New media integration in schools has become one of the most crucial topics in educational policies in recent years. There are various national and international projects and interventions carried out by public authorities, private sector, or NGOs. However, these projects are often sporadic in their nature and fail to be implemented with a long-term outlook in a holistic manner. Based on the examples of the FATIH and eTwinning projects from Turkey, this paper will argue for a holistic approach in educational policies on media integration in schools by taking these two cases. One of the main claims of the analysis is that the existing policies are often based on short-term remedies. Policymakers tend to allocate a significant amount of resources on the enhancement of technology infrastructure in schools; however, not enough attention is paid to teacher training, development of content, and pedagogical approaches for integrating media technologies in schools. In light of these issues there is an evident need for more cooperation between research institutes and the Ministry of National Education (MoNE) in terms of implementing systematic policies based on empirical research.

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MEDIA INTEGRATION POLICIES IN EDUCATION
PLAIDOYER FOR A HOLISTIC APPROACH
IN TURKEY

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INFORMATION AND COMMUNICATION TECHNOLOGIES FOR IMPROVING EDUCATION

One of the biggest transformations in the education systems of contemporary societies is expected to take place through the integration of information and communication technologies (ICT). Therefore, the topic has been widely discussed in policy contexts as well as in academic literature. The rapid developments in digital media further intensify the debate. Used in an efficient way, technologies have the potentials for enriching education experiences by making content available and easily accessible; providing new forms of disseminating, acquiring, and managing knowledge; allowing new ways of producing teaching resources; supporting subject-centered learning processes; and equipping students with creative tools for collaboration and exchange.

Schools are deemed to be the place to learn digital skills that are essential in the 21st century. However, integration of media technologies in schools is not a new topic and its discussion goes back to the beginning of 20th century. Throughout the history, the topic was polarized between those who have a techno-centric approach and others with a rejectionist perspective. The first argues that the mere presence of technologies could transform teaching and learning experiences in schools and thus, this transformation is a technology-driven one. The latter does not believe that technologies have either a positive or negative impact on the education of children. Today, there are more and more positions that fall in between the two poles. Technologies are also perceived by many to change the ways we communicate in educational contexts; however, they alone cannot be enough for transforming schools and education. Pedagogical methods on how to use these technologies efficiently in the classroom is increasingly emphasized. In spite of this, there are still not enough resources on the topic for guiding educational projects and teachers in the classroom.

In order to integrate ICT in the classroom and equip teachers and students with digital skills, policymakers around the world develop different projects. First, we find projects that focus on the issue of infrastructure and aim to mend the digital divide, which in simplest terms refers to inequalities in terms of access and use of digital media technologies. One of the most famous infrastructure projects is the One Laptop per Child Project, which is financed by various firms and universities such as IBM and MIT. This project aims to equip children in developing countries with laptops and could improve children’s access to personal computers. However, the project’s influence on learning outcomes remains unclear due to the lack of impact research and longitudinal analyses. There are similar undertakings in different countries such as Peru, UK, Ireland, or Uruguay that focus on providing equipment such as laptops, smart boards, etc. and studies that reveal the lessons learned from these initiatives.

The second type of education and technology projects focuses on the issue of media literacy. Courses aiming at teaching digital skills, or generally referred to as media literacy courses, are developed in schools. There are also projects such as the European ITEC project that aim at project-based media education. A third kind of project regarding media technologies and education are those that aim to increase international connections between schools and collaborative projects. Here, we find various initiatives from different institutions such as the eTwinning network, the Global Nomads, or the Skype in the Classroom project. Last, we can count various small and large-scale projects that aim to provide educational content for digital technologies. There are also integrative projects such as the FATIH Project, an acronym for Movement to Increase Opportunities and Improve Technology.
Looking at different projects and reports, we can conclude that there are similar problems with media integration policies in the field of education around the world. Many one-shot projects, such as media integration initiatives, are sporadic in nature. Furthermore, although most projects focus on infrastructure, there is a lack of pedagogical approach that would otherwise help teachers employ these media technologies in classrooms.\textsuperscript{13} Last but not least, media integration policies are often based on technocratic dreams and anecdotal discourses instead of empirical evidence.\textsuperscript{14}

TOWARDS THE IDEAL OF AN INFORMATION SOCIETY: WHERE DOES TURKEY STAND?

