banks are the most important areas of financial inclusion. In the research, there are undertaken the efforts to measure the percentage of all respondents involved in listed areas in comparison to students who carry out education by practice. The intention of this aspect of the research was examining and underlining the relationship between the education by practice and the real participation in financial market. The results show that the various level of active participating in particular fields of financial markets (banks offers) which may be seen as education by practice, are very often supported by modern technology. Thus, modern technology facilitates both financial literacy and financial inclusion.

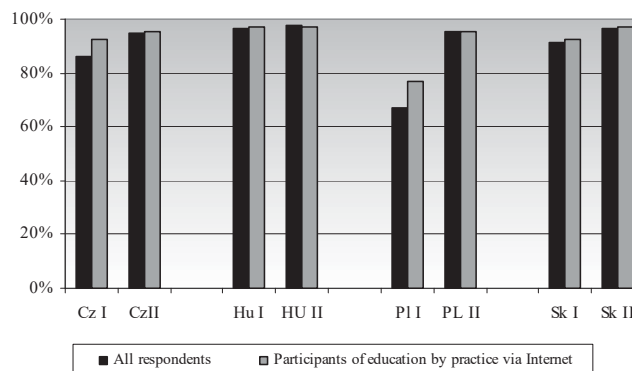


Fig. 7 Having account in formal financial institutions

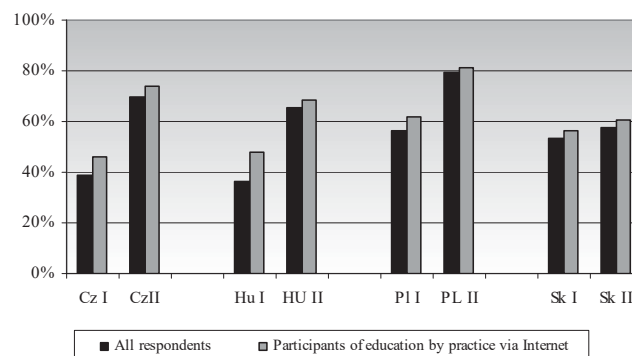


Fig. 8 Savings in formal financial institutions

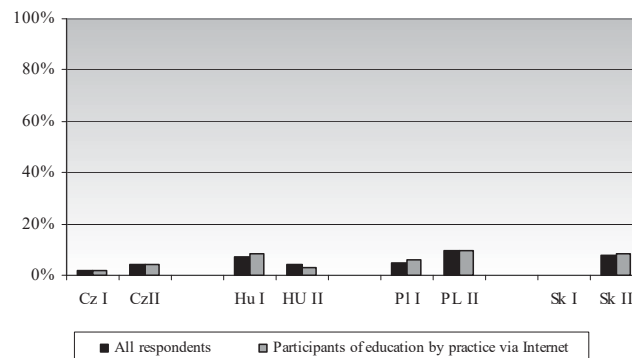


Fig. 9 Borrowing money from the banks

VI. CONCLUSION

Effective education including higher education, technological readiness, and the financial market development are indeed in the group of pillars that are key for efficiency driven economies [41] and that is why the usage of Internet in financial education at the university level is underlined in current paper. The Internet affords a big number of flexible ways of its usage in education. This flexibility means access and use the educational content at a time, place and pace that is suitable and convenient to individual students. It is especially important form of education in area of finance, where the information is changing very quickly and where students use high-frequency data.

Conducted research confirms the influence the using of the Internet on the level of financial literacy and on the degree of financial inclusion on the example of 4V Countries. This relationship should be also examined in wider range under each group of students (in different fields of study). It may help to assign the specificity of using the Internet or other technological innovations to education in different areas. The specificity of different fields of study influencing the level of using the Internet in formal education may reflect on the range and the scale of using the Internet in non-formal and informal education. The research shows that big number of students use the Internet in their informal financial education, including education by practice. But, the degree of the usage of the Internet in it is unknown and probably it is not filled. A very large of possibilities given by the Internet are still not realized in education. The results of research present the scale of usage of basic Internet tools and techniques e.g. e-mailing in thematic student-to-student correspondence), e-mailing in asking the questions to the experts, Google – looking for the information, Google Scholar – using e-books, e-articles, financial portals, websites of financial institutions (banks, brokers, stock exchanges, etc.), interactive web tutorials, active educational cooperation with other Internet users in virtual environments (discussions, videoconferences), virtual educational content prepared by teachers, virtual educational content of friends and many others. The most popular are the simplest ways of using the Internet in education, e.g. looking for the information in web browsers or e-mailing, while the ways, allowing for achieving the most valuable educational contents like reviewed e-books, e-articles available on Google Scholar or interactive web tutorials are used marginally.

