

ЛИНГВОДИДАКТИКА И НОВАЦИИ. ПСИХОЛОГИЧЕСКИЕ ОСНОВЫ ИЗУЧЕНИЯ ЯЗЫКОВ И
КУЛЬТУР | LINGUODIDACTICS AND INNOVATIONS. PSYCHOLOGICAL BASIS OF STUDYING
LANGUAGES AND CULTURES

Опыт цифрового образования и электронного обучения во время пандемии в Испании и в Италии

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Из-за угрозы заражения новым коронавирусом большинство школ, колледжей и университетов в Италии и Испании последовали рекомендации министерств науки и здравоохранения и решили перейти в режим дистанционного обучения. Само собой разумеется, что этот факт повлиял на то, как был организован учебный процесс, изменил формат общения и реализации учебных планов и программ. Актуальность данного исследования обусловлена растущим интересом к проблемам дистанционного обучения в период пандемии и скудностью исследований по этой теме. Целью данной статьи является выявление и описание компьютерных технологий, применяемых в дистанционном обучении в учебных заведениях Испании и Италии в период пандемии. В рамках исследования мы проанализировали данные, предоставленные министерствами образования и науки Испании и Италии, а также более 50 статей, опубликованных ведущими испанскими и итальянскими печатными СМИ, такими как *Corriere*, *Repubblica*, *Ilfattoquotidiano*, *Varesenews*, *Agi*, *OrizzonteScuolat*, *Udinetoday*, *El Pais*, *Expansion*, *ABC*, *El Tiempo* и т.д. Теоретическую основу исследования составили статьи экспертов по дистанционному обучению: И.К. Корнеев, Г. Ксандопуло, В.А. Машурцев [2009], В.Л. Усков [2008], Шарплс М., Адамс А., Алози Н., Фергюсон Р., Фицджеральд Э., Гавед М., МакЭндрю П., Средство Б., Ремольд [2015], Грос Б. [2016], Бейтс А. [2015].

Ключевые слова: учебные ресурсы, обучающие видео, инструменты обучения, цифровые инструменты, образовательные технологии, онлайн-обучение, дистанционное обучение, дистанционное обучение, онлайн-педагогика, онлайн / удаленная настройка.

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Spain and Italy Experience of Digital Education and E-Learning during the Pandemic

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Due to the threat of the novel coronavirus infection, most schools, colleges and universities in Italy and Spain followed the recommendation of the Ministries of Science and Healthcare and opted to shift to distance learning mode. Needless to say, that fact had an impact on how the educational process was organized changed the format of communication and implementation of curricula and syllabi. The relevance of this study is conditioned by a growing interest to the problems of distance learning during the pandemic and the scarce research into this subject. The purpose of this paper is to identify and describe computer technologies applied in distance learning in educational institutions of Spain and Italy over the pandemic period. As part of research, we analyzed the data provided by the Spanish and Italian Ministries of Education and Science, as well as over 50 articles published by leading Spanish and Italian printed media, such as Corriere, Repubblica, Ilfattoquotidiano, Varesenews, Agi, OrizzonteScuolat, Udinetoday, El Pais, Expansion, ABC, El Tiempo, etc. The theoretical underpinning for the study is comprised of papers by distance learning experts: I.K. Korneyev, G.N. Ksandopulo, V.A. Mashurtsev [2009], V.L. Uskov [2008], Sharples M., Adams A., Alozie N., Ferguson R., FitzGerald E., Gaved M., McAndrew P., Means B., Remold [2015], Gros B. [2016], Bates A. [2015].

Keywords: teaching resources, educational videos, learning tool, digital tools, educational technologies, online teaching, distance learning, remote teaching, online pedagogy, online/remote setting.

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Problem Background

In our day and age, distance learning is one of the upcoming trends in education. Let us turn to the definition of the notion. “Distance education or distance learning is the education of students who may not always be physically present at a school.[1][2] Traditionally, this usually involved correspondence courses where in the student corresponded with the school via post. Today, it involves online education. A distance learning program can be completely distance learning, or a combination of distance learning and traditional classroom instruction (called hybrid[3] or blended).[4] Massive open online courses (MOOCs), offering large-scale interactive participation and open access through the World Wide Web or other network technologies, are recent educational modes in distance education.[1] A number of other terms (distributed learning, e-learning, m-learning, online learning, virtual classroom etc.) are used roughly synonymously with distance education”(en.Wikipedia.org).