ICT In Turkey

Access to ICT is a significant challenge for Turkey’s aspirations in becoming an Information Society. Figure 1 below demonstrates that we are still lagging behind access to the Internet. Although Turkey has come a long way in eight years (Households with access to the Internet have increased exponentially from 10% to almost 50%), the figures are still behind the average of European countries (79%).\textsuperscript{15} As shown in Table 1, it is also noteworthy that there are significant regional differences when it comes to ICT. Mobile technology, however, is quite different. 91% of Turkey’s population has mobile phone subscriptions,\textsuperscript{16} which is relatively high compared to most European countries.\textsuperscript{17} This could be linked to the hypothesis that even though access to ICT is low in households, mobile technologies replace this shortage in developing countries.\textsuperscript{18}

![Figure 1 Use of Information and Communication Technology (ICT) in Households and Individuals for 16-74 age group (TurkStat, 2013)](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Desktop Computer</th>
<th>Portable Computer (Laptop, Tablet PC)</th>
<th>Portable Computer (Laptop, Notebook)</th>
<th>Tablet Computer</th>
<th>Mobile Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey 2005</td>
<td>11.6</td>
<td>1.1</td>
<td>72.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>33.8</td>
<td>16.8</td>
<td>90.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>30.5</td>
<td>31.4</td>
<td>6.2</td>
<td>93.7</td>
<td></td>
</tr>
<tr>
<td>Urban 2005</td>
<td>16.1</td>
<td>1.6</td>
<td>79.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>40.6</td>
<td>20.4</td>
<td>92.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>36.2</td>
<td>37.9</td>
<td>8.1</td>
<td>95.6</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>3.7</td>
<td>0.3</td>
<td>59.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural 2010</td>
<td>16.6</td>
<td>7.6</td>
<td>85.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>17.0</td>
<td>15.6</td>
<td>1.5</td>
<td>89.1</td>
<td></td>
</tr>
</tbody>
</table>

Access, however, cannot be the sole indicator of ICT usage. Another variable that needs to be taken into account is the reason for which ICT is used. A recent study from TurkStat shows that the individuals who have accessed the Internet in the last 3 months have used the Internet for: (i) seeking health-related information, (ii) finding information about goods or services, (iii) sending/receiving e-mails, (iv) participating in social networks, (v) reading or downloading news. In addition, only 10% on average (urban 9%, rural 5.5%) use the Internet for educational purposes.

![Figure 2 Internet activities of individuals who have accessed the Internet in the last 3 months, by private purposes (%) in Turkey (TurkStat, 2013)](image)
HOW ABOUT THE CLASSROOMS?

Turkey has a heavily centralized education system; almost 97% of the schools are public. As the ICT debate, basic indicators clearly show public authorities invest a great deal in access to education. In the 2013-2014 academic year, the net school ratio for primary school level was 98.86%; for the junior high school level 93.09%, and for secondary education level 70.06%. However, given the number of crowded classrooms, teacher shortage, lack of laboratories and ICT infrastructure, schools with inadequate infrastructure still remain a challenge for Turkey.

The latest data from 2010 show that inequalities in terms of access to ICT hardware is still an important issue in Turkey: the number of students per computer was 91 in primary school (1st-8th grades) in 2010 and 77 in secondary education (8th-12th grades) in the same year. On top of that, policymakers also need to take regional differences into account – in some cases the number of students per classroom can vary from 20 to 100.

MoNE & ICT

One could also argue that the overhead projector, a commonly used tool for teaching in the late 90s and early 2000s, was the smartest technological investment made by the Ministry of National Education (MoNE) in Turkey. It was so popular among teachers in subjects ranging from literature to chemistry that the projector itself became an indicator of success in teaching. Then came televisions, video cassettes, computer labs, and of course, the big “world wide web.” Each and every item was introduced as a breakthrough in education that would further lead future generations to have access to “better” education. Despite these initiatives, the Information Society Strategy Situation Analysis Report claims that the computer and technology labs that were developed in schools in the 2000s were unsuccessful due to limited resource allocations for teacher training.

