

The Portuguese programme 'one laptop per child' and its impact on families: a study on parents' and children's perspectives

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Abstract

This paper intends to present and reflect upon some of the findings emerging from a research project entitled "Navigating with 'Magalhães': Study on the Impact of Digital Media on Schoolchildren" that was conducted at the Communication and Society Research Centre at the University of Minho, Braga, Portugal. The project focused on the politics of the governmental programme "One Laptop per Child" part of the Portuguese Technological Plan for Education, and the uses of the "Magalhães" computer, and other media, by children aged 8-10 years. This paper analyses the impact of this particular public policy on digital literacy of young children based mostly on the perspectives of parents and their modes of mediation. It also debates parents' and children's perspectives on parental rules on computer and Internet usage. It ends by concluding that the impact of this programme occurred mainly at the level of access rather than the social and educational uses and practices. It also highlights the importance of family in the way children access and use ICT.

Keywords: one laptop per child, schoolchildren, ICT uses, digital inclusion, parental mediation.

1. Introduction

Over the past decade we have experienced and played a key role in a rapid technological change which has posed important challenges to governments worldwide. The economy and the global markets require citizens who are able to innovate and claim their place in the modern knowledge society. At a European level, strategies were developed to reaffirm innovation policies in the expectation that they would generate well-being and empower citizens. In 2000, at the Lisbon European Council, a programme for the European Union, the "Lisbon Strategy", was set out and its goal was to make the EU "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion" (Lisbon European Council, 2000). Five years later, at the 2005 Spring European Council, the EU decided to relaunch the Lisbon Strategy, seeking to "renew the basis of its [Europe] competitiveness, increase its growth potential and its productivity and strengthen social cohesion, placing the main emphasis on knowledge, innovation and the optimisation of human capital" (European Council Brussels, 2005).

Following this revision, in 2005 the Portuguese government drew up the Technological Plan which comprises the Education Technological Plan (ETP), a specific action plan for education that was launched in 2007 and sought to "place Portugal among the five most advanced European countries in terms of the technological modernisation of education" (Resolução do Conselho de Ministros, 2007). It was within the framework of this education public policy that the "e.escola" ("e.school") programme and, later on, in

2008, the "e.escolinha" ("e.little school") initiative, aimed at primary school children, were set up. The latter had three main objectives: (1) "to ensure primary school children have access to personal computers with educational content"; (2) "to generalise the use of the computer and the internet in the first learning experiences"; (3) "to ensure thousands of families have access to their first computer" (www.pte.gov.pt). In order to meet these objectives, the government launched the computer "Magalhães" to be distributed to all primary school children. The "Magalhães" computer, whose name is meant to be a tribute to the Portuguese explorer/navigator Fernão de Magalhães (Ferdinand Magellan), was undoubtedly the most visible feature of the "e.escolinha" governmental initiative.

Education is therefore conceived as "the key to economic survival in the twenty-first century" (Trilling & Fadel, 2009: 6) and digital literacy is the basis for integrating citizens in the information society. The European framework for key competences for lifelong learning (European Parliament and the Council, 2006) identifies and defines eight key competences necessary for personal fulfilment, active citizenship, social inclusion and employability in a knowledge society. One of these eight competences is precisely digital competence. According to the "European Commission Recommendation on media literacy in the digital environment for a more competitive audiovisual and content industry and an inclusive knowledge society", media literacy is defined as "the ability to access the media, to understand and critically evaluate different aspects of the media and media content and to create communications in a variety of contexts" (European Commission, 2009, article 11).

Despite several documents of national and international institutions and several authors suggest that media literacy go beyond access, emphasizing dimensions such as analysis and critical understanding, production and participation, the fear of technological backwardness has led some European governments, especially in developing economies, to implementing technological policies for education based mainly on access and connectivity. These policies, as the One Laptop per Child initiative (OLPC), founded by Negroponte (1996), are based on the distribution of a low cost computer for all schoolchildren, aiming to promote the digital inclusion of children and their families. Mainly centered on distributing computers and technological equipping, these policies are primarily criticized for their technological determinism, i.e for considering technologies have the power to change, per se, education and learning.

With regard to the Portuguese programme 'e.escolinha' statistics show this governmental programme had a positive impact in terms of access, thereby contributing to reduce the digital gap between families. According to the Questionnaire on the Use of Information and Communication Technologies by Families (INE, 2012), "from 2008 to 2012 there was an average annual increase of 12% in broadband access in households: in 2008 almost 40% of Portuguese families had a broadband connection, while in 2012 this figure rose to 60%. For the period under consideration, there was an average annual increase of 8% in both computer and internet access" (INE, 2012: 1). Although this increase cannot be directly ascribed to the Technological Plan programmes, it should however, be said that they had a fundamental role in terms of computer and internet access for families. As far as the "Magalhães" computer is concerned, around 500 thousand units were distributed between 2008 and 2011. However, other questions arise: What bearing did the programme have on the uses, practices and appreciation of Information and Communication Technologies, particularly of the "Magalhães" computer, in the family context? Was this computer the first one to enter these families' household? What role did parents play in their children's relationship with the media and with this computer in particular? These are the main topics to be discussed in this article.

