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An Investigation of the Use of Information Communication Technologies (ICTs) by Teachers in the Primary Cycle of the European School Brussels III: An Empirical Study

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Authors' contributions

This work was carried out with the collaboration between all authors. Authors GK and CP designed the study. Author GK managed the literature searches, performed the qualitative analysis, wrote the first draft of the manuscript and compiled the final draft for publication. Author CP created the questionnaire, performed the statistical analysis and completed the first draft of the manuscript. Author PP collected the research data from the European School. All authors read and approved the final manuscript.

Original Research Article

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ABSTRACT

Aims: This study aimed to explore the use of ICTs by teachers in the primary cycle of the European School Brussels III, a school where, since its establishment, educational culture has been associated with the use of ICTs in everyday teaching.

Study Design: Self-reports on use of ICTs were collected from 43 teachers of the E.S.Br.3, Brussels. The teachers were asked to answer a questionnaire with closed and open questions, related to the use of ICTs in their school.

Study Sample: The sample consisted of 43 out of 50 primary cycle teachers of the E.S.Br.3.

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Methodology: In order to collect data about use of ICTs, a suitable questionnaire prepared by the researchers based on previous studies and adjusted for the needs of this study.

Results: The results showed that the institutional framework for the use of ICTs has proved to be really pressing to the primary cycle teachers participated to this research. Most of the teachers used ICTs despite various problems concerning mainly the infrastructure available at schools. Teachers used the Internet rather than educational software in teaching on the grounds that it was significant part of their habitus on ICTs. To improve their ICT skills they preferred basically to take training seminars on ICTs and to had the existing infrastructure improved, which could also protect students' physical wellbeing.

Keywords: European school; ICTs; institutional habitus.

1. INTRODUCTION

The European Schools are official educational establishments, controlled jointly by the governments of the Member States of the European Union and providing nursery, primary and secondary education. They are established to provide a multilingual and multicultural education for children of personnel of the European Institutions and leading to the European Baccalaureate [1]. All full-time teachers are appointed by their national governments, after completing a selection procedure [2]. Nowadays, there are fourteen such schools in 7 European countries (Belgium, Holland, Germany, Italy, England, Spain, and Luxembourg). In these schools courses are being taught in all the official languages of the European Community, although each school does not necessarily obtain departments of all the languages above. The curriculum is common to all schools and is centrally controlled by the Board of Inspectors and the Board of Governors. According to Jean Monnet the aims of the European Schools are: *'Educated side by side, untroubled from infancy by divisive prejudices, acquainted with all that is great on the edge of it and good in different cultures, it will be borne in upon them as they mature that they belong together'* [3].

1.1 Culture of Using ICTs and European Schools

The current period of globalization, which is considered to be the era of the new economy and of the knowledge society, is based on ICTs [4]. The above evolution shows that the habitus of the powerful social groups that are involved in various sectors of the new economy and especially in telecommunications and computer science, is incorporated in the social field [5] and influences the habits, the behavior and the choices of modern people in regard with the use of ICTs and the Internet [6]. Moreover, ICTs constitute a basic element of the cultural capital of the dominant social, political and financial groups [7-9].

According to Bourdieu [10], the cultural capital and especially the habitus, which is its basic element, shows the development of a person's specific taste as well as of specific attitudes, dispositions and skills that influence both his or her choices and the possibility to participate in cultural activities. The development of ICTs and of the Internet for communicational, educational and entertainment reasons is such a cultural activity [11,12].

The effective use of electronic computers and of the Internet by many people shows that they own a kind of techno-capital that is related to ICTs [13]. The development of the

students' technological literacy through their training in ICTs skills has constituted one of the main targets of the European Schools since the beginning of the 21st century. A particular institutional habitus has been formulated in these schools that gives emphasis on the integration of ICTs in the educational process, so that they can be '*at the forefront of pedagogical development, i.e. in the vanguard of educational progress*' [14,p. 3]. However, this fact is expected to affect the teachers who work at European Schools and try to adapt themselves to the special demands of these schools [15,16].

The institutional habitus itself shows that a social group like the political and administrative hierarchy of the European Union may regulate the behavior of people (e.g. students, teachers), which is mediated through an organization like the European Schools [17,p. 521]. Moreover, the institutional habitus is considered to be '*a complex mix of curriculum offer, teaching practices and what children bring with them to the classroom*' [18,p. 67].

In the case of the European Schools, both the ICT policy and the ICT syllabus were formulated by the Board of Inspectors in 1999 and were instituted by the Board of Governors [19,p. 2]. At the European Schools Governors and Inspectors supervise the implementation of the institutional decisions concerning the use of ICTs in the educational process. The Head teacher of each European School by performing administrative, educational and disciplinary supervision over the teaching staff of his school unit is responsible for the implementation of the specific policy. Furthermore, those parents who participate in the School Committees express their views about the education that is given to their children, which must be taken into consideration by the Head teacher [2].

The students whose parents work for an EU institution contribute positively to the integration of ICTs in the educational process. The habitus that is transferred to school in this way includes ICTs, since '*the new generation of European School students can be variously described as the so-called net-generation. Google generation, digital natives or homo zappiens*' [20,p. 152].

1.2 ICTs in the Classroom

Over the two last decades an increasing research interest has been focused on the way ICTs (especially, computers connected to the internet) can increase the effectiveness of teachers at all grade levels [21]. Yet as researchers observe [21,22], ICTs can be used in the classroom as a subject to study, as a cognitive tool, as a search and communication tool and as a tool for learning. A classroom through the use of ICTs stops operating in the traditional way, that is, teachers are not considered authorities and knowledge leaders anymore. In a 'technological' classroom, theories for knowledge construction can be applied whereas ICTs, being the tool for searching information of various kinds, create a student-centered environment and have teachers play a critical role in the construction of students' knowledge.