As we have discussed earlier, access has been the main reference point for policymakers, which is also visible in the policy documents of public stakeholders. For example, today, ICT policies are carried out in a more comprehensive manner through an Information Society Strategy Renewal Project by the Ministry of Development. The project states its vision as:

“ICT, from elementary schools to universities, have developed new tools within the formal education system and these tools have been widely used in developed education systems. These new tools by making information more accessible, contributes to raising generations who research, think and question; as well as present equal opportunities for disadvantaged groups such as the disabled and individual living in rural parts of Turkey.”

The Ministry of National Education also places emphasis on distributing ICT hardware and software, establishing secure and fast internet connection at every school, and access to ICT at schools in its strategic plan. One of the significant projects carried out by the MoNE over the last two decades was the Basic Education Project that was conducted in two phases where over 20,000 schools were equipped with computer hardware and software. The project also incorporated distributing projectors, notebooks, and introducing IT classes. However, the project did not suffice in terms of the initial goals and failed to (i) achieve an adequate level of training for teachers and principals, (ii) to implement the project sufficiently in provinces, and (iii) to create evaluation and monitoring mechanisms.

Nonetheless, Turkey has not only invested in infrastructure, but also in media literacy skills of children regarding ICT, as it is one of the few European countries in which ICT is integrated as courses in the curriculum in formal education. It
was introduced to the curriculum as an elective course in 1998, and it is still offered as an elective course for 5th and 8th graders with the title “Information Technologies and Software.” In line with this initiative, the MoNE has also introduced media literacy courses to 6th, 7th, and 8th graders in 2006-2007.

It is, however, in the last few years that the MoNE has rolled up its sleeves for a bold move through the FATIH Project, where infrastructure goes hand-in-hand with teacher training and creating e-content.

**CONQUERING THE CLASSROOM: THE FATIH PROJECT**

Initiated in November 2010, the FATIH Project aims to “enable equal opportunities in education and improving technology” in Turkish schools by effective ICT usage. The acronym FATIH is also a reference to Fatih Sultan Mehmet who conquered Istanbul.

It mainly aims to distribute ICT hardware to 40,000 schools, set up Interactive Boards in 620,000 classrooms, and hand out tablets for 16 million students and teachers across Turkey. The project began in pilot schools initially at the secondary level – excluding tablets in the 2010-2011 academic year and then incorporating tablets in the spring semester of 2011-2012 academic year – and is planned to expand to other levels in the course of the coming years. By the end of the project, it is estimated that almost 680,000 teachers will undergo a special training course.

The project is composed of five main pillars described on the project website as: (i) Providing Equipment and Software Substructure, (ii) Providing Educational e-content and Management of e-content, (iii) Effective Usage of the ICT in Teaching Programs,(iv) In-service Training of the Teachers, (v) Conscious, Reliable, Manageable and Measurable ICT Usage.

FATIH, despite being criticized as a mere technology investment project, goes beyond allocating hardware, and in theory it has a holistic look on integrating ICT in education compared to previous projects of the MoNE. However, it is quite debatable whether this integrative perspective in fact reflects the practice. The project started out with pilot testing of the high-speed internet connection in the 2010-2011 academic year. In the 2012-2013 academic year, 13,000 tablet computers were distributed to selected 9th graders and in 52 pilot schools 17 provinces were equipped with 500 interactive boards. During the second pilot phase in February 2013, 36,000 students and 13,000 teachers in 215 schools received tablets.

The MoNE’s 2012 Annual Report shows that 70,379 (almost 10% of the whole teacher population) had participated in training programs on “Using Technology in Education” in 2012, and 72,592 teachers participated in an “Using Interactive Boards” seminar. Apart from teacher trainings, the MoNE has also incorporated the administrators into this project: 3,657 administrators participated in an introductory seminar of the project and 7,500 administrators in “Technology and Leadership” courses across the country.