2. The importance of the family in child-media relationships

Despite many changes in the way people engage with the media, mainly due to the proliferation and the increasing portability of digital technologies and to social changes in families and households, the family remains the main context of media reception and experiences, especially for children. Previous studies show the importance of family in defining children's media experiences and the quality of these experiences (Simões, 2012; Pereira, 1999; St Peters et al., 1991; Valkenburg et al, 1999; Lull, 1990). The authors argue that family mediation influences children's media uses and practices and the way they understand and learn from these means, although families differ in their relational dynamics. In order to characterise the strategies that parents use to mediate children's media experiences, previous studies on television and then on the Internet proposed the distinction between 'active mediation', 'restrictive mediation' and 'indirect or no focalised mediation'. In the first one, parents are present and stay with children, discussing with them the child's media activities; this type of mediation provides children with a critical comprehension of media. The second form occurs when parents control the child's media activities setting rules that restrict media uses. The third does not require parents' involvement and it happens casually, not deliberately. It is developed by observation and it includes opinions and attitudes of parents related to media and ICT and general comments on them. In the scope of the EU Kids Online II Survey researchers also included two other forms of parental mediation: monitoring, when "the parent checks available electronic records of the child's internet use afterwards"; and technical, when "the parent uses software or parental controls to filter or restrict the child's use" (Haddon, 2012: 17).

The topic of parental mediation of children's media use is a subject that has been extensively studied in many empirical projects focusing on different media, from television until more recently the Internet, the mobile phone and ICT in general (see for instance, Haddon, 2012; Cardoso et al, 2012; Nathanson, 2013). All these studies are suggestive concerning the importance of the family context for children's media uses. This is even more important if we consider the switch from the public to the private sphere in the lives of children and young people. Livingstone (2002), discusses the decline of street culture and the rise of the home media as related factors, considering that "houses are increasingly 'media-rich', this reflecting both a common provision of media for the family (a shared culture) and a personal provision of media for children in their bedrooms (bedroom culture) (Livingstone, 2002: 167).

The household is also valued as the context of ICT and media access. One of the concerns of the statistics, for example, is to show the levels of deployment of computers and the Internet at home. To give and to improve families' access to ICT has become a strong social imperative that governments are concerned to ensure. In order to bridge inequalities in individuals' access to ICT and also to reduce differences between countries, the EU launched a number of different programmes with a technological focus, given the importance of preparing individuals for the information society and knowledge economy.

The Portuguese policy programme "e.escolinha" is a good example of an initiative directed to pupils and primary schools but intending also to reach families. First of all, by giving families the opportunity to have access to a computer; and secondly by sensitizing parents to the importance of making use of technologies, making them believe that the ability to use ICT is "an essential life-skill for primary-age

children as they grow up into an 'information society'"(Selwyn, Potter & Cranmer, 2010:10). It is therefore understandable that parents create some expectations in relation to the importance of ICT in children's lives and want to equip their homes with new media and technology. As observed by Selwyn *et al*, "whilst giving children the required skills to live and work in the modern world is important, the prioritization of increased ICT use in schools also comes from the personal beliefs and experiences of parents and teachers themselves" (Selwyn, Potter & Cranmer, 2010:10). There is therefore an exchange of expectations on children's uses of new media and technology that spill over from the public opinion to home and vice versa. And it is the demand for new digital skills that makes education – at school and at home - "an integral component of the changing contemporary world" (Selwyn, 2013: 5).

3. Methods

This paper intends to present and reflect upon some of the findings emerging from a research project titled "Navigating with 'Magalhães': study on the impact of digital media on schoolchildren". The project involves the study of the politics of the governmental programme 'one laptop per child', created within the Portuguese Technological Plan for Education, and the study of the uses and practices of the computer and other media by children aged 6-10 years old.

To achieve this second goal, questionnaires were administered to primary school children, their parents and teachers. The sample was selected from the population comprising the 3rd and 4th grade students attending the 1st cycle schools in the municipality of Braga. A total of 32 schools (out of the existing 72) participated in the study, with the final sample consisting of 1517 3rd and 4th grade students (out of a population of 3584), and 1264 parents and guardians. The children's sample size was determined considering a 95% confidence level and a 2% margin of error. The parent questionnaires were given to the children to take home and were completed there. The parents were informed of the study and its objectives in advance.

This article will focus on the questionnaires applied to the parents and it will also take up some issues from the questionnaires completed by children with regard to rules on using media as well as parents' mediation processes.

The statistical analysis of the data from the "Parent/Tutor Questionnaire" and "Student Questionnaire" used the IBM - SPSS Statistics v21 software. The open questions were categorized and analysed through the NVivo qualitative analysis software.

From the data provided by questionnaires one expects to understand parents' perspectives on the presence and the importance of media in children's lives. As the study is mainly focused on the Portuguese programme 'one laptop per child', some topics on the use of the computer and its impact on children's learning process will be highlighted. The article will also be looking into the reasons why parents invest in computers and in the Internet, seeking to ascertain if the conclusion reached by Buckingham (2002) and Mumtaz (2001) that parents regarded the educational value of computers as the main reason to invest in them applies to this study.

The analysis will depict the differences between families in terms of understanding and mediating the child-media relationship, considering their socioeconomic status and the parents' occupations. The

objective is to examine if socioeconomic family contexts are influential on media access and uses, as advocated by earlier studies (Seiter, 1999; Pereira, 1999; Lull, 1990, Livingstone, 2002, among others).

