



## WEB-BASED TOOLS TO SUPPORT CONTINUING TRAINING OF TEACHERS

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**Abstract:** *The purpose of the present paper was to research teachers' awareness of the benefits of using different web-based tools for non-formal qualification. The continuous education and its various forms – formal, non-formal and informal – have been analyzed. Based on the analysis of the nature and current status of non-formal education have been examined options of its implementation and integration with the traditional forms of education in Bulgaria. Eighty teachers from 6 regions participated in a small-scale research. The empirical material has been collected through an anonymous questionnaire with 22 closed questions and sub-questions included. Based on the results and its analysis the teachers will be able to properly choose the supplementary software, which can be offered to students on an individual basis, based on their specific learning needs.*

**Key words:** *non-formal education, web-based tools, continuing teachers' training*

### 1. Introduction

The education has been the cause of debate mainly because it was in high on the agenda of each society from the past to nowadays; it has seen both declines and increases and is gradually shifting and changing – as it must in order to remain useful.

The quotations above point to the importance of continuous education and the various forms it can take: formal, non-formal and informal education. In this point of view the question about the role of continuing training of teachers, as a meeting point of three forms of education, is becoming one of the most important with regard to improving the effectiveness of education. In the course of practical activities necessary skill sets and habits are acquired, which are crucial for the formation of professional and specialized competencies.

While it has been argued by authors such as McGinvey that making the distinction between these three subsets is arguable at best, each of them – formal, non-formal and informal has involved to where it currently stands and each has a clear concise frame in which it can be viewed [1].

Despite between the distinctions existing for numerous years, not all agents has involved into educational process in Bulgaria are aware of them

and the benefits they offer as different types of education. This can be best explained as “Non formal learning is knowledge, imagination, creativity, professionalism, faces, friends, feelings, future, life itself.” [2].

Due in the ambiguity of this thesis topic there is need to further description of the three main categories of learning.

*Formal education* is a systematic approach to learning, based on a more often than not rigid curriculum. It is held within a predefined structure, which generally revolves mainly around education – kindergarten, school, high school, college, university.

The best known statement comes from the work of Combs with Prosser and Ahmed: “Formal education: the hierarchically structured, chronologically graded ‘education system’, running from primary school through the university and including, in addition to general academic studies, a variety of specialised programs and institutions for full-time technical and professional training” [3].

Formal education covers a large number of topics that are deemed by the society in charge of the specific formal educational program as knowledge that should be wide-known to all of society, in other words – common knowledge. An appropriate distinction, as cites by Dib [4], is that

formal education is characterized by a continuous process called “presential education” [5].

*Non-formal education* is an approach to learning that is similar to formal education, but in differs in a few unique ways. What is defined as non-formal is all that is outside the subset of formal education, but which can still be viewed as an organized educational activity. This is done in acknowledged and structured courses, schools the goal being a certificate, diploma or other qualification.

According to Coombs and Ahmed: “Non-formal education: any organised educational activity outside the established formal system – whether operating separately or as an important feature of some broader activity – that is intended to serve identifiable learning clienteles and learning objectives” [3].

It can be part of a separated group-based activity, or done individually. It requires a clear objective to be set beforehand, much like in formal education. Typical examples of non-formal education would be the act of self-teaching, group activities – language or art courses – which are also linked to receiving a document, but not one that is equal to a degree.

Tight suggests that whereas the latter concepts have to do with the extension of education and learning throughout life, non-formal education is about ‘acknowledging the importance of education, learning and training which takes place outside recognized educational institutions’[6].

Due to its position of being the border between formal and informal education and learning, many countries argue over its principal position within the educational subtypes.

*Informal education* is a lifelong process of accumulating experience, skills, attitudes, and views as well as general knowledge. The most accepted definition is: “Informal education: the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment – from family and neighbors, from work and play, from the market place, the library and the mass media” [3].