The main goals of contemporary education are intellectual and moral development of students, their critical and creative thinking and their ability to work with information. Therefore, the non-formal and informal education developed and the Internet plays crucial role in these types of education, especially in education directed to youth as the Generation Net.

The undertaken research, aimed in verifying the possibilities of the Internet usage in learning at the university level, clearly shows that students from researched countries use the Internet in educational process but in unsatisfactory degree and range. The question is: What is the reason? The different preferences in the types of materials/sources used in

the formal education is probably results of range and quality of educational contents, their accessibility, specificity of learning in given field of study as well as the ability and skills of searching and verification the information and data. But the reason of unsatisfactory usage of the modern technology, including Internet technology may also be lack of developed standards where educational systems using the modern technologies can be utilized in practical academic environment. This problem was underlined many years ago [42] and still is actual.

The education in the finance especially in the area of investment and savings comes to getting to know and understanding the financial concepts and observing data, calculating and analyzing the current data, and also real practice in the finance. In all these aspects the education via the Internet is very helpful and may be carried out in very simply way (by using demos, financial calculators, analytical programs as well as free access to Internet courses and many educational contents).

The attention should be also paid to the need for complementarity and joining of formal, non-formal and informal education and cooperation between institutions forming and representing all forms of education [43].

ACKNOWLEDGMENTS

B. Frączek thanks International Visegrad Fund for its financial support, which made it possible to integrate the scientists from 4V Countries and conduct the international research under the project titled “Financial knowledge and skills of young future economists in 4V Countries”, ID 21420287.

REFERENCES

- [1] A. Lusardi, “Household Saving Behaviour: The Role of Financial Literacy, Information and Financial Education Programs”, NBER Working Paper 13824 February 2008, (online) <http://www.nber.org/papers/w13824.pdf> (Accessed January, 2016).
- [2] P. Muller, S. Devnani, R. Heys, J. Suter, “Consumer Protection Aspects of Financial Services”, European Parliament, Policy Department A: Economic and Scientific Policy, Brussels, 2014, [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/507463/IPOL-IMCO_ET\(2014\)507463_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/507463/IPOL-IMCO_ET(2014)507463_EN.pdf), (Accessed 7 July 2016).
- [3] OECD/INFE “Addressing women’s needs for financial education” OECD, (online) http://www.oecd.org/daf/fin/financial-education/OECD_INFE_women_FinEd2013.pdf, (Accessed February, 2016).
- [4] A. Lusardi, O. Mitchel, V. Cursto, “Financial Literacy among the Young”, The Journal of Consumer Affairs, Vol. 44, No. 2, 2010, (online) <http://www.councilforeconed.org/wp/wp-content/uploads/2011/11/Financial-Literacy-for-Young-Lusardi.pdf>, (Accessed March, 2016).
- [5] M.S. Finke, J.S. Howe, S.J. Huston, “Old age and the Decline in Financial Literacy”, 2011, (online) <http://www.tilkingroup.com/texastech.pdf> (Accessed February, 2016).
- [6] Ch. Bumcort, J. Lin, A. Lusardi, “The Geography of Financial Literacy: A Report, Financial Literacy Center”, November, 2011, p.10.
- [7] D. Šoškić, “Financial literacy and financial stability”, Keynote speech, Governor of the National Bank of Serbia, at the Bank of Albania 9th International Conference Building our future through financial literacy, Tirana, 15 September 2011, (Accessed 5 July 2015).
- [8] M.K. Taft, Z.Z. Hosein, S.M.T. Mehri, A. Roshan, “The Relation between Financial Literacy, Financial Wellbeing and Financial Concerns”, International Journal of Business and Management; Vol. 8, No. 11, 2013, pp.63-75.