The integration of ICTs in the educational process can support educational activities within a rich (personalized or not) educational environment which is connected with the creation of learning environments in which multiple representations and simulations of complex cognitive issues and phenomena can be made [23,24]. However, despite the possibilities provided by ICTs for the formation of the educational process, worldwide research has shown that teachers use ICTs to support traditional teaching methods (such as presentations or students' practice) rather than to formulate and carry out educational activities in which students have an active participation [25,26].

The teachers' experience, ideas and perceptions are significant factors that get activated and influence their educational methods with or without the use of ICTs [27]. Primary cycle teachers of the European Schools constitute a basic factor for the development of ICTs in these schools' everyday reality. Moreover, teachers come from the EU countries and rotate each year, since they are seconded for a period up to nine years. The length of a teacher's stay at a European School depends on how the Inspector and the Head teacher of the school evaluate his or her performance. Given the mobility of teachers at the European Schools as well as the diversity of the educational culture on ICTs among the countries of EU the following question arises: To what extent teachers working at the European Schools are able to respond to the institutional demands and develop the use of ICTs in everyday teaching?

1.3 Purpose and Research Questions

This paper focuses on an exploration of the use of Information Communication Technologies (ICTs) by teachers of the primary cycle of the European School Brussels III (E.S.Br.3). It is noted that ICTs are considered to be a fundamental element of the contemporary official culture, within the educational reality of their school. The E.S.Br.3 was founded in 2000 in the heart of Europe, primarily for children of European Union personnel. That is, it started operating in the same year that the teaching of ICTs was introduced by primary school teachers as individual subject according to the current European School syllabus [19]. We consider that through the findings of this type of research could emerge factors affecting the use of ICT in everyday educational practice and the educational process in the schools could be improved.

This study addressed the following questions:

- 1) To what extent the teachers of the primary cycle of the E.S.Br.3 are, on the one hand, familiar with ICTs and on other hand, use and develop them in teaching within the educational culture of the specific school?
- 2) Does the technical infrastructure of the E.S.Br.3 enforce the culture related with the development of ICTs in teaching?

2. METHODOLOGY

2.1 Participants

This research project carried out during the spring semester of the school year 2010/2011 between the teachers who were working in the primary cycle of the E.S.Br.3. More specifically, a questionnaire distributed to all primary cycle teachers of the specific school and they were asked to complete it in a voluntary basis. Thus, 43 out of 50 primary cycle teachers of the E.S.Br.3 (86%) participated in this research (12 men, 27.9% and 31 women, 72.1%). The nationality of the sample shows that those teachers came from 11 EU countries, since 6 were from United Kingdom (14.0%), 6 from Spain (14.0%), 6 from Greece (14.0%), 5 from France (11.6%), 5 from Belgium (11.6%), 5 from Netherlands (11.6%), 4 from Germany (9.3%), 3 from Czech (7.0%), 1 from Slovakia (2.3%), 1 from Ireland (2.3%) and 1 from Austria (2.3%). Consequently, those specific teachers had a different cultural capital as far as the use of ICTs in teaching, which was based on the experience they carried from their own countries. For example, in the cases of the United Kingdom and of France the use of ICTs in the primary education has been introduced since the 80s

[28], whereas in Greece and in Czech this effort started at the first decade of the 21st century [29-31].

The specialization of the primary cycle educational personnel of the sample was: 31 primary school teachers (72.2%), 5 philologists-language teachers (11.6%), 4 kindergarten teachers (9.3%), 1 special education teacher (2.3%), 1 social sciences teacher (2.3%) and 1 physical educator (2.3%). 25 out of those teachers have done graduate studies (58.1%) and more specifically 22 have got a Master's degree (51.1%) and 3 a Ph.D. (7.0%). The Mean of their service at E.S.Br.3 was 4.37 years (SD=2.90) and the Mean of their educational service in total was 20.37 years (SD=8.82). The distribution of the ages of these teachers is as follows: 26-30 years old 1 teacher (2.3%), 31-35 years old 3 (7.0%), 36-40 years old 5 (11.6%), 41-45 years old 15 (34.9%), 46-50 years old 10 (23.3%), 51-55 years old 7 (16.3%) and >60 years old 2 (4.7%).

Therefore, the biggest part of the sample consisted of women, primary school teachers, middle aged teachers (41+ years old), having at least 20 years of teaching experience, having done graduate studies and having a 4 year longevity at a European School.

2.2 Material

In order to carry out our research we used an appropriate questionnaire. The specific questionnaire used was based on previous research projects [26,27,32] and consisted of two parts. The first part included the demographic characteristics of the sample whereas the second part included questions revealing the teachers' views about the use of ICTs. Once the questionnaire was formulated, efforts were made, prior to its use, through a small sample of teachers, to increase the face validity and the content validity. After the questionnaire was set up in its final form a pilot use was conducted by three teachers who had served in European Schools in the past. The final control showed that the questionnaire had no any problems either of formulation or of understanding. Afterwards it was used in the research process.

After the data were collected and were incorporated in a package for statistical analysis (SPSS), the reliability analysis showed that the reliability coefficient Cronbach's Alpha was 0.82. The above indication proves that the data collection process was reliable and was also adapted to the targets set for the conduction of the research.

3. RESULTS AND DISCUSSION

The E.S.Br.3 primary cycle teachers' self-assessed knowledge of handling ICTs is depicted in Fig. 1.

Fig. 1 shows that teachers of the primary cycle think that they are very familiar with ICTs (Mean=3.7, SD=0.89). More specifically, the largest part of these teachers (cases 'a lot' and 'too much': 27 teachers, 62.8%) think that their knowledge on ICTs is very satisfactory. However, all the teachers of the sample were activated in order to achieve knowledge of ICTs. They tried to meet their goal in three ways, either independently or in combinations:

- Five (5) teachers (11.6% of the sample), who also had graduate degrees (Master's degree, Ph.D.), obtained their knowledge of ICTs through their studies.
- Sixteen (16) teachers (37.2% of the sample) attended seminars about ICTs which

took place in their countries and were financed by the European Community (Commission, 2001). The teachers who attended ICTs seminars came from the following countries: Slovakia (100% of Slovak teachers), United Kingdom (66.7% of British teachers in E.S.Br.3), Belgium (60% of Belgian teachers), Greece (50% of Greek teachers), France (40% of French teachers), Spain (33.3% of Spanish teachers) and Czech (33.3% of Czech teachers).