The exact date when distance learning format emerged is still debatable. Some experts claim that distance learning was “invented, or discovered” by Caleb Phillips. In 1728, he published a newspaper advertisement inviting to enroll for a course of shorthand writing and accounting. The course involved the students receiving lesson materials by regular mail once a week. According to other researchers, distance learning came into being thanks to Isaac Pitman in 1840. He educated students in the UK also via post. Those were private attempts to incorporate a new form of teaching/learning. The University of Illinois is considered the trailblazer of distance learning among universities. In 1874, this university offered its students a correspondence learning program. In 1892, Chicago University opened the first department of distance learning and soon enough other tertiary institutions followed suit.

Nowadays distance learning has received a new strong impetus due to globalization trends which make it necessary to connect people around the world. We have come to a point where “universities are increasingly concerned with the task of preparing graduates to be active and responsible global citizens in a world which is intrinsically digitalized, globalized and multicultural in nature” [O’Dowd p. 8]. Therefore educationalists and researchers invest a lot of efforts in studying the significant features, tendencies, effects and aftereffects of distance education modes, learning materials and teaching methods.

Today, the education systems worldwide are making efforts to organize the teaching/learning process amidst the pandemic. The emergency resulted in the shutdown of educational institutions. But the education process goes on nonetheless. In most countries the students were transitioned to the distance learning mode. The Web and social media networks became a resource of giving and getting knowledge. All the practicals, including lab ones, were transferred to the online space. Some educational institutions organize training based on platforms as in videoconferencing and online meeting services. Others use YouTube, WhatsApp, Facebook, and other applications. The emergency transition to the distance mode of teaching/learning posed obvious problems connected with inadequate technological infrastructure, and poor to zero command of distance technologies by teachers and instructors. The distance format of classes conducted during the pandemic is drastically different from the thoroughly planned online education using remote teaching & learning technologies. In such conditions, all the possible resources of educational institutions, external content suppliers and services were pooled to implement the educational process. The essential system requirements were its reliability, Internet channels throughput capacity, simplicity of creating and uploading content, as well as availability of services and platforms for teachers and

students.

Part 1. Overview, UNESCO recommendations

Like many other industries, the education sector has been severely impacted by the COVID-19 pandemic. According to the statistics of March 31, 2020 provided by UNESCO, which constantly monitors the impact of the coronavirus on education, 185 countries had closed schools nationwide, affecting over 1.5 billion children and youth. 89,4 % of the world's school and university students were put on lockdown, which made teachers from all affected countries take a new look at remote educational technologies.

The shutdown of educational centers was one of the first measures adopted in Spain and Italy in the face of the COVID-19 pandemic. However, that did not mean that the educational process has come to a halt. According to the latest data, in Spain there are 9, 706,284 students from all educational levels who are confined to their homes trying to continue with the academic calendar. Since 10 March, schools of all autonomous communities have been closed. Enrique Ossorio, Minister of Education and Youth, admitted that 93% of educational centers were operating exclusively online.

On March 4, 2020, Italy's Minister of Education Lucia Azzolina and the Chairman of the Council of Ministers Giuseppe Conte made the decision to temporarily suspend education and shut down all the country's educational institutions due to the situation with the COVID-19 pandemic.

Before taking a closer look at the experience of Spain and Italy, we would like to mention that UNESCO (the United Nations Educational Scientific And Cultural Organization) shared its recommendations to prevent the breakdown of educational process, as well as launched the Global Education Coalition program to facilitate inclusive learning opportunities for children and youth during this period of sudden and unprecedented educational disruption. 10 recommendations for teachers and educational centers were published by UNESCO:

1. Examine the readiness and choose the most relevant tools. Decide on the use high-technology and low-technology solutions based on the reliability of local power supplies, internet connectivity, and digital skills of teachers and students. This rule specifies that those solutions could range from integrated digital learning platforms, video lessons, MOOCs, to broadcasting via radio and TV.