4. Results and discussion

4.1. Demographic profile of the families

The average age of the parents/tutors was 39,5 with 65% of the respondents being between 35 and 45 years old. In terms of education, "Secondary School- up to the 12th grade" (28%), "Higher Education" (27%) and "3rd Cycle of Basic Education¹ – up to the 9th grade" (22%) were the most frequent levels. As far as occupations are concerned, the most frequently selected were "Specialists in intellectual and scientific activities" (20%); "Personal, protection and safety services providers and salespeople" (16%); "Skilled industrial and construction workers and craftsmen" (11%). The "Unemployed" group also stands out at 12%, which is a very high rate due to the economic crisis Portugal is going through.

Noteworthy is also the fact that 76% of the questionnaires were filled in by mothers, 22% by fathers and 2 % by other relatives (siblings, grandparents, uncles/aunts). Bearing in mind the central role mothers play in the education of Portuguese children, this result was to be expected.

4.2. The importance of media in children's lives

In order to understand the role of the family in children's relationship with the media, it was necessary to first determine the importance it assigns to the role of the media and digital technologies in children's lives. Practically all the parents who responded considered them to be of great importance in their children's lives: 95% regarded their role as being important /very important, which is, in fact, a very significant percentage. It was, however, interesting to note that, on the whole, for the more skilled occupational groups and the more highly educated the importance assigned to the role of the media in children's lives is higher than for the less skilled occupational groups and those having lower levels of education².

When questioned about the use of the computer and its advantages and disadvantages, most parents believe that using this technology brings a significant number of benefits to their children: Helping to learn about computers and learning to use them (95%); increasing general knowledge (92%); and helping to have a better future since nowadays more and more jobs require its use (91%) are the replies that obtain the highest levels of agreement as far as the benefits are concerned (Graph 1). Opinions are most divided over the item "Being entertained" with 72 % stating they disagree or neither agree nor disagree.

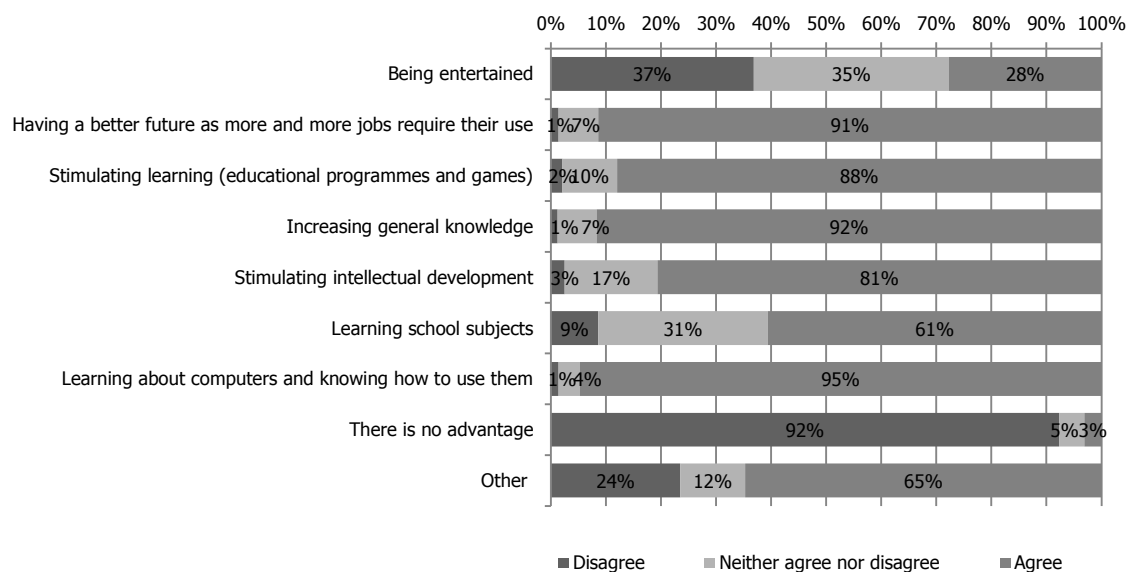
¹ The 3rd Cycle of Basic Education is attended by students from 12 to 15 years old.

² Results according to the chi-square independence test at a confidence level of 95 % ($p < 0.05$).

There are, however, some significant differences when examining these results taking into account the level of education and the occupation of the respondents. Thus, the items "increasing general knowledge" and "learning about computers and knowing how to use them" are valued by all the parents, regardless of their level of education or occupation. On the other hand, the item "having a better future since nowadays more and more jobs require its use", despite being valued by all groups, is slightly more appreciated by parents with lower levels of education and who have less skilled jobs or are unemployed. This situation is all the more evident when it comes to the item "learning school subjects". In contrast, "stimulating learning" and "stimulating intellectual development" are mostly selected by families with higher education levels and more skilled occupations. Entertainment is perceived in a similar fashion by parents, with a tendency to disagree or neither agree nor disagree with this advantage. However, parents whose education and occupation are at an intermediate or high level are the ones who tend to disagree with this item.

As can be seen, parents view the computer essentially as a learning tool and a means to personal and professional advancement and do not ascribe much importance to the entertainment factor, despite the fact that it is the reason why children most want to have a computer and enjoy using it. Besides this, if the age group of the children taking part in this study is taken into account (8 to 10 years old), one could expect the leisure component to have been more present in the parents' discourses. It is, in fact, noteworthy how parents specially assign value to learning and work from early on in the relationship that their children establish with this technology, even though the expectations may differ among socioeconomic groups.