- Thirty-six (36) teachers (83.7% of the sample) tried through personal studying either to obtain knowledge of ICTs or to develop the knowledge and the skills they already had. More specifically, 9 teachers (20.9%) obtained knowledge of ICTs through both seminars and personal studies (100% of Slovak teachers, 50% of British and Greek teachers, 33.3% of Czech teachers and 16.7% of Spanish teachers). Besides, 27 teachers (62.3%), that is the largest part of the E.S.Br.3 primary cycle educators, obtained knowledge of ICTs only through personal effort and studying. This category includes all teachers from Germany, Netherlands, Austria and Ireland as well as the largest part of the educational personnel from Spain (66.7% of Spanish teachers), Czech (66.7% of Czech teacher) and France (60% of French teachers). However, the percentage of teachers from other countries who chose self-education in order to learn how to use ICTs was smaller (50% of Greek teachers, 40% of Belgian and 33.3% of British teachers).

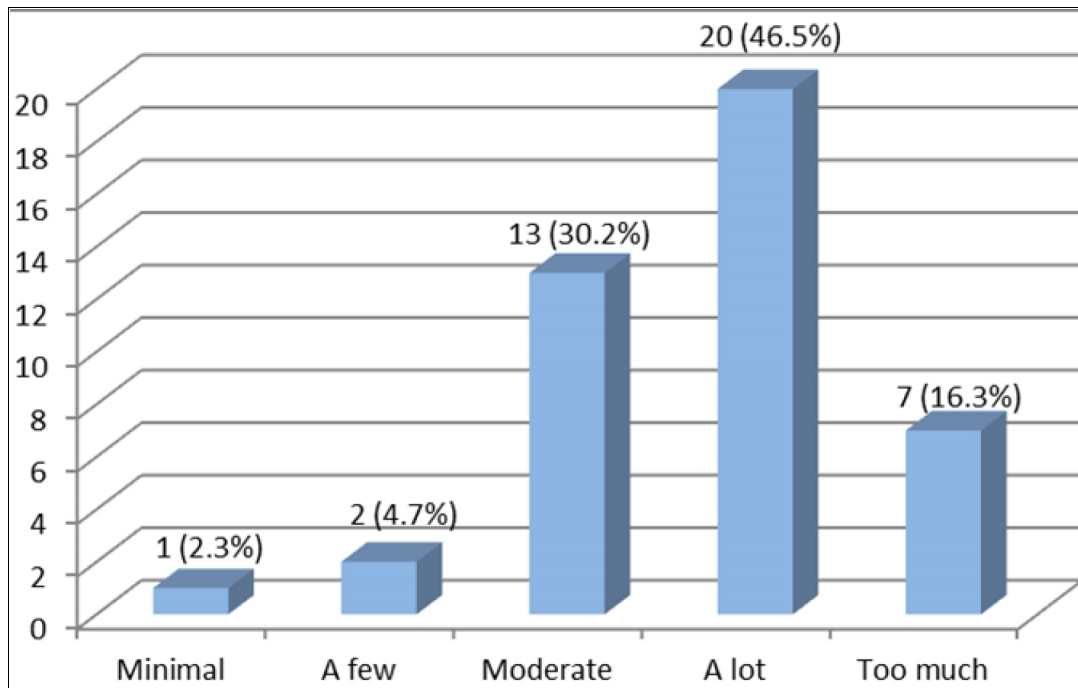


Fig. 1. European School Brussels III primary cycle teachers' self-assessed knowledge of ICT handling

Apparently, all teachers of E.S.Br.3 tried to incorporate ICTs into their cultural capital, since they are considered to be the basic element of the contemporary official culture [8]. Moreover, since the habitus constitutes an "internal governmental system" that determines behavior, selections and ways to act [33,p. 59], the majority of the E.S.Br.3 teachers used a

variety of ways to obtain knowledge of ICTs. They acted in a constructivistic way [33] through their exclusive personal study in order to approach the ICTs and integrate them into their habitus.

In Fig. 2 a representation of the answers given by teachers when asked to quantify the degree to which they used ICTs outside of school for personal everyday operations is shown.