- [9] M. Rooij, A. Lusardi, R. Alessie, Financial Literacy, "Retirement Planning, and Household Wealth", De Nederlandsche Bank, Working Paper No. 313, August, 2011.
- [10] F. Deuflhard, D. Georgarakos, R. Inderst, "Financial literacy and savings account returns", Working Paper Series, European Central Bank, 2015.
- [11] S. Cole, G.K. Shastry, "Smart Money: The Effect of Education, Cognitive Ability, and Financial Literacy on Financial Market Participation", Harvard Business School and Wellesley College, September 2010, (online) <http://www.theigc.org/sites/default/files/sessions/cole-lse.pdf> (Accessed January, 2016).
- [12] A. Thomas, L. Spataro, "Financial Literacy, Human Capital and Stock Market Participation in Europe: An Empirical Exercise under Endogenous Framework", Discussion Papers del Dipartimento di Scienze Economiche – Università di Pisa, 2015, (online) <http://www.ec.unipi.it/documents/Ricerca/papers/2015-194.pdf> (Accessed February, 2016).
- [13] E. Acquah-Sam, K. Salami, "Knowledge and Participation in Capital Market Activities: The Ghanaian Experience", International Journal of Scientific Research in Education, June 2013, Vol. 6(2), pp.189-203.
- [14] S. Cole, G.K. Shastry, "If You Are So Smart, Why Aren't You Rich? The Effects of Education, Financial Literacy and Cognitive Ability on Financial Market Participation", 2007 (online) <http://www.bostonfed.org/economic/cprc/conferences/2008/cfrg-october/cole-shastry-rich.pdf>, (Accessed January, 2016).
- [15] C. Bell, D. Goran, J. Hogarth, "Does Financial Education Affect Soldiers' Financial Behavior?", Working Paper 2009-WP-08, Networks Financial Institute, 2009.
- [16] L.F. Klapper, A. Lusardi, G.A. Panos, "Financial Literacy and the Financial Crisis", NBER Working Paper No. 17930, Cambridge, March 2012, (online) <http://www.nber.org/papers/w17930.pdf> (Accessed March 2016).
- [17] M. Cohen, C. Nelson, "Financial Literacy: A Step for Clients towards Financial Inclusion", 2011 Global Microcredit Summit, Commissioned Workshop Paper, November 14-17, 2011 – Valladolid, Spain, 2011, (online) http://partnershipsagainstpoverty.org/wp-content/uploads/2013/03/CohenM_Financial_Literacy.pdf (Accessed February, 2016).
- [18] T. Japelli, "Economic Literacy: An International Comparison", The Economic Journal, November, Vol. 120, Iss. 548, 2010.
- [19] L. Klapper, A. Lusardi, P. Oudheusden, "Financial literacy around the World – insights from S&P Ratings", 2015 Global Financial Literacy Survey, 2015, (online:) http://media.mhfi.com/documents/2015-Finlit_paper_17_F3_SINGLES.pdf (Accessed 15 June 2016).
- [20] A. Atkinson, F. Messy, "Measuring Financial Literacy: Results of the OECD / INFE Pilot Study", OECD, Working Papers on Finance, Insurance and Private Pensions, No. 15, OECD Publishing, 2012, pp.446-448.
- [21] OECD (2014), PISA 2012 Results: Students and Money: Financial Literacy Skills for the 21st Century (Volume VI), PISA, OECD Publishing.
- [22] M.S. Sherraden, L. Johnson, B. Guo, W. Elliott, "Financial Capability in Children: Effects of Participation in a School-based Financial Education and Savings Program". Journal of Family & Economic Issues, 32(3), 2011, pp.385-399.
- [23] NCEE (2016) Survey of the States: Economics and Personal Finance Education in Our Nation's Schools, National Council on Economic Education's (NCEE), <http://councilforeconed.org/wp/wp-content/uploads/2016/02/sos-16-final.pdf>, (Accessed July, 2016).
- [24] FINRA Investor Education Foundation (2013) Financial Capability in the United States-Report of Findings from the 2012 National Financial Capability Study. <https://www.federalreserve.gov/pubs/feds/2014/201468/201468pap.pdf> (Accessed June, 2016).
- [25] L. Mandell, L. Schmid Klein, "The Impact of Financial Literacy Education on Subsequent Financial Behavior", Journal of Financial Counseling and Planning Volume 20, Issue 1, 2009, pp.15-24.