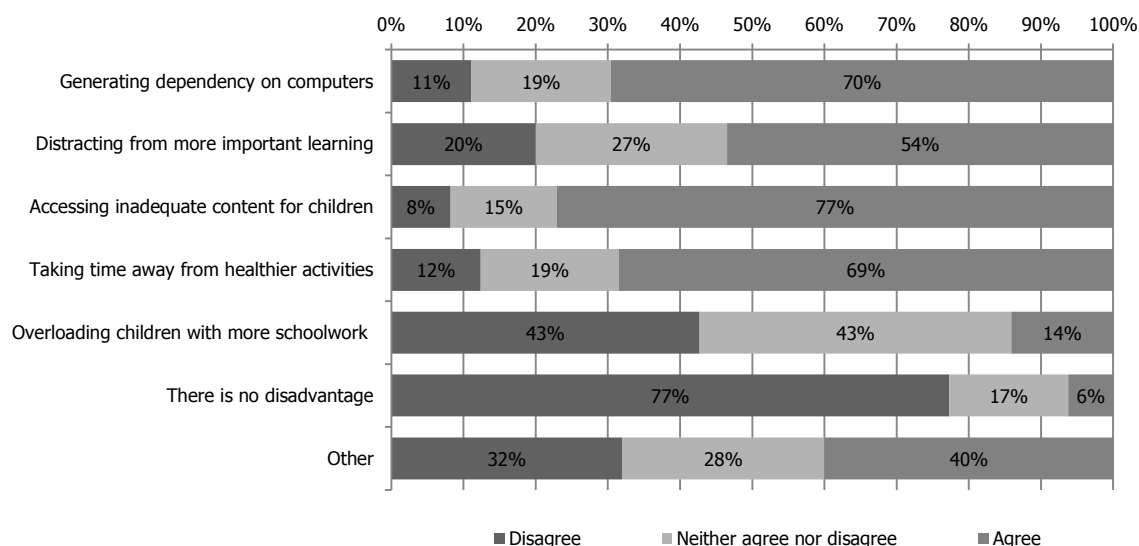
Graph 1. Main advantages of using computers in the opinion of parents



The discussion on the use of the computer, however, is not confined to its advantages. Among the disadvantages selected by the parents were: access to unsuitable content for children (77%), the

dependency it may generate (70%), taking time away from healthier activities (69%), which were the most frequently mentioned by parents (Graph 2).

Graph 2. Main disadvantages of using the computer in the opinion of parents.



The disadvantages pointed out by the parents match the concerns they usually voice regarding the use of Information and Communication Technologies, which extend to other types of media, namely television and videogames: access to inappropriate content, dependency on technology, and the fact that time is taken away from other activities, such as reading, going for walks and sports.

Differences between families were identified here as well: there is a significant dependent relationship (value-p < 0.05) for all the items, i.e., the level of agreement with the disadvantages presented is always higher in families with higher education levels and more skilled occupations. Although opinions are not unanimous within the socio-occupational groups, the data reveal that these families are more concerned about the possible threats arising from the use of the computer. These results may suggest a higher level of information regarding the potential risks and opportunities that may derive from how one makes use of the computer. What will then undoubtedly play an important role is the use skills and digital literacy of the users (children, in this case) which schools can promote.

Are parents open to the idea of schools using and analysing media as part of educational work whose purpose is to promote the critical and selective use of such media? If one considers parents' opinions on the media and technologies that should be used and analysed in school, it can be seen that the computer and the Internet are the means most valued by these parents, as they regard them as indispensable working tools in the knowledge society and the job market. The computer and the Internet obtained 92% and 85% of replies respectively, which demonstrates there is an almost unanimous opinion on their being used for work at school. Newspapers and magazines, which are very often associated with information, come next, even though more than half of the parents do not consider it important that the radio, on

principle also viewed as a means of information, be worked on at school. 75 % of the parents were in favour of work being done on the press at school. All the other items obtained less than 50%. Television, social networks, videogames and mobile phones, which are very frequently used by children and could thus merit critical analysis and reflection at school, are undervalued by more than half of the parents when it comes to their being used for work at school. Therefore, with the exception of the computer and the Internet, which parents welcome at school, there does not seem to be much awareness among a large percentage of parents of the work that can be done at school in terms of media education extending to the various media. The mobile phone and videogames are the items that obtain the highest number of negative responses: 83% and 82 % respectively. Although the mobile phone is nowadays a convergent technology which children have access to from an early age and can use to communicate with family and friends, play games, surf the internet and connect to social networks, it appears at the bottom of the list of the communication technologies that parents would like to see analysed at school. When cross-referencing the item "media and communication technologies that should be used and analysed at school" with the parents' education levels and occupations, the results are interesting. The computer obtains a percentage of positive replies which is always above 90% regardless of the characteristics of the families. The same applies to the Internet, albeit with slightly higher agreement percentages among parents with higher education and occupational levels. Television is a case which stands out as opinions are split within the socio-occupational groups. The percentage of parents with Basic Education that state they disagree with it being worked on at school is the same of the parents with Higher Education who say they agree (Table 1).

Table 1. Media and communication technologies that should be analysed at school.