2. Ensure inclusion of the distance learning programs. Implement measures to ensure that students, including those with disabilities or from low-income backgrounds, have access to distance learning programs, if only a limited number of them have access to digital devices. Consider temporarily decentralizing such devices from computer labs to families and support them with internet connectivity.

3. Protect data privacy and data security. Assess data security when uploading data or educational resources to web spaces, as well as when sharing them with other organizations or individuals. Ensure that the use of applications and platforms does not violate students' data privacy.

4. Prioritize solutions to address psychosocial challenges before teaching. Mobilize available tools to connect schools, parents, teachers and students with each other. Create communities to ensure regular human interactions, enable social caring measures, and address possible psychosocial challenges that students may face when they are isolated.

5. Plan the study schedule of the distance learning programs. Organize discussions with

stakeholders to examine the possible duration of school closures and decide whether the distance learning program should focus on teaching new knowledge or enhance students' knowledge of prior lessons. Plan the schedule depending on the situation in the affected zones, level of study, students' needs, and availability of parents. Choose the appropriate learning methodologies based on the status of school closures and home-based quarantines. Avoid learning methodologies that require face-to-face communication.

6. Provide support to teachers and parents on the use of digital tools. Organize brief training or orientation sessions for both teachers and parents if monitoring and facilitation are needed. Help teachers to prepare the basic settings such as solutions in terms of the use of internet data if they are required to provide live streaming of lessons.

7. Blend appropriate approaches and limit the number of applications and platforms. Blend tools or media that are available for most students, both for synchronous communication and lessons, and for asynchronous learning. Avoid overloading students and parents by asking them to download and test too many applications or platforms.

8. Develop distance learning rules and monitor students' learning process. Define the rules with parents and students on distance learning. Design formative questions, tests, or exercises to monitor closely the students' learning process. Try to use tools to support submission of students' feedback and avoid overloading parents by requesting them to scan and send students' feedback.

9. Define the duration of distance learning units based on students' self-regulation skills.

Keep a coherent timing according to the level of the students' self-regulation and metacognitive abilities, especially for livestreaming classes. Preferably, the unit for primary school students should be no longer than 20 minutes and no longer than 40 minutes for secondary school students.

10. Create communities and enhance connection. Create communities of teachers, parents and school managers to address sense of loneliness or helplessness, facilitate sharing of experience and discussion on coping strategies when facing learning difficulties.

Also, UNESCO has launched The Global Education Coalition, which aims to "offer children and young people inclusive learning opportunities during this period of sudden and unprecedented interruption in education," says the international organization on its website. It is an alliance of organizations in which anyone interested in collaborating with world education can participate. "We have never witnessed an educational disorder of such magnitude," said Audrey Azoulay, General Director of UNESCO, in his statement. "This Coalition is a call for coordinated and innovative action to discover solutions that help students and teachers not only now, but also throughout the recovery process." At the moment, some of the entities participating in the initiative are companies such as Microsoft and Facebook; international organizations such as the WHO (World Health Organization), UNHCR (United Nations High Commissioner For Refugees) and UNICEF (United Nations Children's Fund), and educational organizations such as the Khan Academy and Google for Education, among others. In Spain, the ProFuturo program of La Caixa and the Fundación Telefónica have also joined.

Our research was to study how Italy and Spain have followed the above-mentioned recommendations. In the present paper we have considered the entire range of educational technologies used in Spain and Italy.

Part 2. Spain and Italy experience with using Big Tech digital tools

Big IT companies have started doing their fair share to help education. They have opened access

to their educational tools to everyone. The goal is that no one is left behind. The availability of adequate tools is important to implement good educational design. Since the beginning of the pandemic, many technological and educational companies have made their resources available to the education system.

A case in point is Google, which offered free services, such as office suite Drive, which is rather useful for completing the tasks during a lesson. But above all, Google has an impressive package of tools named **G Suite for Education** (https://edu.google.com/intl/es-419_ALL/products/gsuite-for-education/) for educators and students helping them to innovate and learn. It is being widely used in Spain. The internet giant has another platform - **Classroom** (<https://classroom.google.com/h>), which allows student and teachers to communicate and organize themselves in daily tasks. One more indispensable package of tools aimed at helping teachers to adapt education to remote setting was **Teach from home** (<https://teachfromhome.google/intl/en/>) containing tips to address educational needs in these difficult times.