The TALIS definition of teachers’ professional training recognises that teachers’ development can be provided in many ways, ranging from the formal to the informal [7]. According to research, related with the reason why do teachers participate in professional development we can point that “Teaching competencies are thus complex combinations of knowledge, skills, understanding, values and attitudes, leading to effective action in situation ... Teachers’ continuous professional development is, thus, highly relevant

both for improving educational performance and effectiveness and for enhancing teachers’ commitment” [8]. The next TALIS report established that teachers’ needs for professional development on the second and the third place are related with “ICT skills for teaching” and “New technologies in the workplace” [9].

One look at the current situation in Europe shows that there is a shortage of teachers at the European level - 60% are over 40 years and it is important to find new, better training modules for the practical training of teachers, to find the starting point to achieve these competences. One of ways is effectively using the technologies of the informational society.

This focus the efforts to investigate teachers’ knowledge about computers’ operating systems, browsers and other data and the ways of implementation of web-based tools in the non-formal professional training.

## **2. Description of the research of teachers’ background information of the benefits of using different web-based tools for non-formal qualification**

*The purpose:* To research teachers’ awareness of the benefits of using different web-based tools in order to non-formal qualification.

*Materials:* Eighty teachers from 6 regions in Bulgaria (Pleven, Dobrich, Shumen, Varna, Vidin and Lovech) participated in a small-scale research. The empirical material has been collected through an anonymous questionnaire with 22 closed questions and sub-questions included. The questionnaire has conducted for the purpose of the study.

*Methods of theoretical study:* peer-reviewed research, analysis and summary of the specialized scientific and methodological literature and information sources.

*Methods of empirical results’ establishment:* 1. Sociological methods - non-standardized questionnaire. 2. Descriptive analysis. 3. Comparative analysis 4. Mathematical and statistical processing of data has been carried out with the software SPSS 19.

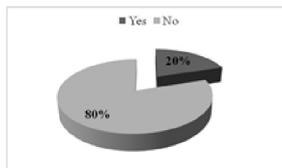
Attached bellow is the questionnaire as given originally to said respondents. Bellow each question, a small graphical representation of their answers is also given as well as a viable summary based on their answers. After generalization the processed and analyzed results of the research are presented.

## **3. Results**

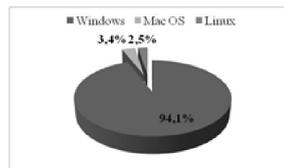
### Teacher's background information on software, hardware and how to integrate them into different types of education

On the question(Q) 1: *Do you have a personal computer?* 64 teachers answered *Yes*, only 16 teachers which are 20% – *No*.

Teachers' responses on the Q 1:1: *If you have, what operating system does it use?* show high percentage – 94,1%(75 teachers) – are using *Windows*, 3,4% (3 teachers) – *Mac OS*, 2,5% (only 2 teachers) – *Linux* and 0% – *Other*. The ratio can be seen in Fig. 2.



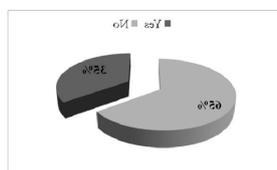
**Fig. 1. Personal computers**



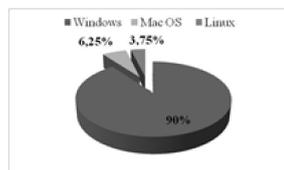
**Fig. 2. Operating system**

The results show that the majority of respondents – 80% have computers.

On the next Q 2. *Do you have a laptop?* 28 teachers, which are 35% of all answered *Yes*, and 52 teachers – 65% of all, answered *No*. On the question 2:1: *If you have, what operating system does it use?* there are 90% answers *Windows* (72 respondents), 6,25% – *Mac OS* (5 teachers), 3,75% – *Linux*(only 3 teachers) and 0% – *Other*.



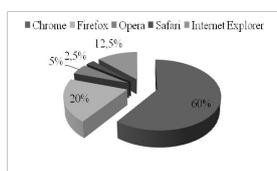
**Fig.3.1. Laptops**



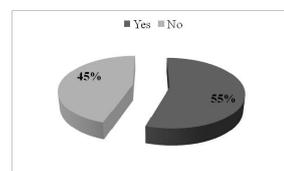
**Fig. 4. Operating system**

Based on this data we can assume that it will be difficult to use devices in the classroom. The results of Fig. 4. show that the most commonly used system remains Windows.