	<i>Level of education</i>						value-p ^a
	Basic education		Secondary School		Higher Education		
<i>Media and communication technologies that should be used and analysed at school</i>	Nº	%	Nº	%	Nº	%	
<i>Television</i>							p<0.05
No	334	59,9%	173	49,3%	135	40,1%	
Yes	224	40,1%	178	50,7%	202	59,9%	
Total	558	100,0%	351	100,0%	337	100,0%	
<i>Radio</i>							p<0.05
No	375	67,1%	192	54,7%	151	44,8%	
Yes	184	32,9%	159	45,3%	186	55,2%	
Total	559	100,0%	351	100,0%	337	100,0%	
<i>Newspapers and magazines</i>							p<0.05
No	203	36,4%	67	19,0%	42	12,5%	
Sim	354	63,6%	285	81,0%	295	87,5%	
Total	557	100,0%	352	100,0%	337	100,0%	
<i>Mobile phone</i>							p<0.05
No	485	87,1%	295	84,0%	251	74,5%	
Yes	72	12,9%	56	16,0%	86	25,5%	
Total	557	100,0%	351	100,0%	337	100,0%	

<i>Internet</i>							p<0.05
No	119	21,3%	43	12,3%	20	5,9%	
Yes	439	78,7%	308	87,7%	317	94,1%	
Total	558	100,0%	351	100,0%	337	100,0%	
<i>Social networks</i>							n.s
No	316	56,9%	197	56,0%	186	55,2%	
Yes	239	43,1%	155	44,0%	151	44,8%	
Total	555	100,0%	352	100,0%	337	100,0%	
<i>Computer</i>							n.s
No	55	9,9%	25	7,1%	24	7,1%	
Yes	503	90,1%	325	92,9%	312	92,9%	
Total	558	100,0%	350	100,0%	336	100,0%	
<i>Videogames</i>							p<0.05
No	472	84,7%	297	84,6%	249	73,9%	
Yes	85	15,3%	54	15,4%	88	26,1%	
Total	557	100,0%	351	100,0%	337	100,0%	

^aResults according to the chi-square independence test at a confidence level of 95 % (p<0.05).

An aspect which is worth highlighting in this analysis is that the percentage of positive replies to all the items is practically always higher for parents who have higher education levels, with some cases in which the percentage is the same or very similar to that of parents with secondary school education. The same applies to the parents' occupations.

Although it is not possible to conclude in a linear fashion that higher education levels and skilled occupations mean families that have more information and knowledge, the data suggest that families who possess more symbolic resources are more open to the media being worked on at school. This is undoubtedly a crucial element to bear in mind when informing and raising families' awareness of the importance of media education, both at school and in the family.

In the following points, I will examine how ICTs are handled and mediated at home by the families.

4.3. Importance and uses of the "Magalhães" computer

Computers are part of our daily experiences and nowadays families acknowledge that it is indispensable to have access to this technology. This explains the importance they ascribe to purchasing it, as shown by the data. Although the vast majority of the families already had other computers at home (95%), practically all of them joined the governmental initiative: 98% of the families acquired the "Magalhães" computer. Of those who opted not to do so, 43% mentioned precisely the fact that they already had other computers at home. This massive endorsement can be explained by the computer's low cost³, the

³ The computer could be purchased for a maximum price of 50€. Children who benefitted from the School Social Services could either purchase it for 20€ or obtain it free of charge. More than half of the families surveyed (62%) acquired the computer for 50€; 19% paid 20€ and 19% obtained it for free.

educational purposes attached to it and by the fact that it is a laptop, which enables it to have a personal use that children prize so much⁴.

The "Magalhães" was the first computer in 15% of these families' households⁵. Although there are not many cases where this technology made its appearance at home for the first time, the results indicate a significant dependence relationship between "the "Magalhães" was the first computer in the household" and "level of education", as well as "parents' occupation" (value-p < 0.05). It appears that the fact that "Magalhães" was the first computer in the household is more significant in the case of parents with lower education levels as well as of families whose members have less skilled jobs or are unemployed. It is also these households that stated they did not have access to a computer, thus, on the whole, the data allow one to infer that the proportion of cases that do not have computers at home is significantly higher among parents/tutors with lower levels of education and less skilled occupations.

Based on the examination of these results, it can be concluded that, as far as this group of parents is concerned, the "e.escolinha" programme, reached its goal of ensuring families had computer access. Although in this specific case it was not the first computer for many of the families, it was nonetheless significant in that it enabled families from lower socio-occupational groups to have access to this technology. This is also the reason why it is possible to state that the governmental programme contributed, as was its purpose, to the digital inclusion of these families, but only in terms of access.

The same cannot be said of Internet access. On purchasing the "Magalhães" computer families could opt to purchase the mobile broadband Internet service. However, the overwhelming majority (95%) of the surveyed families chose not to do so. One of the main reasons given by parents not to purchase this service is the fact that they already have Internet access at home (87%)⁶, which, in most cases, is through a wireless connection (66%). The price charged, the fact it is regarded as unnecessary and the concerns about the dangers of internet access for young children are other reasons put forward.

Access to technologies is, undoubtedly, a fundamental dimension of digital inclusion. However, the uses and the practices, as well as the levels of digital literacy are also crucial dimensions which cannot be overlooked when discussing digital literacy. It is at this level that the main weaknesses of the "e.escolinha" programme are to be found. The policy makers and their promoters showed a great concern for the issue of access and set out the distribution of the computer to families and children as the main goal, but failed when it came to setting up a pedagogical action plan and to promoting digital literacy.

