



ACCESS AND USE OF NEW ICT RESOURCES IN ROMANIAN SCHOOLS

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Abstract: In the context of a digital age that marks all sectors of modern life, access and use of new technologies and the Internet by digital natives is an area with multiple speculations based on relatively little empirical research. It was noted that young people of this generation share a global common culture characterized more by their experience in the use of digital technologies and less by age. It is obvious that the use of new technologies has become an important dimension of education at all its levels and should be used in line with the needs and characteristics of digital natives. The purpose of this paper-work is to highlight access to practice in terms of new technologies for academic study and to identify the level of training and use of new ICT resources by secondary school teachers.

Key words: digital natives, net generation, new technology, education.

1. Introduction

In the last decade, the Romanian education has developed many initiatives to promote and support access to new ICT resources in school and their use in the educational and administrative activities. Initiated steps aimed at ensuring infrastructure, teacher training and developing digital educational content.

Integration of new ICT in education was the purpose of making use of all investments in the provision of infrastructure in schools, teacher training and curriculum transformation. Hew and Brush (2007) draw attention to the absence of a clear definition of integration of technology in education and they identify three perspectives as it was operational in studies previously conducted: (1) in relation to the ways in which new ICT can be used by the teacher in school activities; (2) in relation to efficiency and quality assurance of these activities; (3) in relation to pupils' skills development.

In this research we will pay particular attention to the first insights, where have been included those researches which identified two levels of use of new ICT in school: a basic level (for finding information, organizing activities, involving students in finding information on the Internet) and a high level (involvement in programs and projects, collaboration). Resulting ways in which technology is used in the activities, the integration of new ICT in education is influenced both by factors related to the school and the factors related to staff.

2. Background

Over the years, researchers have been interested in identifying the influence of access to ICT resources and involvement in specific training on their use for teaching. Considered to be innovative resources, NICT are tools that facilitate independent learning and individualization (Hardley and Sheingold, 1993; Doornekamp 2002), customizing educational approach (BECTA 2001 cited Condie and Munro, 2007) and optimization project management (Făt and Labăr, 2009). In the Romanian education, the use of these resources is held across all levels of education and studying specific subjects is mandatory in the secondary and high school, which may have, however, allocated special classes in primary schools and pre-school through the development of optional subjects.

Lack of access to new ICT resources or access restricted is regarded as one of the main factors affecting the integration of technology in schools (Glover and Miller, 2001 cited Yang, 2012), has often been also mentioned in international reports published in the last two decades. Teachers access to new ICT resources at home support organization of classroom and also supplement use of new ICT in school (Făt and Labăr, 2009), teachers being with more confidence to use new ICT, and acquire faster new ways of working (Ramboll Management, 2006).

Romanian schools transformation began more than a decade ago when, amid changes in society, but also the need to harmonize the Romanian system movements taking place in the education sector in the European area, the program Education Informational system was launched (SEI). Development projects under this program have been accompanied by changes in the curriculum of secondary education and initial and continuing training programs. New ways of training teachers have been materialized by the establishment in the initial and continuing training programs and mandatory courses Technology of Information and Communication.

The topics courses cover Technological literacy of the future teachers and in classes, but only in 2001 was released the first comprehensive program for introducing technology in schools - SEI52 Program. Aiming to introduce the informational system into Romanian education, this program was implemented during 2001-2009 and contributed to equipping schools with computer labs, teacher training and the development of digital educational content. Also in this program have been developed and implemented complex systems that have targeted streamline some of the administrative processes carried out in schools or inspectorates such as the admission of pupils to school (since 2001), organizing the final exams and distribution of teaching positions in the examinations tenure (since 2004).

3. Institutional context of the study

The study was conducted in ten Secondary Schools located in both rural and urban areas. At the time of the study there were 92 high school teachers in urban schools and 72 high school teachers in rural schools.

4. Methodology

Research questions are:

Q1: What are the new ICT resources that teachers have available in the school, in class?

Q2: What is the purpose of using new ICT resources by teachers (which activities are used)?

Q3: What ICT applications are used mainly by Romanian teachers in secondary school?

In order to identify the level of access, training and use of new ICT resources by secondary school teachers, we used *The questionnaire on access and use of new ICT in education* developed specifically for this study. In this questionnaire access to technology it was operational at a scale that targeted both access of new ICT in school and in classroom. Using technology covered both identifying activities that teachers use new ICT resources and the kind of applications that they use.