As the answers show on the question: 2:2: *If so, what is your default browser?* 48 teachers which are 60% using *Chrome*; 20 (16)% – *Firefox*; 5 (4)% – *Opera*; 2,5 (2)% – *Safari*; 12,5 (10)% – *Internet Explorer*. Next Q3: *Do you have touchscreen mobile phone?* received followed answers: 44 teachers which are 55% of all have *touchscreen mobile phone*, and the rest 45% – *haven't*.



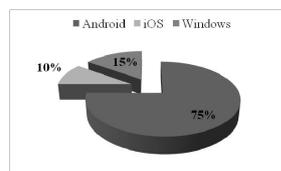
**Fig. 5. Default browser**



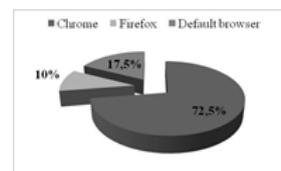
**Fig. 6. Touchscreen mobile phone**

From the information it is apparent that teachers are using free and open-source software (FOSS) with guaranteed online safety. The majority of users have Chrome as their basic browsing software.

On the question 3:1: *If you have, what operating system does it use?* 75% (60 teachers) use *Android*, 8 respondents which are 10% – *iOS*, 12 participants (15% of all) – *Windows* and 0% – *Other system*. As the answers on the question: 3:2: *If so, which browser do you use?* show that 72,5% (58 teachers) use *Chrome*; 0% – *Dolphin*; Only 8 teachers – 10% of all – *Firefox*; 0% – *Opera*; 14 respondents – 17,5% – *Default browser* and 0% – *Other*. The ratio can be seen in Fig. 8.

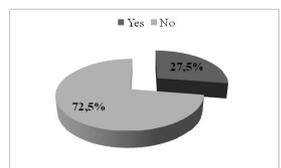


**Fig. 7. Operating system**

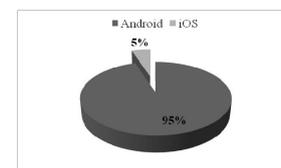


**Fig. 8. Browser**

*Do you have a tablet?* is a question 4. There are 27,5% answers *Yes* which are relevant of 22 teachers and 58 of all have tablets which are 72,5% answers *No*. On the Q 4:1: *If you have, what operating system does it use?* 90% use *Android*; 2% – *iOS*; 0% – *Windows* and 0% – *Other*. The results show that 72 teachers use the most popular system – *Android*.



**Fig. 9. Tablets**

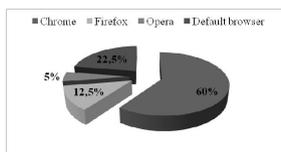


**Fig. 10. Operating system**

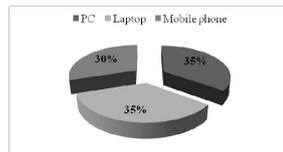
The data of two last questions show that only a little over a quarter of respondents have tablets, which are almost exclusively running Android as their base operating system and Chrome as their main browser.

On the Q 4:2: *If so, which browser do you use?* received following answers: 60% (48 respondents) use *Chrome*; 0% – *Dolphin*; 12,5% (10 participants) – *Firefox*; 5% (4 teachers) – *Opera*; 22,5%(18) – *Default browser*; 0% – *for Other*.

About teachers' responses on the Q5: *Which do you use often?* the results show: *PC* use often 28 participants – they are 35% of all; *Laptop* – 35% – the same number as those who use *PC*; *Mobile phone* – 25% (20 teachers); *Tablets* use only 5 teachers; *Other* – 0%.