Although the overwhelming majority purchased the "Magalhães" computer, the percentage of children who use it on a regular basis is much lower. 25% of parents state that their children never use the computer at home, while only 10% mention they do so every day. As far as use at school is concerned, 37% of the parents state that the computer is never taken to school, whereas only 17% say they do so more than once a week, with a very insignificant number saying their children take it to school every day. The weight of the computer in the backpack, the fact the teachers never ask for the "Magalhães", the

⁴ In the children's questionnaire they were asked "What good things did the "Magalhães" bring to your life?"

⁵ It is important to mention that the percentage of families who reported having other computers at home (95%) refers to the time of completing the questionnaire, in 2012, and not to the time they received the computer "Magalhães" (2009-2010).

⁶ The 13% who do not have access to the Internet are mainly families whose members have the basic education level, have unskilled jobs or who are unemployed.

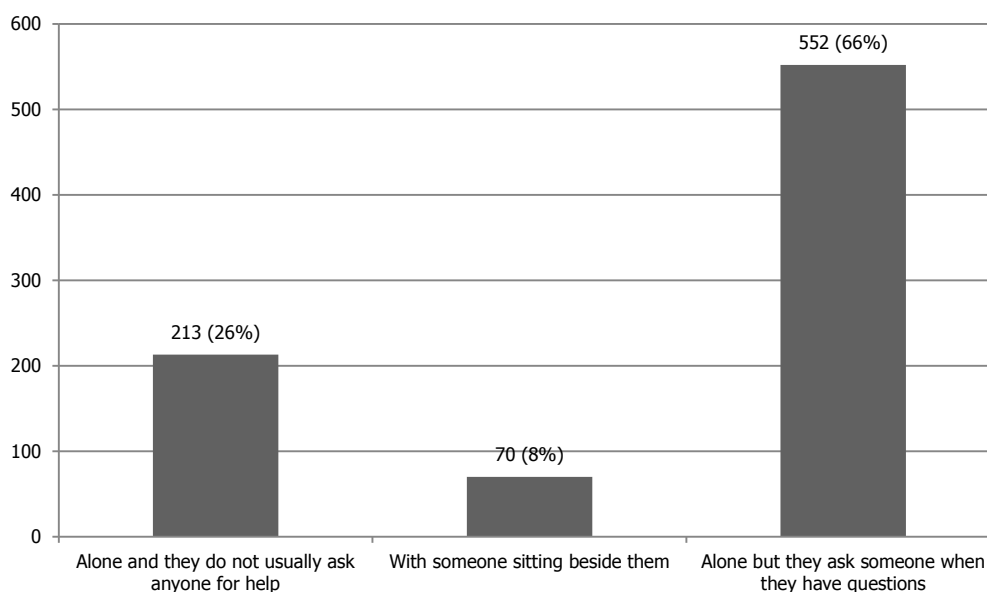
equipment breakdowns and its poor performance are the main reasons given by the parents to explain why their children do not take the computer to school and do not use it at home.

Regarding the types of uses, the governmental programme was not proficient in stimulating children to use the computer in new ways, nor was it able to ensure that they could take full advantage of its potential. When examining the parents' and the children's replies regarding the main uses of the "Magalhães" computer, it can be seen that "playing games", "doing Internet searches", "listening to music", "reading and writing texts" are among the most frequent uses. Checking the news on the Internet, writing on a personal or class blog, making videos or films and sending emails are among the activities the children never do. It should be noted that approximately half of the parents state that their children use the computer only a few times to do homework/exercises. As the programme under discussion is educational in nature and directed to schools, one would expect that children use the equipment to carry out their school tasks. However, according to parents and the children themselves, this happened infrequently. An examination of how the "Magalhães" was used both at school and at home shows that, at this level, the governmental programme fell well short of its objectives and of the expectations it created among students, teachers and parents. In most of the schools where this study was conducted, the "Magalhães" was not a tool that was integrated in the teaching-learning process, nor were its uses in this context in line with what many children already did or knew how to do on the computer.

4.3 Parental mediation of computer and Internet use

According to some studies on parental mediation of the media, children's age and the location of media consumption are two of the factors that may influence the type of mediation. Although portability and technological convergence have, to some extent, altered the way in which media are used, the place of consumption, social or private, may have a significant influence on the type of interaction parents have, especially with younger children. It was with this objective in mind, that parents were asked about where in the household the children used the computer. The living room obtained 76 % of replies, followed by the bedroom with 49%, the kitchen with 25% and the office with 17%. It is noteworthy that it is a place of social interaction which obtained the highest number of replies. In line with conclusions from other studies, it could be stated that this type of use lends itself more to interaction between parents and children and, as result, to the mediation of computer use. The data obtained, however, do not allow one to definitely draw this conclusion. In any case, over half the parents (66%) state that their children use the "Magalhães" on their own, and ask for help when they have questions. 26% mentioned that their children use the computer on their own without asking for help while 8% said they use the computer with somebody sitting beside them (Graph 3).

Graph 3. How children use the "Magalhães" computer at home (reported by parents)



When examining these data, it is necessary to bear the children's age in mind as it is a factor that may explain the percentage- nonetheless low- of children who use the computer with someone beside them because they need help. These may also be the children who are accessing the computer for the first time and therefore require more guidance from their parents due to the little experience they have in handling this technology.