The technology giant Microsoft has made its **Teams** tool available to the educational community. This collaborative digital work environment enables conversations, meetings, files and applications in one place. It is part of the Office 365 suite, allowing you to work in the cloud with some of the most used Microsoft applications, such as Word or Excel. Through the **Educamos** platform which is linked to Microsoft services, teachers send homework to their students. The use of **Skype** videoconference application or the use of a digital notebook via **OneNote** app has become the survival kit for thousands of students.

Even **TikTok**, the global short videos phenomenon, has activated a "livestream" campaign with the creators of the platform to be able to strengthen their relationship with the community by sharing their talents and skills with them during these days. For example, users are able to connect to speak English with the well-known influencer Robbie V through his account @LetsSpeakEnglish.

Similarly, **YouTube** has aggregated educational videos (<https://learnathome.withyoutube.com/>) designed for all ages from a remote teaching service that works even with a basic mobile phone. Without any previous experience in teaching online, teachers on their own come up with ingenious ways to continue providing knowledge. And in that sense, other services like **Firefly** (by Amazon) also claim their place among other ed tech suppliers. The tool has resources for teachers, students, and parents to plan lessons, share educational content, and manage a group of students.

Part 3. Spain: the input of multiple actors of educational system (governmental organizations, IT companies, educational centers, publishing houses)

Starting with the experience of Spain, we have studied the input of multiple actors of educational system – governmental organizations, IT companies, educational centers, and publishing houses.

The Orange telecommunication enterprise made available such free educational platforms aimed at teachers, children and professionals as: 1) **Educainternet** (<https://educainternet.es>), which has educational resources for parents and teachers promoting the safe and responsible use of technologies by the youngest users; 2) **FamilyON** (<https://www.familyon.es>), which is a repository of multimedia activities for the family with the aim of enhancing creativity, critical thinking, rational intelligence or innovation; 3) **Sé + Digital** (<http://sedigitalylanzate.es>), which contains courses on the development of digital skills in order to improve professional and entrepreneurial activities.

In addition to IT companies, many educational content publishing houses have offered their digital content to the Ministry of Education and to the autonomous communities. The platforms **Santillana Proyectos** (<https://santillana.com/es/news-la-escuela-en-casa-santillana/>) and **Libromedia** (<https://digital.santillana.es/que-es-libromedia/>) by the publisher Santillana, the project-based learning environment from publisher Edebé (<http://prensa.edebe.com>), platform **Misión para Aprender Repasando** (Mission to Learn by Reviewing) (<https://aprender.force.com/s/app/a041t00000GfSDdAAN/mars>) by the publisher SM, and **AulaPlaneta** (<http://aulaplaneta.com>) are some of the compelling examples.

During our research, we have found out that the authorities have also participated in building adequate educational strategies during the pandemic. Those were central authorities, like the Ministry of Education, as well as local authorities (Spain consists of autonomous communities). Let us provide some examples:

The state TV channel RTVE offers Educlan (<https://www.rtve.es/educlan>), an educational service which includes audiovisual content for ages 3-10 coordinated by the Ministry of Education in cooperation with educational publishers. The idea is to stay connected to the classroom, although in a different way. **Somos cine** (<https://www.rtve.es/television/somos-cine/>) is a portal launched also by RTVE in order to give the public free access to more than 60 Spanish movies.

MIU – the Ministry for Universities (El Ministerio de Universidades), in coordination with the Association CRUE (CRUE Universidades Españolas), has launched the platform **La Universidad en casa** (eng: Home University) that supports teachers, students and the society in general to ensure that the circumstances they are going through have the least possible impact on the training of students. It's a practical guide helping teachers to prepare their lessons. (https://www.uned.es/universidad/inicio/uned_uoc_solidaria/elearning.html). The platform contains methodologies, resources, and practical recommendations.