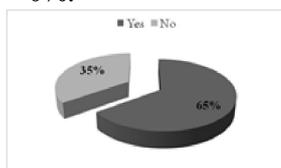
**Fig. 11. Browser**



**Fig. 12. Devices**

Almost quarter users mainly use their PC, a quarter – laptops or mobile phones.

Q6 refers to: *Do you have Facebook account?* 52 respondents answered *Yes*, which are 65% of all participants and 35% (28 teachers) answered *No*. On the next Q 6:1: *If 'yes', do you prefer making a new registration or using your Facebook account to log into a website?* We received following answers: 10% using their Facebook for a *New registration*; 90% using *Facebook account* to log into a website; For *Other* – 0%.

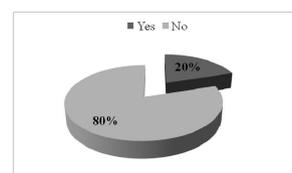


**Fig. 13. Facebook account**

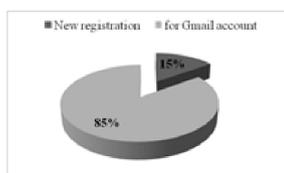


**Fig. 14. New registration or Facebook**

On the Q 7: *Do you have a Google Mail account?(Gmail)* 20% – only 16 of respondents answered *Yes* and 64 teachers which are 80% – *No*. Next Q 7:1: *If 'yes', do you prefer making a new registration or using your Gmail account to log into a website?* the results show: Only 15 participants – 15% of all using for a *New registration*; 65 which are 85% – for *Gmail account*; 0% – for *Other*.



**Fig. 14. Google Mail account**

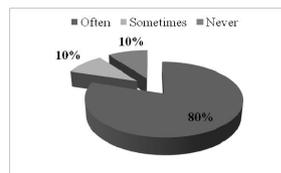


**Fig. 15. New registration**

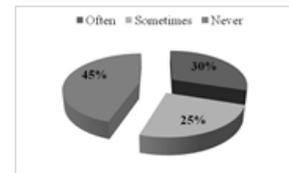
Last 4 questions are from the very important segment related with account creation. By choosing software that implements this, teacher can guarantee one less barrier between his or her students and their desire to learn, because account creation being one of the easiest ways of solving the problem of multiple accounts, multiple passwords and different levels of security.

The next is Q 8: *Do you play computer games?* The question gets 8(10%) responses of each answer *Often* and 8(10%) *Sometimes* and 64 teachers (80% of all participants) answered *Never*.

On the 9<sup>th</sup> question: *Do you use the Internet to study?* only 24 (30%) teachers have been *Often* used Internet to study, a bit more – 20 (25% of all) respondents answered *Sometimes*, and almost half of the participants (45%) responded – *Never*.



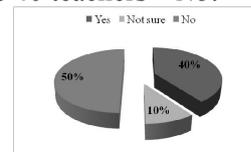
**Fig. 13. Computer games**



**Fig. 14. Using Internet to study**

The results show that only a quarter of all respondents are used Internet for active study.

Next question *Would you use software and/or online tools to study on your own?* has next answers: 40% (32 teachers) answered *Yes*, 8 respondents (10% of all) – *Not sure* and half of all – 50% which are 40 teachers – *No*.

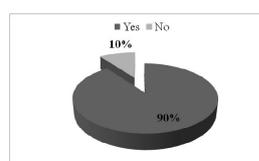


**Fig. 15. Online tools to study**

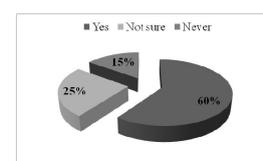
Only forty percent use the different online tools on their study. This means the continuous training would have to be convincing and portray the software correctly in order to make the percentages higher

The question 12. *Have you heard of Formal Education?* received 90% which are 72 respondents answered *Yes*, 8 teachers (10%) are not sure and nobody have never heard about formal education

The next question – 13<sup>th</sup> *Have you heard of Non-formal Education?* got totally different answers. Only 48 (60%) of respondents answered that they had been heard of Non-formal education. With *Not sure* answered 20 of all teachers which are 25% and 15% (12 teachers) had never heard about this kind of education and answered *No*.