4.1. Participants

Participants in this study were 164 teachers in secondary education, high school level. Teachers involved in the research are: 24.4% (n=40) were up to 10 years teaching experience, 42.7% (n=70) of them between 11 and 20 years and 32.9% were over 20 years of experience within the department (n=54). 56.1% of teachers are working in urban schools (n=92) and 43.9% in rural schools (n=72). In relation to the discipline taught, they are divided as follows: Romanian language and literature (n=29), mathematics (n=28), history (n=19), geography (n=17), chemistry (n=13), physics (n=16), biology (n=12), English (n=13), French (n=9), ICT (n=21). Respondents are high school teachers and were chosen randomly from seven different areas of the country, in rural and urban schools.

4.2 Tools

This research is achieved by using an approach based on a survey questionnaire conducted on paper. The questionnaire on access and use of new ICT in education has four parts. In the first part, are grouped the items which measures both dimensions of the indicator access to new ICT resources: access to new ICT resources at school and in the classroom.

New ICT resources considered in this study are: computer with internet connection, laptop, tablet, camera, projector, smart phones, smart printer, eReader and smartboards. In access to new ICT resources we were interested to identify whether the school provides access to library, computer lab and if the documentation center has computer networks.

The second part of the questionnaire includes items that will contribute to the formation of scales on the use of new ICT in education. This scale was operational in two dimensions: the use of new ICT in educational activities and use of new ICT in collaborative activities, projects and partnerships undertaken at national and international level.

The third part of the questionnaire gathers the items on the applications used by teachers.

The last part presents the items that will allow us to identify the characteristics of those who completed the questionnaire: age, experience at the department, participation in training skills new ICT environment in which the school is located, school name (this item has been completed only by those schools who wanted to receive the final report on the integration of technology in their school) and county.

Questionnaire on new ICT integrating in education used both items with answers dichotomous (yes/no to scale on access to new ICT resources), items with answers enclosed report on a Likert scale with five points to enable those involved in the study expressing the manner in which agree with the statements presented (to scale the applications and tasks are used new ICT in education) but also items with open answers (designed to provide teachers with the opportunity to complete specific information).

4.3. Data Analysis

Data analysis was performed using SPSS statistical methods and includes both descriptive (frequencies presentation, the media, standard deviation), correlational, and inferential (using both parametric and nonparametric tests). Averages involved samples were compared, were calculated correlations between variables used, were applied parametric and nonparametric tests. Prior to initiating the certain statistical approaches, we wanted to identify whether or not distributions of variables differ from a normal distribution.

5. Results

5.1. Access for teachers to new ICT resources

Access to new ICT resources in schools

The main new ICT resources available in schools from which participants in our study are: computer (n=116), internet (n=102), video (n=100), laptop (n=99), smart phone (n=98), tablet (n=95), projector (n=84), the printer (n=69), digital camera (n=39) smartboard (n=32) and eReader (n=18). Participants are from schools equipped with computer lab (n=119), documentation center (n=43) and library (n=145). Unlike documentation centers where access is free in some schools access to library (n=35) and the computer lab (n=74) is restricted.

Only a third of rural schools offers teachers and students the documentation center (n=14), more than three quarters of these schools provide access to library (n=61) and only 51 of them offer free access to these facilities. More than half of rural schools are equipped with computers (n=43) and three quarters of them offer Internet access (n=34), computer networks (n=39) and the projector (n=39). 85% (n=61) in schools located in rural areas gives students and teachers access to the library, and for 70% of them (n=51) admission is free. Also, only 16.6% (n=12) of these schools have a

documentation center where activities can be made without any restrictions. Over 75% of urban schools offer teachers and students access to computers (n=73), internet (n = 68), projectors (n=61), computer networks and smart boards.

Also, 69 of these schools have a computer lab where access is largely free (n=58) and 30 of them have a documentation center where teachers and students can work wherever they want. Over 90% of urban schools have a library where access is always free, and in 33% (nurban=30) of these are a documentation center.