A lot of local educational authorities had to focus on enabling and facilitating effective distance education. Some of them made a detailed guide for distance learning like la Xunta de Galicia (Executive authority of the Autonomous Community of Galicia) - <https://www.edu.xunta.gal/portal/es/node/30586>. This Guide touches upon the following issues:

- Clear and consistent purpose. Remote tasks must have a clear objective. This can range from the practice of knowledge already acquired before the centers closed, to the expansion of the centers or their transfer to other settings.
- Adequate task design. Students appreciate the effort of teachers. Well-designed and regularly updated tasks are more effective. Depending on the resources of the teaching staff, greater personalization is recommended. And the teachers should always pay attention to the resources that each student has at home.
- Personalized correction/revision. The feedback on the tasks must be personalized and of high quality. Sending tentative solutions or correction templates practice should be avoided.

Another initiative launched by the local authorities of some autonomous community as well as some cities is **CULTURA 21** (<http://www.agenda21culture.net/es/culturecovid19>). This portal is aimed at cultural mobilization of cities and local governments amidst the COVID-19 crisis. They made a Declaration on April 23, 2003 titled “Make sure that the culture is an integral part of the response to COVID-19” (la Declaración “Asegurar que la cultura forma parte integral de la respuesta a la pandemia de COVID-19”) within the Campaign #culture2030goal. They also issued

Carta de Roma 2020 covering the right to participate freely and fully in the cultural life among other activities and events. Now local authorities taking part in CULTURA 21 are preparing webinars about culture and series of reports about the pandemic. They also have a Twitter account with hashtag #CULTURAcovid19.

The Ministry of Education of Spain has compiled a list of the websites where educational resources and various useful pieces of information for distance learning can be found:

1) **Aprendo en casa**: web launched by the Ministry of Education and Vocational Training (Ministerio de Educación y Formación Profesional) in which information about resources, materials, tools, applications, etc. is channeled for families, students and teachers. Similarly, there is a section that includes a list of the reference sites of the autonomous communities.

Also, the Ministry of Education and Vocational Training, in collaboration with the state channel RTVE and with the assistance of 14 publishers and nine educational portals, launched on March 23 the “**Aprendemos en casa**” program. It is a television program requiring five hours a day with educational content for students between six and 16 years old.

2) Recursos para el aprendizaje en línea (<https://intef.es/recursos-educativos/recursos-para-el-aprendizaje-en-linea/>): web launched by INTEF (Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado) (eng: National Institute of Educational Technologies and Teacher Training, offering information about resources, training, and educational support.

3) **Procomún** (<http://procomun.educalab.es/es/>): is a website where one can find a list of learning resources organized by subjects and subject areas for compulsory secondary education.

4) Online learning resources for infant care and primary: (<http://procomun.educalab.es/es/comunidades/recursos-para-el-aprendizaje-en-linea-infantil-y-primaria>)

5) Online learning resources for secondary education and bachelor degree courses: <http://procomun.educalab.es/es/comunidades/recursos-para-el-aprendizaje-en-linea-secundaria-y-bachillerato>

6) Online learning resources for Vocational Training: <http://procomun.educalab.es/es/comunidades/recursos-para-el-aprendizaje-en-linea-secundaria-y-bachillerato>

7) **Proyecto Descartes**: (<https://proyectodescartes.org/indexweb.php>) – the website of the Descartes Digital Educational Network, which includes materials for various subjects that can be used on computers, tablets and smartphones, in any operating system.

8) **Legó Education Robotix** (<https://www.robotix.es/es/steam-online>): online initiatives designed so that schools, teachers and students can continue learning robotics and programming from home.

9) **Educaplay** (<https://www.educaplay.com>) is a tool that allows creating recreational activities, while offering the possibility of finding tasks for different themes and levels.

Distance learning is well-known by the **Centre for Innovation and Development of Distance Education** (CIDEAD), which provides basic and secondary education for Spanish citizens abroad and to those living in Spain who are unable to attend physical schools.

10) **Aula Mentor** (<http://www.aulamentor.es/>) is an online training program for adults who cannot follow regular face-to-face programs and whose pace of learning and/or dedication requires

a flexible approach, not tied to schedules or deadlines. Although it continues to function, all face-to-face activities, including evaluations, have been suspended.