Another positive aspect of the project is the fact that in the initial phase of the project, the MoNE used tremendous amount of human resource (one of the biggest branch in the Ministry works on content development) for the development of appropriate e-content for the interactive boards and the tablet computers that are distributed in the project. For this purpose, an online resource platform called Education and Informatics Network, a.k.a. EBA, was introduced by the Ministry for the use of all students and teachers. The Board of Education has also created a brief guideline for stakeholders to develop e-content, e.g. e-book or the “z-book,” an enhanced book adopted for digital environments that paves way for interactive teaching methods.
This nation-wide project comes with a cost. There have been speculative numbers in the press as well as contradictory statements from the Ministry. One of the figures that we can refer to was mentioned in a report published by the Ministry of Development on the needs and benefits of ICT; the government - it is not specified through which budget item this will be spent - will allocate 750 million liras yearly for hardware. Apart from this specific referral, it is not possible to deduce the allocations for e-content and teacher training.26

As in any ICT project, the main challenge for the government lies in whether or not the project will have an impact on the learning outcomes of the students. As Sonia Livingstone indicates, “Failure to recognize that although getting technology into classroom has been resource intensive, this pales by comparison with the far greater demands of ensuring its effective use.”27 Within the context of FATIH, it is quite difficult to estimate this impact without empirical data. However, we can point out to some risks that may hinder the success of the project. The latest study of Education Reform Initiative also points out that there is evidence on the effect of one-to-one technology programs; however, given the uniqueness of each case, it is also of importance to review these cases by taking into account their specific context.28

As a closing remark for this section we can enumerate the two main risks of the project: (i) using a significant part of the budget for infrastructure and not paying enough attention to teacher training and creating e-content, not following the integrative and holistic perspective that goes hand-in-hand with the e-transformation of Turkey. FATIH can lose its uniqueness in design if necessary evaluation and monitoring mechanisms are not run sufficiently. Thus, without a systemic approach, the project runs the risk of becoming a short-term measure to improve the ICT infrastructure at schools. Moreover, debates on fraud during procurement processes, dubious budget allocations, and speculations in the media have also had a negative impact on the project process. Thus, it becomes important to ensure that a rigorous coordination of different stakeholders e.g. ministries, provincial directorates, and schools is implemented.

THE “eTwinning” PROJECT

eTwinning is an online-based network for schools around Europe. Developed by the European Union (EU) in 2005, the project uses media technologies for collaborative web-based projects between different schools. A web platform called Twinspace, which combines various online tools such as chat, blogging, or social networking, serves as the main software for the network. The teachers who participate voluntarily in this undertaking develop unique joint projects with their colleagues from various European countries. There is a European coordination as well as a national support unit in every country. These support units organize workshops, offer technical support, and deliver quality labels to good projects.

Turkey became a member of the eTwinning network in 2009. With over 18,000 schools, the country already has the highest amount of registered schools in Europe. There are over 1,000 ongoing projects and over 5,000 closed projects. These high numbers show interest among the teachers to conduct joint and web-based projects. The projects are coordinated by the national support team, which has 6-7 young and engaged employees within the MoNE. This support team organizes annual meetings, conducts seminars with people from other countries, and offers continuous technical support. eTwinning is coordinated by the same department as the FATIH Project; the strategic development department in the MoNE. However, there are no strong links between different projects that are carried out by this department. The eTwinning team has been changed quite often through the changing of ministers within the last
years, making the implementation of long-term incentives for eTwinning difficult.

Our interviews show that the teachers who are involved in eTwinning projects are mostly young and engaged teachers. They are motivated by the prospects of mastering new and creative teaching methods, as well as by the opportunity to interact with their counterparts from other countries. One of the biggest problems they face is the lack of incentives or rewards for developing such projects. Implementing an eTwinning project often means extra preparation time for the teachers.

A BRIEF COMPARATIVE LOOK ON FATIH AND ETWINNING

The FATIH Project and the eTwinning project are different in terms of their goals and the ways they are being implemented. FATIH is designed by the policymakers and is carried out in a top-down manner. The eTwinning network is an international project with a national support team within the MoNE who act as coordinators of the program. The project is based on an online platform, which allows teachers to develop international and collaborative projects. The eTwinning projects are shaped by teachers on a voluntary basis. For both FATIH and eTwinning, there are only limited empirical research data. The data that is collected by the Ministry for evaluation of FATIH is not shared publicly until now.

Funding is also different for the two cases. The eTwinning project is financed by the EU, and the MoNE has a rather limited budget for events, the national coordinators, or the program and promotion material. As already discussed, the FATIH Project is one of the most expensive projects of the MoNE, with a budget that consists of funds from different ministries.