New TIC access to resources in the classroom

61% (n=101) of the teachers involved in the study have access to new ICT resources in the classroom. The most common resources are computers (n=38), laptops (n = 30), the Internet (n=56), intelligent tablets (n=19), projector (n=18) and smartboards (n=12). Although the use of new ICT is not binding on all educational levels, so they have the equipment they use in their activities. More than half of those classes (n=38) have computers in more than 50% of the cases are connected to the internet (n=27). In secondary schools, teachers and students have access to high technology in the classroom and the resources they use are different, moving from computers, laptops to Internet networks computers, smart boards and projectors. More than half of secondary school teachers have access to computer / laptop in the classroom (n=12) and in most of the cases it is connected to the Internet (n=11). Half of these teachers have computer networks (n=6), a smart board and a projector (n=5).

More than half of the classes in educational institutions located in urban areas (n=51) are equipped with computers and laptops connected to the internet (n=45). In less than a quarter of the classes from rural areas (n=17) we find a computer or a laptop connected to the internet (n = 11). The differences are deepened further, as the discussion about complex new ICT resources. For example, in urban areas 20% of classes are equipped with video (n=16), while only 3% of classes in rural areas have such equipment (n=2). Among different categories of teachers included in the survey with years of teaching experience, a large proportion of those having over 10 years of experience have classroom computers/laptops (n_{<10years} =8, n_{11-20years} =35, n_{> 21}=25), internet (n_{<10years}=8, n_{11-20years}=28, n_{> 21}=20), the intelligent board (n_{<10years}=8, n_{11-20 years} =22, n_{> 21}=18) and projector (n_{<10 years}=2, n_{11-20 years}=11, n_{> 21}=5). We see thus that, while half of teachers with more than 11 years of teaching experience have access to new ICT resources in the classroom, those who started work in the last decade have access to 20% of such resources.

5.2. Use of new TIC in educational process

Identifying ways in which new ICT resources are used by Romanian teachers we need to be able to show the main aspects covered by integrating technology into schools. We have identified resources that are available for teachers involved in this study, now we must to identify what are they using for educational activities.

The growing interest of the teachers for their development in the ongoing and training programs positively influence the general use of new ICT (K-Sz_{newICTuse}=0.795, p=0.552; $\rho(162)=0.373$ p=0.000, R²=0.13) and using new ICT partnerships in school (K-Sz_{partnershipnewICT}=1.435, p=0.033; $\rho(162)=0.437$, p=0.000, R²=0.19), but exerts an poor influence use of new ICT for the preparation and implementation of educational activities (K-Sz_{newICTtea}=1.671, p=0.008; $\rho(162)=0.173$, p=0.026, R²=0.02). Nor involvement of teachers in new ICT training skills is not a guarantee that they will use new ICT ($\rho(162)=-.273$, p=0.000, R²=0.07) in preparing and carrying instructive - education ($\rho(162)=.130$, p=0.097) or the institutional collaboration, national and international ($\rho(162)=.310$, p=0.000, R²=0.09). The access to new ICT resources is not equivalent to that they will be used ($\rho(162)=-.412$, p=0.000, R²=0.17), will facilitate the preparation and implementation of educational activities ($\rho(162)=-.240$, p=0.000, R²=0.06) or collaboration with other schools ($\rho(162)=-.426$, p=0.000, R²=0.18).

The access to new ICT resources in schools is not enough to determine teachers to use them ($\rho(162)=-.247$, $p=0.001$, $R^2=0.06$) and deliver projects and partnerships with other educational institutions ($\rho(162)=-.270$, $p=0.000$, $R^2=0.07$). Instead, the more widely new ICT resources are used in educational activities, the greater the chances that teachers call on them to cooperate within the framework of national and international projects ($\rho(162)=.301$, $p=0.000$, $R^2=0.09$) and the use of new ICT professor equipment has a very strong positive influence in terms of their use of collaborative approaches to achieve educational institutions ($\rho(162)=.788$, $p=0.000$, $R^2=0.62$). We see thus that the influences of variables access to new ICT resources and training skills does not result in changes regarding the use of technology in school activities.

An important advantage of technology is that it facilitates collaboration between individuals and between institutions. In our case, although the technology is used for school projects, the high value of the standard deviation (1.06) indicates the existence of a significant gap between those who use the technology for this purpose and those who have never used new ICT for school projects. The implications of this result are multiple and lie in identifying appropriate intervention to allow teachers to know and apply new ICT at a different level than that which is currently used to.