The shutdown of companies, workplaces and schools has had an impact on the work-based learning component of VET programs and apprenticeships (VET - Vocational Education and Training). Education and labor authorities are taking the necessary measures to make work placements more flexible. If this situation persists, exceptional measures will have to be taken to ensure students complete the programs and obtain their degrees.

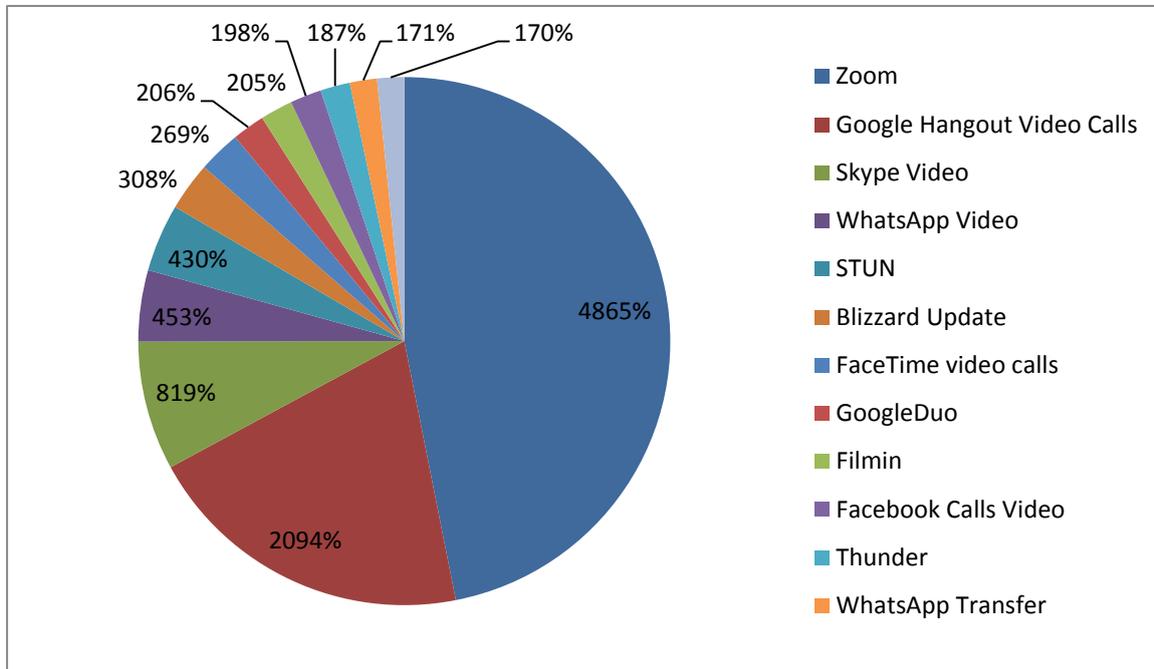
Since December 2019, the State Foundation for Training in Employment (FUNDAE – Fundación Estatal para la Formación en el Empleo) and the Public Service of State Employment (SEPE - Servicio Público de Empleo Estatal) have been offering training resources in digital skills at no cost, of special interest to unemployed or SME (small and medium-sized enterprises) workers, thanks to agreements signed with 12 large technology companies; more are underway. There are more than 160 training resources currently available, from the most basic to the most advanced ones, which can be accessed from any device with an Internet connection and, in certain cases, will lead to certification. Both the MEFP and SEPE are in contact with other departments and regional authorities to adopt common criteria so that no student, learner or worker is thrown back as a result of the pandemic in terms of skills development.

Also, our attention was drawn to two following Spanish platforms - Smartraining and Linkia Talentia:

Smartraining (<https://smartraining.es>) is an e-learning platform that has made a large number of licenses available to Spanish schools so that schools can train their teachers in methodologies and the use of distance education platforms. The offer is especially geared towards Compulsory Secondary Education (ESO) centers. "Right now, schools are facing three big problems. One, they do not have the necessary technology to teach virtual classes. Two, their educational programs are not digitized and, three, their teachers do not have the necessary skills training to provide distance education," says Claudio Bravo, director of Smartraining Spain.