Both projects are coordinated by the MoNE; however, there are still no clear links between the two. The projects could benefit from each other in various aspects with a more integrative approach. First of all, the FATIH Project could provide the necessary infrastructure for the use of eTwinning network. In return, eTwinning can help to internationalize the FATIH Project by connecting teachers and students with people around the world and allowing them to build joint, web-based projects. Moreover, eTwinning can offer an entertaining way of learning digital technologies for Turkish students, which is also one of the indirect outcomes of the FATIH Project.

CHALLENGES FOR AN INTEGRATIVE APPROACH TO MEDIA INTEGRATION IN EDUCATION

On the basis of international literature and the case of Turkey, we can conclude that there are a number of challenges to media integration policies in the field of education:

- The paradox of long-term goals, short-term remedies: Politicians face a dilemma as they are introducing policy measures for the integration of media technologies in schools. On the one hand, they want to achieve long-term goals such as increasing media literacy and decreasing inequalities in terms of access to ICT. On the other hand, they would like to see short-term impacts of these policies, and this aim forces them to make investments which are visible and to be legitimized in the eyes of taxpayers. This can be seen in the example of the FATIH Project, which has the short-term and visible outcomes through hardware distribution.

- Lack of transparent data/Lack of data and research: As it is the case for policies in different countries, as well as in Turkey, there is a lack of research on the impacts of using media technologies in the field of education. Policies are developed on the basis of technocratic assumptions and not on academic research. Furthermore, the data that is collected by the MoNE is not publicly available, making the external evaluation of projects difficult.
• **Putting teachers first:** Another problem that we face when looking at the policies of media integration in Turkish schools is the top-down implementation of the projects. Although the teachers play a key role for employing ICT in the classroom, they are not consulted during the development of policy measures and are expected to accept the measures taken by the Ministry. Paradoxically, other projects like the eTwinning projects that are developed voluntarily are not supported enough by the Ministry.

• **Regional differences, inequality debate:** The differences of infrastructure in different schools in Turkey still constitute a big challenge as discussed in previous sections. Furthermore, there are big differences in terms of internet usage in Turkish households. Hence, inequalities and regional differences still constitute one of the biggest challenges about media integration in schools in Turkey.

• **The pitfall of one-shot projects:** The rapid and on-going developments in new technologies go hand-in-hand with one-shot and small-scale educational projects that are based on certain web tools that are introduced to have short-term effects in schools. These tools are often forgotten and replaced by others in a short period. Without the consideration of the overall scheme of the education system, these one-shot projects will not suffice to provide the expected transformation of the educational methods in order to integrate media technologies.

**CONCLUSIONS AND RECOMMENDATIONS**

• Within the last 12 years, there were five different ministers for education in Turkey. A change in administration also entails a shift in certain policies to a degree that the whole education system can be restructured; organizational schemes might be reshuffled or a new standardized test system might be introduced. Within this continuously changing environment, it is very difficult to develop and implement policies for the structural transformation of schools and integration of ICT in the education system. The governments should develop more sustainable structures within the Ministry and look for allocating the right quality of human resources for longer terms.

• There is a need for a systematic approach for developing policies of media integration that is based on research. Furthermore, the Ministry can make already collected data available for external evaluation. More cooperation between the Ministry and other research institutions could also help to improve the Ministry’s policies. In general, we need more in-depth and longitudinal research projects that evaluate the impacts of media integration in schools.

• A more multi-layered, multi-disciplinary, and multi-methodological approach is necessary at the level of policymaking, and this can only be managed by a holistic perspective to media integration in schools. Different policy measures should be connected with each other in order to profit from mutual benefits as discussed in relation to the FATIH and eTwinning projects.

• Last but not least, more emphasis on pedagogical methods for using ICT in the classroom is necessary not only for the technologies themselves, but for transforming and enhancing the learning experience of students.
NOTES

1 | This policy brief is based on the paper entitled “A Holistic Approach to Media Integration in Schools in Turkey” presented at INTED 2014 in Valencia by the authors.


5 | See for more information: http://one.laptop.org/.


9 | See for more information: http://itec.eun.org.


11 | See for more information: http://gng.org/.

12 | See for more information: https://education.skype.com/.