Environment in which the school is located influences the use of new ICT in general ($\chi^2(32)=51.765$, $p=0.015$, $\phi=0.562$) and use them to develop partnerships School ($\chi^2(16)=40.804$, $p=0.001$, $\phi=0.499$). 10% of schools that are located in rural areas ($n_{\text{rural}}=7$, $n_{\text{freq}}=2$, $n_{\text{allthetime}}=5$) using new TIC to realize collaborations with other institutions in the country while 34% of schools located in urban areas ($n_{\text{urban}}=31$, $n_{\text{freq}}=19$, $n_{\text{allthetime}}=12$) using these resources for exactly the same purpose. The gap-widening on the programs and international collaborations attending only 6.97% of the schools are in rural areas ($n_{\text{rural}}=5$, $n_{\text{freq}}=2$, $n_{\text{allthetime}}=3$) and 29.34% of those in urban areas ($n_{\text{urban}}=27$, $n_{\text{freq}}=15$, $n_{\text{allthetime}}=12$). The teachers who have teaching experience between 11 and 20 years are those who use NICT equipment available in school to achieve both national ($n=22$) and international ($n=18$) collaboration.

5.3. New ICT applications used by teachers in Romanian schools

Applications included in this study were operational into three categories: basic applications, complex applications and specific applications. In the basic applications were included programs as: Word, Excel, Adobe and Power Point. Complex applications include: media players, Nero, Winrar and digital dictionaries. Specific applications include Access programs, MathCAD, Microsoft Math. All teachers involved in the study are using basic applications ($M_{\text{basicapplications}}=12.70$, $SD=3.55$), 89 of them use complex applications ($M_{\text{complexapplications}}=12.23$, $SD=3.90$) and specific applications ($M_{\text{specificapplications}}=4.42$, $SD=2.01$) ($SD=$ Standard Deviation). Using the basic application is positively influenced by involvement of teachers in training programs ($\rho(162)=.383$, $p=0.000$, $R^2=0.14$) and in new ICT skills training programs ($\rho(162)=.215$, $p=0.006$, $R^2=0.04$), but their influence is weak. 14% of the variance using this kind of applications can be attributed to involvement in training programs overall and 4% involvement in new ICT skills training programs. Using basic ICT apps is moderate influenced by the environment in which the educational institution ($\chi^2(16)=26.409$, $p=0.049$, $\phi=0.401$) and depends heavily on the level of education that exercise, moreover, a strong effect ($\chi^2(48)=73.479$, $p=0.010$, $\phi=0.669$). Not incidentally, if we consider that the use of these resources is carried out mainly in secondary education to which were directed action strategies developed in the Romanian schools and focused both financial resources for infrastructure provision and for teacher training.

In our study, the access to new ICT resources, although adversely affect applications using new ICT ($\rho(162)=-.209$, $p=0.033$, $R^2=0.05$) the basic ones ($\rho(162)=-.479$, $p=0.000$, $R^2=0.23$) and specific applications ($\rho(162)=-.209$, $p=0.050$, $R^2=0.04$) doesn't have a high impact on them. The presence of new TIC resources in the classroom adversely affects the use of software ($\rho(162)=-.272$, $p=0.010$, $R^2=0.07$), exerting influence over the use of average specific applications ($\rho(162)=-.269$, $p=0.011$, $R^2=0.07$) and a strong basic applications ($\rho(162)=-.508$, $p=0.000$, $R^2=0.26$). Teacher access to new

ICT home resources does not exercise any influence over the use of specific new ICT applications ($\rho(162)=-.164$, $p=0.126$) or complex ($\rho(162)=-.160$, $p=0.135$), but it has a negative influence on the average use of new ICT basic applications ($\rho(162)=-.291$, $p=0.000$, $R^2=0.08$). The fact that teachers use new ICT applications affects how they use applications in the activities ($\rho(87)=.279$, $p=0.008$, $R^2=0.08$) with the aim of preparing and realizing educational activities ($\rho(87)=.331$, $p=0.002$, $R^2=0.11$). For that ($\rho(162)=.493$, $p=0.000$, $R^2=0.24$), teachers often make use of basic applications ($\rho(162)=.434$, $p=0.000$, $R^2=0.19$).