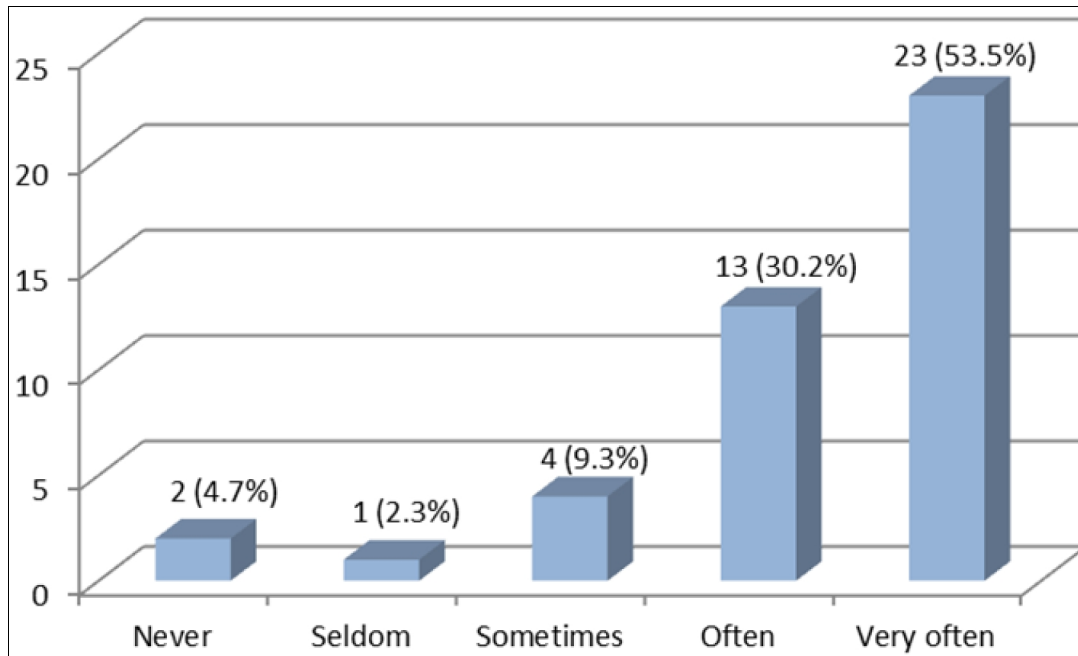


Fig. 2. Graphical representation of the answers given by the educators when asked to quantify the degree to which they used ICTs outside of school

From the elements given in Fig. 2 it is derived that almost all the teachers of the sample possessed ICTs skills (Mean=4.26, SD=1.05) which they exploited in their private everyday life (cases 'often' and 'very often': 36 teachers, 83.7%). Two teachers claimed that they never used ICTs outside of school (a primary school teacher from Germany and a kindergarten teacher from Greece) whereas only one teacher claimed that he rarely used ICTs outside of school (a primary school teacher from Slovakia). All three of the teachers above supported that they owned satisfactory knowledge which they obtained either through personal effort (German teacher) or by attending seminars on electronic computers (Greek and Slovak teachers). Thus, from their answers 'incorporation of the social into the body' emerged [34,p. 95], since they developed ICT skills so that they could meet the objective current social conditions and demands. Subsequently, ICTs constitute an element of the embodiment habitus, which Bourdieu [35,p. 94] names '*bodily hexis*', of the 83.7% of specific teachers. This is due to the fact that this hexis formulates the teachers' everyday habits and activates their ICT skills so that they can communicate, get new knowledge and amuse themselves through the net.

At E.S.Br.3, ICTs are a basic element of the school habitus, which is understood through the teaching policies that are involved in everyday teaching schedule [18] for the implementation

of the European Schools syllabus demands [19]. More specifically, primary school teachers have to teach ICTs as a particular subject taking advantage of the possibilities provided in the ICT room (Computers Laboratory). In this case, ICT teaching promotes the students' acquaintance with the technological tools as well as the development of their skills: technical use of computers, searching for and entering texts, searching on the Internet, use of electronic mail and critical use of technical objects [3, 36]. Moreover, all teachers have to try to develop the ICTs in teaching their courses [14] using the ICTs infrastructure available in the classrooms (Internet, printer, projector, interactive whiteboard) [20,36]. Nevertheless, in order for these specific goals to get materialized, primary cycle teachers must obtain the appropriate ICT dispositions and skills [11,33].

In Table 1 the answers given by the teachers of the sample when asked about their dispositions for the use of ICTs in the everyday teaching process are presented.

Table 1. Teachers' dispositions on using ICTs during the primary cycle courses

Questions	Very little	A little	Some what	A lot	Very much
1) Do you like to support your work in the school using ICTs?	0 (0.0%)	5 (11.6%)	13 (30.2%)	14 (32.6%)	11 (25.6%)
2) Do you feel confident teaching a lesson with the help of ICTs?	1 (2.3%)	4 (9.3%)	17 (39.5%)	15 (34.9%)	6 (14.0%)
3) Do you use ICTs in order to support your work in the school?	1 (2.3%)	4 (9.3%)	14 (32.6%)	12 (27.9%)	12 (27.9%)

The elements in Table I showed that the majority of teachers at E.S.Br.3 (cases 'a lot' and 'very much': 25 teachers, 58.2%; Mean=3.72, SD=0.98) are positive towards the use of ICTs in teaching. A statistical analysis showed that those teachers who have a good (especially a very good) knowledge of computer operation do like to use ICTs in teaching their courses ($\chi^2=29.36$; $df=12$; $P<.005$). The strength of the association observed was measured with Cramer's V correlation coefficient: Cramer's $V=.83$; $P<.005$). Those five teachers who claimed that they wanted to use ICTs 'a little' were women primary school teachers (11.6%), who had tried to obtain techno-capital of ICTs through self-education.

Furthermore, less teachers have confidence in teaching using ICTs compared to those teachers who claimed that they like to use ICTs in teaching their courses (cases 'a lot', 'very much': 21 teachers, 48.9%; Mean=3.49, SD=0.94). A statistical analysis showed that those who have a good (especially a very good) knowledge of computer operations feel more confident when they work through them ($\chi^2=58.1$; $df=16$; $P<.001$). The strength of the association observed was measured with Cramer's V correlation coefficient: Cramer's $V=.58$; $P<.001$). Yet the teachers who feel safer than others in using ICTs usually have graduate degrees. In this case, since the habitus gets formulated from people's cultural history [33], those specific teachers integrated ICTs into their habitus during their

undergraduate studies and research. The number of teachers at E.S.Br.3 who feel unsafe in regard with the use of ICTs in their courses is small (very little, a little: 5 teachers, 11.6%). They are mainly female primary school teachers who are at the beginning of their employment at E.S.Br.3 and they are expected to be evaluated by the Inspector and the head teacher of the school.

Besides, the E.S.Br.3 primary cycle teachers use ICTs extensively in teaching their courses (cases 'a lot' and 'very much': 24 teachers, 55.8%; Mean=3.7, SD=1.06). A statistical analysis showed that the teachers who know well (in fact, very well) how to operate ICTs, use them more in their courses ($\chi^2=33.78$; $df=16$; $P<.01$). The strength of the association observed was measured with Cramer's V correlation coefficient: Cramer's V=.89; $P<.01$). The 5 educators (11.6%) who use 'very little' and 'a little' ICTs to support their courses are women (4 primary school teachers and 1 kindergarten teacher), who placed their skills of using ICTs in the medium-low level. Since the habitus is considered to be a form of practical sensation and logic which orientates people's action, those few female teachers who feel unsecure and insufficient in using ICTs in teaching seem to activate a 'female hexis' which creates the sense that ICTs are not a preferential field for women [33,37].