On the whole, the data also show that, according to the parents, the children tend to use the computer on their own although some do ask for help while others do not take that step, which may suggest that in this case the likelihood of mediation will be lower. In this analysis one has to bear in mind the different experiences the children may have had with the computer, their expectations as well as their different user abilities.

This study sought to determine parents' attitudes when their children are using the computer by providing them with the possibilities listed in Table 2. It also sought to ascertain whether they had ever installed safety software applications.

As far as the use of safety software applications is concerned, 69% of the parents stated they had never installed any. The percentage of parents who said they had (31 %) is significantly higher for those with higher levels of education. This type of mediation was called 'technical mediation of the child's internet use' by the EU kids Online II survey, which is when "the parents use software or parental controls to filter or restrict the child's use" (Haddon, 2012:17). Although it is a strategy that may help parents control what their children do (or do not do) on the Internet, in some cases it might lead to some parents opting out from active mediation strategies that encourage and discuss the type of activities children carry out online. For that reason, it may also be regarded as a restrictive strategy that might help to protect but does not prepare nor empower the child to deal with the online world.

The table below (Table 2) presents some of the strategies parents employ regarding their children's use of the computer. Although limited by the fact that the strategies presented are mostly restrictive, one does gain some insight into the parents' concerns about this activity. Monitoring what the child is doing on the

computer is the strategy that obtains the highest percentage in terms of the frequency with which it is used. Although it is not known whether this strategy involves active mediation as defined by EU Kids Online II, meaning that “the parent is present, staying nearby, encouraging or sharing or discussing the child’s online activities”, it is nonetheless significant that monitoring is the option the parents indicate as carrying out “many times”. This situation is common to all levels of education, despite being slightly higher for parents who have secondary school education. Once again, the children’s age is a variable that has to be taken into account in this analysis. According to previous studies on parental mediation of television, mediation in situations of media experiences is more frequent with younger children (Pereira, 1999). Regardless of the type of parental involvement, what seems worth highlighting is the fact that monitoring reveals concern about what children are doing on the computer.

Regarding the other strategies presented, limiting access time comes in second in terms of frequency, whereas not allowing the downloading of games or Internet programmes barely exceeds 50% in the “many times” frequency, which may have to do with the fact that this is not an activity which 9/10-year-old children do often.

Table 2. Parents’ strategies regarding children’s computer use.

<i>Strategies*</i>	Never		A few times		Many times		Total	
	N	%	N	%	N	%	N	%
Monitoring what is being done on the computer	56	4,8%	123	10,6%	980	84,6%	1159	100,0%
Limiting computer/Internet time	90	8,1%	277	24,8%	749	67,1%	1116	100,0%
Not allowing conversations with strangers on the Internet.	311	28,8%	62	5,7%	708	65,5%	1081	100,0%
Not allowing access to certain sites.	213	19,5%	191	17,5%	690	63,1%	1094	100,0%
Not allowing access to certain programmes or games.	187	17,2%	304	27,9%	597	54,9%	1088	100,0%
Not allowing the downloading of games/Internet programmes	255	23,7%	254	23,6%	565	52,6%	1074	100,0%

* Other (n = 6)

Taking into account the children’s opinions expressed in the 1517 questionnaires collected, it is possible to determine that 82% of them state they do not have any help at home when they use the “Magalhães”. The 28 % who say they do mention mostly their parents as the ones who provide assistance and then siblings. When asked about rules regarding the use of the “Magalhães”, 68% stated there were none. Limits on the amount of time allowed on the computer, interdiction of access to certain sites and of surfing the Internet are the rules that are most mentioned by the children who responded affirmatively to the question.

As far as the Internet itself is concerned, of the approximately 90% who stated they had Internet access at home, a significant percentage (83%) reported there were rules regarding its use. As can be seen, the

percentage of children who state there are rules on Internet use is considerably different from the percentage that state there are rules on the use the “Magalhães”. Although some of the rules mentioned by the children for using the computer are precisely connected with restrictions to Internet surfing, it is important to bear in mind that the computer does not always have Internet access.

Table 3 shows the rules the children indicated. Concerns about contacting strangers (81,1%) and about revealing personal information are two of the most mentioned rules Interestingly, in this question, time limits are reported by only approximately 50% of the children, which is not as significant as the figure for the use of the “Magalhães”.

Table 3. Rules on Internet use reported by children.

<i>Rules on Internet Use (reported by children)</i>	No		Yes		Total	
	N	%	N	%	N	%
I can only go online after I have done my homework	326	29,7	773	70,3%	1099	100,0%
I have a time limit to be on the Internet.	557	50,7%	542	49,3%	1099	100,0%
There are sites I cannot visit.	340	30,9%	759	69,1%	1099	100,0%
I cannot talk to people I do not know.	208	18,9%	891	81,1%	1099	100,0%
I cannot post photographs/videos of me, my family or my friends.	482	43,9%	617	56,1%	1099	100,0%
I cannot download illegally (pirated copies of music or films)	445	40,5%	654	59,5%	1099	100,0%
I cannot give out personal information about me or my family	328	29,8%	771	70,2%	1099	100,0%
Other	1045	95,1%	54	4,9%	1099	100,0%

The children who chose “other reason” reported essentially restrictions on the use of *Facebook* and not being allowed to play inappropriate or dangerous games. These answers voluntarily provided by the children reveal the concerns parents have about the use of the Internet, the protection they want to provide their children with, and the awareness children have of what they can or cannot do and of what their parents let them / do not let or do not like them to do.