- [26] N. May, "Undergraduate students and credit cards in 2004: An analysis of usage rates and trends", Wilkes-Barre, PA: Sally May Inc., 2005.
- [27] J.G. Laborda, D.G. Sampson, R.K. Hambleton, E. Guzman, "Guest Editorial: Technology Supported Assessment in Formal and Informal Learning", Educational Technology & Society, 18 (2), 2005, pp.1-2.
- [28] Population Pyramids of the World (2015). (online) <http://populationpyramid.net> (Accessed July, 2016).
- [29] L. Xu, B. Zia, "Financial Literacy around the World", Policy Research Working Paper 6107, The World Bank Development Research Group, 2012, (online:) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2094887, (Accessed March, 2016).
- [30] World Bank (2015), "The Little Data Book on Financial Inclusion", The World Bank Group, <https://openknowledge.worldbank.org/bitstream/handle/10986/21636/9781464805523.pdf?sequence=3>, (Accessed March, 2016).
- [31] World Bank (2012), "The Little Data Book on Financial Inclusion", The World Bank Group, <http://data.worldbank.org/sites/default/files/the-little-data-book-on-financial-inclusion-2012.pdf>, (Accessed March, 2016).
- [32] D. Colardyn, J. Bjornavold, "Validation of Formal, Non-Formal and Informal Learning: policy and practices in EU Member States", European Journal of Education, Vol. 39, No. 1, 2004, pp. 69-89.
- [33] A. Sayed, M. Mahmoud, M. "Exploring the Process of Integrating the Internet into English Language Teaching", Paper presented at the Academic Conference for Young Researchers in Asyut, Egypt on Apr. 24 2007. EBSCOHost. <http://web.ebscohost.com.webproxy.student.hig.se:2048/ehost/search/advanced>, (Accessed January, 2016).
- [34] UNESCO (1996) 'Learning: The Treasure Within, UNESCO-report' (online) <http://unesdoc.unesco.org/images/0010/001095/109590eo.pdf> (Accessed January, 2016).
- [35] A. Atkinson, F. Messy, "Promoting Financial Inclusion through Financial Education: OECD/INFE Evidence, Policies and Practice", OECD Working Papers on Finance, Insurance and Private Pensions, No. 34, OECD Publishing, 2013, (online:) <http://dx.doi.org/10.1787/5k3xz6m88smp-en>, (Accessed January, 2016).
- [36] V.K. Gandhi, "A Review Study on E-Learning for the Empowerment of Teaching and Learning in Higher Education", Journal of Education and Practice, Vol 2, No 10, 2011, (online) <http://iiste.org/Journals/index.php/JEP/article/viewFile/780/683> (Accessed April, 2016).
- [37] S. Tsai, P. Machado (2002) "E-learning, online learning, web-based learning, or distance learning: unveiling the ambiguity in current terminology". E-learn Magazine, (online:), <http://elearnmag.acm.org/archive.cfm?aid=568597>, (Accessed August, 2016).
- [38] A. Khannanov, "Experience of Internet Usage in Education", Analytical Survey (in:) Internet in Education, UNESCO Institute for Information Technologies in Education IITE, Moscow 2003, pp.14-16.
- [39] S. Naidu, "E-learning. Guidebook of Principles, Procedures and Practices", CEMCA, New Delhi, 2006, (online) http://cemca.org.in/ckfinder/userfiles/files/e-learning_guidebook.pdf (Accessed January 2016).
- [40] Internet World Stat (2016). (online) <http://www.internetworldstats.com/stats.htm>, (Accessed July 2016).
- [41] K. Schwab, K. (Eds.) "The Global Competitiveness Report 2014-2015", World Economic Forum, Geneva 2014, (online:) http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2014-15.pdf (Accessed March, 2016).
- [42] A. Patel, A., Kinshuk "A Conceptual Framework for Internet based Intelligent Tutoring", (in:) A.Behrooz, (Eds.), "Systems Knowledge Transfer", Volume II, pAce, London, UK, 1997, pp.117-124.
- [43] B. Frączek, "Coordinated actions in the field of financial education as a new approach to improve financial literacy", International Journal of Business Excellence, Vol.8 (4), 2015, pp.514-535.