**Fig. 16. Formal Education**

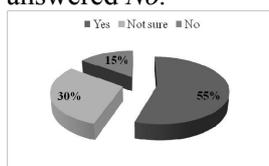


**Fig. 17. Non-formal Education**

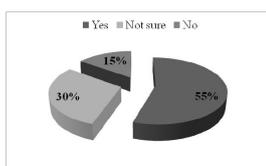
The results related with the question 14<sup>th</sup>: *Have you heard of Informal Education?* are approximately the same. In order to compare them, 44 (55%) of respondents answered that they had been heard of Non-formal education. With *Not sure* answered 24 of all teachers which are 30% and 15% (12 teachers) had never heard about this kind of education and answered *No*.

The 15<sup>th</sup> question from the questionnaire is about teacher's background information of different kind of education: *Do you readily differentiate between formal, non-formal and informal education?* We received following answers: 55% which are 44 respondents answered *Yes*, 24 teachers

(30%) are *Not sure* and 12 (15%) of all participants have never heard about formal education and answered *No*.



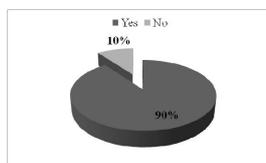
**Fig. 18. Informal Education**



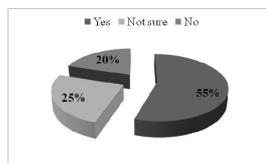
**Fig. 19. Differences between educations**

The majority of respondents are agree with the statement 1: *Formal education is typically provided by an education or training institution, is intentional, is structured (in terms of learning objectives, learning time or learning support) and leads to certification.* We received 72 answers *Yes* which are 90% and only 8 of all – *Not sure*. Responses *No* were not observed.

About the next statement 2: *Non-formal education is intentional learning that is provided outside the scope of formal education in the form of structured autodidacticism without the use of a curriculum. It does not lead to certification in most cases* data show 44 answers *Yes* which are 55%, 20 respondents of all answered *Not sure*, and 16 answers *No* have been observed which are 20%.



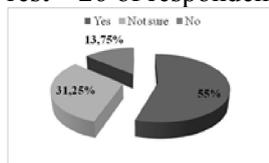
**Fig. 20. Statement 1**



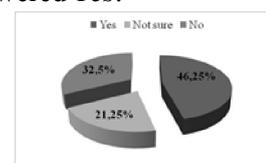
**Fig. 21. Statement 2**

The agreements of the last statement 3 *Informal education is a direct result from daily life activities related to work, family or leisure. It is not structured (in terms of learning objectives, learning time or learning support) and typically does not lead to certification. Informal learning may be intentional but in most cases it is not-intentional* show similar results. We received 44 answers *Yes* which are 55%, 25 (31,25%) respondents of all answered *Not sure*, and 11 answers *No* have been observed which are 13,75% of all participants.

The data show that 46,25% of the teacher's self-assessment is related with answer *No* on the question *Do you feel comfortable using a computer?* 17 teachers answered *Not sure*, and the rest – 26 of respondents, answered *Yes*.

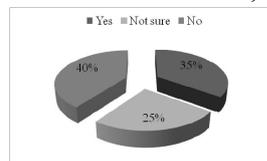


**Fig. 22. Statement 3**

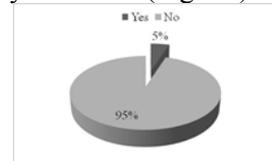


**Fig. 23. Using computer**

Analysis of the data of Fig. 24 showed that the answers divided into three groups about the question: *In your opinion, can formal and non-formal education be used together?* 35% answered *Yes*, 25% – *Not sure* and 40% – *No*. Only 5% off all would personally use non-formal education. The other 95% answered, that they wouldn't (Fig. 25).