Along with the above applications, teachers were asked to mention other programs they use. Thus, we could identify a high interest for a variety of instruments NICT, which can be classified into the following categories of specialized software for: communication (Yahoo Messenger, Viber, Whatapp) presentation modules (Prezi), digital processing materials (Photoshop, Corel Draw Adobe Illustrator, 3D Studio Max, After Effects, Adobe Encore, Adobe Flash Professional, Pinnacle Studio, MS Publisher, Paint, Daemon Tools, SPSS Soft M, Quick Capture, Math Type), organizing information (iWork, Total Commander), security activities in virtual environment (Password Safe), facilitating audio-video (ODC, Torrent, You Tube), for use (Win amp, VLC Media Player, iTunes). The most frequently mentioned of these applications is, MS Publisher ($n=5$), followed by Photoshop ($n=4$), Corel Draw, Win amp and Adobe Illustrator ($n=3$), Dreamweaver, Paint, ODC and Daemon Tools ($n=2$). The remaining applications were mentioned only by one teacher.

6. Conclusion and reflections

In the first part of this study we found the efforts made towards ensuring technology in schools in our country and the results of investment in this sector can be seen in the equipment teachers and students can use. Although access to new ICT resources in schools in Romania has improved over the last decade, the differences between the schools situated in rural and urban are still significant enough. There are schools that do not have yet such equipment (Logofătu, fd). In addition, this study revealed the existence of similar differences in the access to new ICT resources at home, where teachers use technology to prepare their teaching. This difference may be the result of the gap between investments made between schools in our country but can be interpreted as an indicator of low financial powers of schools and also of teachers' in the rural area.

Focusing efforts to ensure new ICT at secondary schools began to contribute to the emergence of a new kind of gap between high schools and middle schools and between the high-schools and primary ones. Joining the existing gap between rural and urban schools, this difference poses serious difficulties in terms of providing equal opportunities to quality education for students, regardless of where the school is located or level of education is. Programs and strategies that will be developed in the future should consider this result to promote measures to determine removing or reducing barriers to a level that does not jeopardize the teaching act. Another type of gap exists between teachers with different teaching experience and different access to new ICT resources in the classroom. Teachers who obtained a teaching post in the last decade are those who have benefited from new ICT training in college, but, according to our study, once at the post, the access to new ICT resources is restricted and, in rare cases, they are free to organize activities using effectively the technology.

This study has enabled identifying the fact that new ICT resources in the classroom are not a factor to determine teachers to use new ICT in their activities. Thus, in the teachers involved in this study, using new ICT aims to search information for organizing and preparing lessons. Given this situation, the most important question is why, with all the investments that have been made in the integration of technology in the schools involved in the study (at the level of infrastructure, training staff) its use has more an information purposes than a formative one. One possible explanation is that teacher training aimed technological literacy, allocating less space to techno-pedagogical literacy. Thus, despite the involvement in training programs new ICT, teachers know how to use these resources at the basic level (as evidenced by the applications). One useful aspect for this kind of situations could be extending these courses by integrating techno-pedagogical literacy. But this expansion should take

place in an environment conducive to technology integration; both characterized by the presence of resources, but also determine teaching staff to use new ICT.

Many of the teachers involved in this study are using technological resources to prepare their educational activity (searching information, documentation, development worksheets and evaluation sheets), but not to do it effectively. What are the factors that influence to obtain such a result? First, similar situations were found in other studies conducted in recent years, and one of the possible explanations is that teachers do not know how to use them in specific activities. This is because developed training programs that put far too much emphasis on the technological aspects and offered too little use of technology for teaching. Moreover, other recent researches are showing that teachers, although have access to these resources, use them to support traditional educational practices, appealing to them to seek information and to prepare activities (Palak and Walls, 2009). Moreover, these results confirm the findings of a European report in which most teachers have the ability to use technology to achieve their search for information, documentation, training presentations, but only few of them are truly able to use technology in the instructive–educational process (EC, 2010D; EC, 2012). The use of technology for teaching is primarily aimed at informing, organizing and performing the activities. Teachers in this study use mostly basic applications that allow editing of documents (word), searching for information (internet) and making presentations (PowerPoint). Considered to be based applications, their appropriation is concerned of the curriculum for initial training programs, as well as for continuing education. These results are valid only in the Romanian education as in other studies conducted previously; researchers have indicated that although they were made investments in the technology into schools, teachers use new ICT at the basic level (Dawson, 2008; Tezci, 2010; Sonck et al, 2011).