In Table 2 the answers given by the educators of E.S.Br.3 about the ICTs tools they use to formulate and support their courses are presented.

Table 2. The frequencies of the tools that the educators use for their courses

	Never	Seldom	Sometimes	Often	Very often
Internet	1 (2.3%)	1 (2.3%)	9 (20.9%)	19 (44.2%)	13 (30.2%)
Educational software	5 (11.6%)	7 (16.3%)	14 (32.6%)	12 (27.9%)	5 (11.6%)
Digital material	5 (11.6%)	13 (30.2%)	12 (27.9%)	10 (23.3%)	3 (7.0%)
Educational material	13 (30.2%)	12 (27.9%)	12 (27.9%)	5 (11.6%)	1 (2.3%)

From Table 2 it can be concluded that teachers at E.S.Br.3 mainly use the Internet for the support of their educational work (Mean=3.98, SD=0.91), less frequently educational software (Mean=3.12, SD=1.11) whereas they rarely use digital material (e.g. e-books) (Mean=2.84, SD=1.13) and educational material in connection with a computer (i.e. Lego NXT) (Mean=2.28, SD=1.10).

Table 3 presents the answers given by the educators of the primary cycle at E.S.Br.3 on the degree to which, in their opinion, the various institutional agents, who get involved in the formulation of the educational reality at their school, want to use ICTs in everyday teaching.

From Table 3 it derives that the primary cycle educators have realized that the institutional framework within which European Schools operate forces them to use ICTs in teaching. The pressure they undergo comes strong from the Director of the European School they work in (Mean=4.18, SD=0.55) as well as from the Inspector (Mean=4.15, SD=0.7). Both the Directors and the Inspectors are considered to be the 'dominant social groups', which are ranked at the top of the educational hierarchy having supervisory and disciplinary power. Besides, they have the power for the formulation and the protection of the institutional habitus [15] as well as the determining of the educational priorities for the use of ICTs 'which are embedded and inform practice' in teaching in the case of European Schools [16,p. 431].

Thus, teachers realize that the school culture of E.S.Br.3 involves the use of ICTs in teaching. In this case, the institutional habitus of the European Schools restructures the teachers' habitus. This is due to the fact that in order for them to remain at the E.S.Br.3, their evaluation by the Director and the Inspector must ensure the reproduction of the school culture among the students, including ICTs as its basic tool.

Table 3. Teachers' views about the desire of institutional agents of the E.S.Br.3 to use ICTs in the classroom

Agents	Didn't answer	Very little	A little	Some what	A lot	Very much	Mean (SD)
Inspector	9 (20.2%)	0 (0.0%)	1 (2.3%)	3 (7.0%)	20 (46.5%)	10 (23.3%)	4.15 (0.7)
Director	3 (7.0%)	0 (0.0%)	0 (0.0%)	3 (7.0%)	27 (62.8%)	10 (23.3%)	4.18 (0.55)
Parents	8 (18.6%)	1 (2.3%)	0 (0.0%)	6 (14%)	23 (53.5%)	5 (11.6%)	3.89 (0.76)
Students	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (11.6%)	19 (44.2%)	19 (44.2%)	4.33 (0.68)

Furthermore, parents also exert pressure for the use of ICTs in the school teaching. The data analysis showed that those teachers who know that students' parents support the use of ICTs in the classroom feel safer than the rest when using them ($\chi^2=66.52$; $df=16$; $P<.001$). The strength of the association observed was measured with Cramer's V correlation coefficient: Cramer's $V=.62$; $P<.001$). In this case the 'family habitus' of the students [38] includes the ICTs since their parents are staff members of the EU. However, since family is the most crucial factor determining the gathering and the transportation of various forms of capital to children [10, 33], the students of the European Schools are widely familiar with ICTs [36]. That is why teachers realize that children do want to use ICTs in the classrooms of E.S.Br.3 (Mean=4.33, SD=0.68). In this case the students' habitus which includes the ICTs gets reinforced and is reproduced while studying at a European School. This fact in turn contributes to the reinforcement of the institutional habitus of the specific school [18] as far as the integration of ICTs in teaching is concerned. This happens because these specific students are comfortable using ICTs since they can act on their own in order, on the one hand, to find some information on the Internet and on the other hand, to use educational software and educational material so that studying their courses becomes more interesting.

An open-ended question was posed aiming to an in-depth exploration of the primary cycle teachers' views regarding the interventions they would like to take place in their schools in order for them to get helped in developing use of ICTs in teaching. The following results came out of the analysis of the answers given by the teachers:

Almost all E.S.Br.3 teachers requested seminars and training in ICTs (38 teachers, 88.4%). This is due to the fact that, as it was pointed out, certain teachers that are appointed to the European schools do not have the knowledge to meet the requirements of the ICT primary cycle syllabus:

'Until the government of a country decides that it is obligatory for their teachers to teach ICT, the resources needed to train, motivate and interest their teachers won't be available. So I think it is unfair to oblige people to teach it without adequate training. I also strongly believe that ICT should be used to enhance the curriculum and basic skills taught but it does not replace clear learning objectives, i.e. it should be used if it makes this clear. Not simply exposing the children to screens all day' (the emphasis is of the primary school teacher: British, 36-40 year old, first year in the E.S.Br.3).