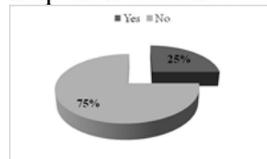


**Fig. 24. Using Together**

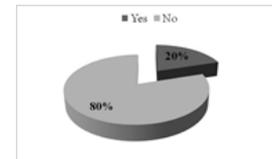


**Fig. 25. Using Non-formal**

Only a quarter of respondents would recommend non-formal education to their students to help them better understand the curriculum material. 75% are not agreeing with this. The majority of respondents – 80% (72 teachers) are not interesting in creating content for an online tool the help their student's study.



**Fig. 26. Recommend Non-formal Education**



**Fig. 27. Creating Content**

### Analysis of the results:

Questions one through five and their sub-questions are specifically aimed at knowing what technology as far as hardware the teachers' possess, which operating system and browsers they use and which of all of their gadgets they favor most. Based on this information the teacher has valid data that can use to assess which operating system, browsers and gadgets are the most used and preferred amongst his/her students. This makes the process of choosing software and web tools easier.

Questions five through ten deal with various problems – whether the teachers can dodge account creation by using Facebook or a Google account, whether game-centered software will be received well (See Q 6:1) and whether the teachers have ever used the Internet to actively study.

As far as results go, the majority have a personal computer of some sort which teachers use some of the much iteration of Windows. Only 10% are using Linux or Mac OS. 35% of the personal computers owned are laptops, which are an essential fact, as it will allow the teachers to carry them to school if needed. The laptops are armed with Windows in ninety percent of all cases, which is normal as laptops' hard disks are formatted with Windows exclusively.

Question thirteen to sixteen reveals that the part of the teachers in question (ten percent) did not

know that the system they work within is known as Formal Education. Of the 80 teachers sixty had heard of Non-formal education. It is noteworthy that forty percent of teachers have not heard of it or not sure.

Questions seventeen to nineteen gave the teachers a set of statement, each statement giving a description of formal, non-formal and informal education. The teachers agreed, expressed their uncertainty or disagreed with the said statement. There was a unanimous vote of eighty to zero in favor of the formal education statement. The results show that teachers' readiness to agree with their observations whether they know the terminology or not. The next set of questions targeted personal opinions. A relation was established as far as computer use and the ease with which they do it. Thirty five percent thought that formal and non-formal education could be used together – again overlapping with the people who asked in a positive manner as to having knowledge of types of education other than formal. This shows that Bulgarian teachers are willing to appreciate something only if they have gained sufficient knowledge about it. Even then, there were only four willing questionnaire participants that were willing to use non-formal education to help his or her students, but at least twenty teachers would extend the idea to their students. When terminology is eliminated as in 22<sup>nd</sup> question eight of eighty questionnaire-takers would devote personal time to create content for an online tool that would help their students study better.

#### 4. Conclusions

The study set out to achieve a number of tasks – to point out the different subsets of education, to inform of the basics of non-formal education, and to offer practical advice and software options for teachers, whether professional or not, on how to open the opinion of non-formal education as far as autodidacticism goes.

The research behind the study has led the following main conclusions:

1. Non-formal education is a byproduct of formal education. It is an evolution of the faults and minuses to the factory-centered way of teaching that formal education has become and thus it is strongly linked to it.

2. Teachers in Bulgaria are not equipped to allow their students to learn in a motivating for both sides way. This is due to economical limitations, a lack of knowledge – technological for teachers. This does not encompass all teachers, and the used data sets are not as full as they could be, but there is a definite trend.

3. The offered materials in the form of questionnaire will allow teachers without the knowledge rendered in this thesis to adequately judge the needs of their students.

4. The offered materials, in the form of information about software and online tools, are appropriate for use by teachers.

The biggest limitation of this study was the needed scale of research. For a concrete discussion on whether non-formal education and the offered software and tools are adequately simplistic and usable, the following would have to be done in a much broader scale:

- Apply offered questionnaire to a broad teacher base.

- Conducts research on the effectiveness of the software usage among Bulgarian teachers.

It is evident, that using web tools in non-formal education is a needed counterpart of formal education. One cannot fully exist without the other until one of either is perfected.

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