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Annex

Teaching and learning using new technologies Research tool for teachers

Dear teachers,

The following survey questionnaire is intended to assess how new information technologies are used to support the education process in your school. We realize that there is a wide range of viewpoints and different opinions regarding the manner in which new technologies should be used in schools. The purpose of this questionnaire is collecting this information on the various views and experience in using field. Also, in this study we want to find out the level of comfort regarding the use of NTI and enforcement instruments available and your perception of the value of new technologies as a tool for improving and modernizing the teaching.

I acknowledge that:

- My participation in this study is voluntary and may be terminated at any time upon my request. Participation in the research and / or withdraw from this research will not adversely affect me in any way.
- Responses will be gathered anonymously and kept strictly confidential.
- The entire survey should take about 30 minutes. Thank you for your time!

Remember! - For purposes of this study, new information technologies (NTI) are defined as information technologies which take the form of computers (desktop, laptop), tablets, smart phones, game consoles play station fixed or Wi-Fi and various devices that can be attached to computers .

I. Experience in using NTI *(OECD 2015, Students, Computers and Learning. Making the Connection)*

For each of the 26 items below indicate the level of experience in using NTI (even if you do not have access to NTI constantly in school). Progressive experience level is measured on a scale of 0-4, where 0 – Inexperienced, 1- Beginner, 2- Intermediate, 3- Advanced and 4 - Expert.

1. I can use a text editor to perform complex written work (for example, notes, worksheets, letters).
2. I know how to edit documents created with text editor.
3. I know how to check grammar documents created with text editor.
4. I know how to format your documents created with text editor.
5. I know how to use specific programs to make / edit presentations.
6. I know how to add text or text box made presentations.
7. I can add graphics presentations made.

8. I can add video and audio files to the presentations.
9. I can add links to different web pages to the presentations.
10. I can use a spreadsheet (Excel) for different purposes.
11. I can perform calculations in a spreadsheet using Excel basic functions (sum, difference or average).
12. I can use a spreadsheet to make graphs.
13. I can use a spreadsheet to make diagrams
14. I can use an e-mail to send messages.
15. I can utilize my e-mail address to receive messages.
16. I can attach files to e-mails.
17. I can send the same email to multiple addresses.
18. I know how to forward an e-mail.
19. I can use search engines www (for example Google) to find information online.
20. In the online documentation, I can use advanced search features.
21. I can the brand sites that interest me.
22. I can create web pages using online building applications.
23. I can use digital devices (for example digital cameras) to capture digital images.
24. I can transfer images in a variety of other applications (for example Word pages, PowerPoint presentations).
25. I can utilize a laptop as a professional instrument.
26. I can connect easily a laptop to internet.

II. Use of NTI in school

(OECD 2015, Students, Computers and Learning. Making the Connection)

For each of the following 15 items, please indicate how often you use the following technologies. Please note only those technologies that you and your students use them at school. The frequency of use is progressively measured on a scale of 0-4, where 0 – Never, 1- Several times a year, 2- Montly, 3- Weekly, and 4 - Daily.

1. I use word processing programs to plan classroom activities.
2. I use text editing programs to create classroom activities.
3. I can use presentation software to expose new information to students.
4. I use spreadsheets to store information about students.
5. I can use the Internet to identify various digital learning materials (lesson plans, ideas for conducting lessons).
6. I urge students to look for tutorials on the lesson to practice their basic digital skills.
7. I ask students to work in small groups to complete tasks or projects that require the use of NTI.
8. I ask students to use the NTI to complete complex workloads that demonstrate mastery of advanced digital skills.
9. I ask students to use word processing programs to carry out certain work tasks (practice digital writing process).
10. I urge students to use word processing programs to work to correct each other papers.
11. I urge students to use presentation software to complete various work tasks.
12. I urge students to use spreadsheets for organizing data.
13. I urge students to use spreadsheets for data analysis.
14. I urge students to use spreadsheets to create charts.
15. I urge students to use spreadsheets to perform calcul.

III. NTI types used in school*(EDUCAUSE 2014, Students and Technologies)*

From the list below check those devices that you use in school, during school hours.

 laptop compuer eReader tablete smartTV projector smartphone smart bord digital camera**IV. Data on participants**Gender: female male

Age: _____ years

Background: urban rural

Seniority: _____ years

Teacher's Grade: Debutant Definitive
teacher IIndDegree Ist Degree

Specialization: _____

School: _____