However, since the habitus is a system of 'open dispositions' it lies on a permanent process

of adaptation throughout human's life [39,p. 133]. The need for the adaptation of the habitus is high when a person has to encounter new situations and new work conditions, just like the primary cycle teachers at E.S.Br.3 who are asked to transmit to their students their knowledge about ICTs. In this case it seems that the institutional habitus of the European School structures the teachers' disposition [15,18]. Consequently, they request retraining and seminars on ICTs, since they desire the restructuring of their habitus in order to adapt themselves to the demands of the school culture at the E.S.Br.3. Nevertheless, until a thorough education on ICTs is obtained by teachers in the European Schools, the issue of a superficial training in ICTs is raised for many primary school teachers who do not possess a sufficient techno-capital of ICTs. Thus, the need for an official confirmation of knowledge on ICTs by the teachers that are appointed at European Schools emerges:

'Teachers should have a basic minimum training themselves, e.g. ECDL (European Computer Driving License) (Irish, M.Ed., 41-45 year old, 8 years in the E.S.Br.3).

That is, the need to have an institutionalized form of cultural capital [10] proved by a certificate is highlighted.

For a fruitful development of ICTs, 8 teachers (18.6%) suggested that, on the one hand, collaboration among teachers should be promoted and on the other hand, the issues concerning the coordination of the ICTs educational activities in the E.S.Br.3 needed to be regulated. This results from the *'lack of common approaches'* (Dutch primary school teacher, 41-45 years old, 2nd year in the E.S.Br.3) due to the different ICT cultural capital of teachers. That is why the selection of a teacher with sufficient techno-capital of ICTs as *'ICT coordinator in order to propose activities and support teachers to build projects'* was proposed (French, primary school teacher, M.Ed., 51-55 years old, 2nd year in the E.S.Br.3).

In Table 4 the results of the evaluation of E.S.Br.3 made by its primary cycle teachers are presented.

Table 4. Evaluation of the infrastructure for the use of ICTs at E.S.Br.3

		Very little	A little	Some what	A lot	Very much
1)	Appropriateness of the school's infrastructure for teaching with the help of ICTs in general.	3 (7.0%)	3 (7.0%)	18 (41.9%)	18 (41.9%)	1 (2.3%)
2)	Suitability of the working conditions in the classroom to teach with ICTs.	1 (2.3%)	10 (23.3%)	18 (41.9%)	13 (30.2%)	1 (2.3%)
3)	Suitability and appropriateness of the premises, furniture and equipment in the ICTs room.	3 (7.0%)	9 (20.9%)	14 (32.6%)	12 (27.9%)	2 (4.7%)
4)	Ensure of students' physical health when they use ICTs in the ICTs room.	8(18.6%)	14 (32.6%)	10 (23.3%)	5(11.6%)	2 (4.7%)

From Table 4 it is concluded that primary cycle teachers think that the ICT infrastructure of the E.S.Br.3 satisfies moderately (Mean=3.26, SD=0.9) their teaching needs. A more detailed study of the evaluations that were provided by the teachers of the sample shows that: a) the infrastructure existing in their classrooms does not facilitate the exploitation of ICTs in teaching (Mean=3.07, SD=0.86); b) the ICTs room can moderately satisfy the

teaching needs (Mean=3.03, SD=1.03); and c) the conditions in the ICTs room are unhealthy for the students (Mean=2.46, SD=1.12). It is remarkable that those educators who positively evaluate (cases 'a lot' and 'very much') the ICTs infrastructure of the E.S.Br.3 are mainly female primary school teachers, having performed at least five years of teaching service in this specific school. Male teachers make different evaluations of ICTs infrastructure in E.S.Br.3 than their female colleagues; this tendency actually reflects the different notion each side has about what is the best way to effectively use ICTs in the educational process and what possibilities and advantages emerge from the above use. Indeed, men's habitus has proved to be more strictly connected with the use of machinery and technology [37] and ICTs.

The following results derived from the answers that primary cycle teachers gave to an open question regarding ICT infrastructure shortages in E.S.Br.3 as well as the obstacles to the utilization of ICTs in teaching:

- A significant part of the sample (15 teachers, 34.9%) thinks that the reinforcement of the ICTs infrastructure in the primary cycle classrooms is necessary:

'I would appreciate to have some (4-5) computers in the classroom for education' (Czech, primary school teacher, PhD, 46-50 years old, 3rd year in the E.S.Br.3).

Moreover, it is suggested that ICT infrastructure be reinforced in the classrooms of the E.S.Br.3:

'We need more ICT resources both for children to use i.e. cameras, camcorders, microphones etc. and for the teachers' to supplement the interactive whiteboard i.e. visualizers' (British kindergarten teacher, 31-35 years old, 2nd year in the E.S.Br.3).

- 19 teachers (44.19%) present the problems that the primary cycle students in the E.S.Br.3 face in the ICTs room. More specifically, they stress on the need for a better organization and management of the laboratory. For this to be accomplished teachers having ICTs knowledge and skills of a different level need to collaborate:

'The ICT room needs to be organized and managed. There need to be a policy on how to use computers and save work on the server. Computers are blocked, as teachers save material on them' (British, primary school teacher, M.Ed., 41-45 years old, 6th year in the E.S.Br.3).

The ICT laboratory needs both a renovation and an improvement of its infrastructure since there is not enough room for all the primary school students using it:

'Lack of linguistic keyboards. Numerous students work in the ICT room' (Spanish, primary school teacher, M.Ed., 51-55 years old, 9th year in the E.S.Br.3).

Furthermore, it was noted that the existing laboratory does not have either the technical infrastructure or the hygienic conditions required:

'The acoustics in the ICT room is terrible and there is very hot from the PCs. ICT room should be a room with WINDOWS, different furniture and there should be headphones for pupils to concentrate on the work' (Czech primary school teacher, PhD, 26-30 years old, 2nd year in the E.S.Br.3).

'Computer room should better ventilated. PCs should be repaired and updated' (British, English Language teacher, M.A., 46-50 year old, 6th year in the E.S.Br.3).

Finally, another important issue that emerged was the insufficient technical support of the needs of both the computer laboratory and the teachers who face difficulties in using ICTs in their classroom:

'The biggest obstacle is the fact that whenever we want new software installing we can't do it ourselves but must wait for a technician to have hire. Also, we are not allowed to have a spare set of printer inks. So if it runs out mid-lesson. That's it... until the technician buys some more and comes to visit' (British, French Language teacher, M.A., 51-55 years old, 8th year in the E.S.Br.3).