In view of these results, a question arises which the quantitative method did not allow one to explore: are we merely discussing restrictive mediation strategies or are we dealing with active mediation situations? As a categorical and linear response cannot be provided, it is assumed that active mediation can also involve restriction if this involves dialogue, explanation, discussion and negotiation.

5. Conclusions

Although “e.escolinha” was presented as a programme for schools, there were some hesitations about considering it a family policy since it was meant to promote computer access not only to children but to their families as well. Despite being clearly focussed on the school context, the initiative did involve the

children's parents, not only because they would have to make the decision whether or not to purchase the computer, but they would also have an important role as technology mediators in the family context. Furthermore, since the children are still small and often form an opinion based on their own parents' opinions, behaviour and attitudes, the families' opinions would have a significant impact on the children's opinions and perceptions of this governmental measure, particularly of the "Magalhães" computer and its benefits. As Green, Ortiz & Lim point out in an article about Korean parents' perceptions on the importance of computer usage, "if parents hold favorable perceptions of a learning tool, such as computers, then in all likelihood the child will incorporate similar attitudes" (Green, Ortiz & Lim, 2009: 55). In fact, what parents think about the media, how they value them, how they understand household media rules and mediation, tell us about the way that they envision the role of media in children's lives. These perspectives have implications for children's media literacy because they tell us about the opportunities children have to develop skills, knowledge and understanding to manage media technologies and contents towards a critical and a savvy use of both traditional and new media.

This study shows the importance of parents' expectations regarding children's use of media and digital technologies. Furthermore, it demonstrates that parents' level of education and their occupation are factors which have a bearing on the disparities in access to ICTs and on the differences in their use, despite the fact that in the group studied this impact is not very strong.

The computer and the Internet are undoubtedly the means parents most value both to be used by children and to possibly be worked on and discussed at school. This is connected with the fact that parents associate the use of the computer with academic performance and future success at work. These expectations are, in turn, generated by what is valued both in and by society, as it is considered that "a knowledge economy requires an information-skilled workforce in order to succeed" (Selwyn, 2013: 5). Thus, in parents' point of view, using a computer is an important factor in both meeting and keeping pace with the demands of modern life. From this point of view, the conclusions of this study are in line with the conclusions of other authors such as Buckingham (2002) and Mumtaz (2001) regarding parents' reasons to invest in a computer. Nowadays, parents in general see it as a key element for academic achievement and a strong social imperative of the information society.

Although some national and European studies have shown "a certain dissociation between the perception parents have of their children's use of the new media and the effective uses the latter actually report" (Cardoso, 2012: 72), in this study there were no significant discrepancies between parents' and children's discourses. The perceptions of both groups on access, uses and mediation strategies are very similar. This result may be connected with the children's ages. When they are 8 -10 years old, not only is keeping abreast of what is going on in their lives and exercising some control over it something which most Portuguese families find easier to accomplish, but children themselves are still genuine, i.e., do not resort to personal or social filters, in the way they report their relationship with the media, namely, within the home environment. Another point that may help understand this result is the fact that mediation activities with younger children occur more frequently as documented by studies on parental mediation of television and Internet uses.

The results also suggest that children make more use of the computer at home than at school. Gaming appears to dominate the computer use of many children, contrary to what happens with school-related activities that are less frequent. With regard to the uses of and the practices with the computer, one can conclude that the "e.escolinha" programme failed its objective of changing the teaching and learning process. Although it did have had some impact as far as access to technology is concerned, it did not reflect an 'added value' in terms of the uses and the competences to use the computer and the Internet.

The parental mediation of children's use of media and ICTs deserves also a note. Although this study focuses mainly on restrictive mediation strategies, the data analysis based on the children's and parents' answers, showed parents' concern for supervising children's activities on these means, which cannot be dissociated from the age of the children in question. That being so, it is important that this concern may lead to active parental mediation as a way to help children not only make the most of the media and the technologies and the opportunities they provide but also learn how to deal with the risks they may pose. As other studies have shown, this type of mediation progressively empowers children to be more aware and more critical in their use of the media, in this particular case, of the computer and the Internet.

This study was conducted within a broader research project which contributed to scrutinize and assess the implementation and development of the governmental programme "e.escolinha". Focused whether on the programme's policies or on the laptop's uses, the project provided a greater insight on the viewpoints of its decision makers and on the perspectives of its main target – children, teachers and parents. Taking notice of all these voices and confronting them has contributed to enrich the existing literature on this topic. Pupils were convoked to think on ICT and to give their opinion on a governmental measure, which is an innovative aspect of the research on education and technology.

The project has also contributed to discuss the democratization access to ICT and that it does not mean by itself that digital inclusion is guaranteed. To make a best use of technology in their everyday lives, whether at school, at home or in their leisure time, it's important to develop children's digital literacy, namely their critical understanding, their creative abilities and their producing skills. In terms of media literacy, the study has shown that there are many dimensions that could be improved. Dimensions such as critical understanding, critical evaluation, creating content and communication are marginal to the use that children make of technologies. Our understanding is that schools should help pupils to develop these skills, considering that is a lot more to do beyond the technical aspects and the use of the computer to write a text. Besides this, other important capacity that children should be encouraged to develop is a critical thinking about their engagement with ICT and about ICT itself.

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