Thus, it is obvious that the primary cycle students of E.S.Br.3 face lack of support when they use ICTs. That is why it is proposed that:

'A full time technician for the primary school so that the problems of ink in printers, speakers that don't work etc. could be sorted out quickly and efficiently' (British, English Language teacher, 36-40 years old, 2nd year in E.S.Br.3).

Subsequently, those teachers who participated in this research have concluded that the culture related with the obligatory use of ICTs in the everyday teaching gets formulated on the basis of the European Schools syllabus as well as of the interventions of those agents who participate in the formulation of the educational reality of their school (Inspectors, Director, parents, and students). However, they highlight the fact that the fulfillment of the priorities for the use of ICTs set by the institutional habitus of the European Schools is prevented, in the case of primary cycle sector of E.S.Br., by shortage of ICTs technical infrastructure in the ICTs room and the other classrooms, by the lack of proper hygienic conditions and the unsafe conditions under which students work in the ICTs room and by the insufficient, according to their opinion, ICT technical support.

4. CONCLUDING REMARKS

In this work, an attempt was made to explore the views about the use of ICTs that teachers in the primary cycle of the E.S.Br.3 have, a school where, since its establishment, educational culture has been associated with the use of ICTs in everyday teaching. However, ICTs constitute an element of the institutional habitus of this specific school, which is being protected from the interventions of the European Schools' Inspectors and the Directors [1,2]. Moreover, the aforementioned culture gets reinforced and reproduced through the intervention of both parents and students, since ICTs are an element of their own habitus. It is worth noting that the families of these students belong to the upper middle class, as they are officers of the EU, which promotes through its policy the creation of a European society and of the economy of knowledge [31,40].

The most important findings of this study are shortly as follows:

- It seems that in general educators like to use ICTs in teaching, as they were familiar with ICTs on the grounds that they are part of their habitus [5,7]. Yet, they do realize that the institutional framework of the European Schools' operation [2,36] forces them to use ICTs in teaching.
- Those who know well (or very well) how to use ICTs feel more confident themselves

than the others when using them and they also feel that their using ICTs in the classroom is being accepted with pleasure by the students' parents. This finding reveals that these teachers have positive dispositions on using ICTs [10,35], because their habitus includes the ICTs and it corresponds to the cultural capital of the powerful European social, political and financial groups [7,8] that define the current educational policy on European Schools [36,40].

- It is mainly the Internet and to a lesser degree the educational software that are used to support the teachers' educational work in E.S.Br.3. It is obvious that the teachers participated in this research are more familiar with the use of Internet than the educational software, on the grounds that it is significant part of their habitus on ICTs [5,28].
- Almost all the educators in E.S.Br.3 requested seminars and training on ICTs in order for them to be able to better adapt to the requests of their school's culture. Thus, the institutional habitus of European School that is incorporated to its educational practices [2,3,14,19,36] affects the teaching staff's consciousness and makes it realize the necessity for in-service training on ICTs [17]. Consequently, the institutional habitus in E.S.Br.3 leads to the adjustment of teachers' habitus [33,35] in order to try to gain the necessary knowledge on ICTs that will give them the capability to fulfil better their teaching duties.
- Educators think that, on the one hand, the medium-quality ICTs' infrastructure is not sufficient for their teaching needs and on the other hand, that working conditions in the ICTs room are unhealthy for the students. This fact weakens the institutional habitus of the ICTs in the primary cycle of E.S.Br.3. Thus, educators think that what needs to be done is reinforcement of the ICTs infrastructure in primary cycle classrooms, expansion and better organization of the facilities in the ICTs rooms, and provision of technical support both in the Computers Laboratory and to themselves when they find problems in using ICTs in the classrooms.

In concluding, we believe that a research should be conducted among all European Schools regarding the utilization of ICTs in the teaching process. This research will record the prevailing trends almost 15 years after the new syllabus for ICTs was adopted in these schools.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Legislation L 212. Convention defining the Statute of the European Schools. Official Journal of the European Communities. 1994;37:0003–0014.
2. Schola Europaea. Regulations for Members of the Seconded Staff of the European Schools. 2011; Ref. 2011-04-D-14-en-2.
3. Schola Europea. Principles and objectives. Accessed 20 June 2013. Available: <http://www.eursec.eu/index.php?id=132>
4. Castells M. The rise of the network society. Vol. 1. 2nd ed. Oxford: Blackwell Publishers; 2000.
5. Bourdieu P. The Field of Cultural Production. Oxford: Polity Press; 1993.

6. Koustourakis G, Panagiotakopoulos C. Investigation of the familiarity with the ICT of new entrant students at the Department of Preschool Education of the University of Patras: A longitudinal study. In: Panagiotakopoulos C, editor. Proceedings. 2nd Pan-Hellenic Conference "Integration and use of ICT in education". Patras 28-30 April 2011. Patras: Laboratory of Computers and Educational Technology. Department of Primary Education. University of Patras; 2011. Greek.
7. Tondeur J, Sinnaeve I, van Houtte M, van Braak J. ICT as cultural capital: the relationship between socioeconomic status and the computer-use profile of young people. *New Media & Society*. 2011;13(1):151-168. doi: 10.1177/1461444810369245.
8. van Dijk J. Digital divide research, achievements and shortcomings. *Poetics*. 2006; 34(4/5):221–235. doi: <http://dx.doi.org/10.1016/j.poetic.2006.05.004>.
9. Vryonides M. Social and cultural capital in educational research: Issues of operationalisation and measurement. *British Educational Research Journal*. 2007;33(6):867–885. doi: 10.1080/01411920701657009.
10. Bourdieu P. The forms of capital. In: Richardson JG, editor. *Handbook of Theory and Research for the Sociology of Education*. New York, Westport, CT and London: Greenwich Press; 1986.
11. Norris P. *Digital Divide: Civic Engagement, Information Poverty and the Internet Worldwide*. Cambridge: Cambridge University Press; 2001.
12. Wilson K, Wallin J, Reiser C. Social stratification and the digital divide. *Social Science Computer Review*. 2003;2(2):133–143. doi: 10.1177/0894439303021002001.
13. Rojas V, Roychowdhury D, Okur O, Straubhaar J, Estrada-Ortiz Y. *Beyond Access: Cultural Capital and the Roots of the Digital Divide*; 2000. Accessed 28 November 2013. Available: http://www.utexas.edu/research/tipi/research/Beyond_Access.pdf
14. Schola Europaea. iClass Project. Board of Governors of the European Schools. Meeting in Brussels on 26, 27 and 28 January 2004. Ref. 2003-D-58-en-3. Brussels; 2004.
15. Reay D, David ME, Ball S. *Degrees of Choice*. Stoke on Trent: Trentham Books; 2005.
16. Thomas L. Student retention in higher education: The role of institutional habitus. *Journal of Education Policy*. 2002;17(4):423-442. doi: 10.1080/02680930210140257.
17. Reay D. 'Always knowing' and 'never being sure': Familial and institutional habituses and higher education choice. *Journal of Educational Policy*. 1998;13(4):519-529. doi: 10.1080/0268093980130405.
18. Reay D. *Class work*. London: UCL Press; 1998.
19. Schola Europaea. ICT – Teaching programme for the Secondary and Primary cycle. Approved by the Board of Governors on 26 and 27 October 1999. Ref. 2000-D-218, Brussels, 23 August 2000; 2000.
20. Evertsson J. Computer-Assisted Teaching and Learning in the European Schools: A survey during recent years. *Panorama*. 2010;234:150-158. Accessed 15 September 2013. Available: http://www.eursec.eu/fichiers/contenu_fichiers1/1521/Panorama_2010_1.pdf.
21. Voogt J. Consequences of ICT for aims, contents, processes, and environments of learning. In: van den Akker J, Kuiper W, Hameyer U, editors. *Curriculum landscapes and trends*. Dordrecht: Kluwer Academic Publishers; 2003.
22. Mikropoulos A. *The computer as a cognitive tool*. Athens: Ellinika Grammata; 2006. Greek.

23. Cooper B, Brna P. Supporting high quality interaction and motivation in the classroom using ICT: The social and emotional learning and engagement in the NIMIS project. *Education, Communication and Information*. 2002;2:113–138. doi: 10.1080/1463631021000025321.001.
24. Kozma R, Anderson RE. Qualitative Case Studies of Innovative Pedagogical Practices Using ICT. *Journal of Computer Assisted Learning*. 2002;18:387-394. doi: 10.1046/j.0266-4909.2002.00250.doc.x.
25. Teo T, Su Luan W, Sing CC. A cross-cultural examination of the intention to use technology between Singaporean and Malaysian pre-service teachers: an application of the Technology Acceptance Model (TAM). *Educational Technology & Society*. 2008;11(4):265–280. Accessed 28 August 2013.
Available: http://www.ifets.info/journals/11_4/19.pdf.
26. Sang G, Valcke M, van Braak J, Tondeur J. Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviors with educational technology. *Computers & Education*. 2010;54(1):103-112. doi: <http://dx.doi.org/10.1016/j.compedu.2009.07.010>.
27. Francis JL, Katz JY, Jones HS. The reliability and validity of the Hebrew version of the Computer Attitude Scale. *Computers & Education*. 2000;35(2):149-159. Accessed 13 September 2013.
Available: <http://www.sciencedirect.com/science/journal/03601315/35/2>.
28. Baron G-L, Harrari M. ICT in French Primary School, Twenty Years Later: Infusion or Transformation? *Education and Information Technologies*. 2005;10(3):147-156. doi: 10.1007/s10639-005-2994-7.
29. Kiridis A, Drossos V, Tsakiridou E. Teachers Facing ICT. The Case of Greece. *Journal of Technology and Teacher Education*. 2006;14(1):75-96.
30. Koustourakis G. The new educational policy for the reform of the curriculum and the change of school knowledge in the case of Greek compulsory education. *International Studies in Sociology of Education*. 2007;17(1/2):131-146. doi: 10.1080/09620210701433878.
31. Mannova B. Integration technology into education: the Czech approach. In: Chapman DW, Machlk LO, editors. *Adapting Technology for school improvement: a global perspective*. Paris: IIEP Publications; 2004.
32. van Braak J, Tondeur J, Valcke M. Explaining different types of computer use among primary school teachers. *European Journal of Educational Psychology*. 2004;19(4):407–422. doi: 10.1007/BF03173218.
33. Bourdieu P. *The Logic of Practice*. Cambridge: Polity; 1990.
34. McNay L. Gender, Habitus and the Field. *Pierre Bourdieu and the Limits of Reflexivity. Theory, Culture & Society*. 1999;16(1):95-117. doi: 10.1177/026327699016001007.
35. Bourdieu P. *Outline of a Theory of Practice*. Cambridge: Cambridge University Press; 1977.
36. Navas Elorza J. The adoption of technology at the European Schools. *Panorama*. 2010;234:11-15. Accessed 5 September 2013.
Available: http://www.eursec.eu/fichiers/contenu_fichiers1/1521/Panorama_2010_1.pdf.
37. Bourdieu P. *Masculine Domination*. Athens: Pataki Editions; 2007.
38. Atkinson W. From sociological fictions to social fictions: some Bourdieusian reflections on the concepts of 'institutional habitus' and 'family habitus'. *British Journal of Sociology of Education*. 2011;32(3):331-347. doi: 10.1080/01425692.2011.559337.

39. Bourdieu P, Wacquant LJD. An invitation to reflexive sociology. Chicago: University of Chicago Press; 1992.
40. Commission of the European Communities. The eLearning Action Plan. Designing tomorrow's education. COM(2001) 172 final. Brussels; 28-3-2001.

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