Linkia Talentia points in the same direction, providing its services to eleven schools and 3,500 vocational training students. "In order for a student to be able to follow his or her classes online without a problem, the school basically needs to do two things: to choose the technological tool that suits it well and to train its teachers in the use of said tool and online learning methodology. There are various video conferencing tools on the market, but not all of them are designed for teaching. A class implies that the teacher must have some control over the students and therefore the student cannot interrupt the person speaking whenever he wants, or he cannot invite people from outside the class, for example. And the educational center must also have control over what is happening in the classroom," says Guillermo Ricarte, general director of this company.

Part 4. The most popular applications in Spain used for educational purposes



Pic. 1. Apps that most increased their traffic (Percentage of variation of internet traffic March 1, 2020 -April 7, 2020 (data from Expansion))

Zoom, a videoconferencing application, has multiplied its use in almost 50 times in Spain since the beginning of the confinement. Despite Zoom's growth, WhatsApp Video is the most used application in Spain by far, eight times more than the next one.

The lockdown measures due to the Covid-19 pandemic are transforming the use patterns and customs of the Spanish people. Initially, after the declaration of the state of emergency, the voice calls rebounded to historical levels and then moderated their growth and approached pre-crisis levels again.

According to Vodafone network statistics (with about 21% of fixed broadband customers (over 3.1 million) and 23% of mobile customers (12.4 million)), video conferencing applications are the ones that have grown the most since the onset of the crisis in Spain in early March.

In fact, seven of the ten applications that have increased their use the most in this situation are video conferencing applications (in this order, Zoom, Google Hangout, Skype Video, WhatsApp Video, Face Time, Google Duo, Facebook Calls Video) while the three others are STUN, a protocol for voice calls over the Internet, the video game developer Blizzard and Filmin, a pay TV application specializing in movies and series. Thus, the application that has increased its use the most throughout the world during confinement is Zoom, especially in the corporate and educational sectors. Its use increased more than 49 times since the beginning of March until last week. Vodafone measures traffic in gigabits per second, since what is measured in order to properly size the network is the maximum peak of traffic in each day for each of the applications rather than the accumulated data volume, which would be measured in gigabytes.

The use of Google Hangout has grown by 2,094%, which is more than 21 times compared to the start of the outbreak. And Skype, a Microsoft app, is in the third place with a growth of 819%, that

is more than 9 times. The fourth place in terms of growth is held by WhatsApp Video, although its increase is 453%, hence a fivefold use increase compared to the pre-crisis figures, is misleading. And it is less indeed, because growth is less, but the magnitudes are much higher. WhatsApp Video is, by far, the most used video conferencing application in Spain, with magnitudes that are 8 times those of its most used rival, which is now Zoom. WhatsApp has generated a momentary traffic spike on April 7 of up to 33 gigabits per second (based on a the pre-crisis base of 5 Gbps), which is almost eight times higher than the 4.2 Gbps that Zoom has reached, and Fourteen times more than Skype Video and Google Hangout, with 2.37 and 2.35 Gbps, respectively on the same date. Regarding recent developments, the strong growth of Zoom has had an impact, above all, on Google Hangouts and, to a lesser extent, on Skype, which has seen its use drop. Also notable is the stabilization in recent days of Face Time, Apple's video call system, around 1 Gbps, which indicates that the iPhone and iPad customer base, very small compared to the one that uses Android-based devices, has already reached its maximum foreseeable use.

Part 5. Italy: the input of multiple actors of educational system (governmental organizations, IT companies, educational centers, TV channels)

Following the methodological recommendations of the Italian Ministry of Science, educational institutions developed scenarios of implementing distance learning and teaching/learning formats requirements adequate for their status of IT infrastructure using the available external resources. Therefore, each and every educational institution created its own toolkit and set of scenarios of adjusting to and accommodating for education in the online environment.

Italy's Ministry of Education created a web page dedicated to distance learning in cooperation with Indire, which resulted in over two thousand teachers taking part in interactive educational workshops within one day. "This participation yet again testifies to the response ability on the part of Italian school", says Minister Luccia Azzolina. The attendance was beneficial for teachers. Giovanni Biondi, President of Indire explains, "At 11 webinars we talked about the availability and use of professional resources which can be utilized in education, offered most efficient solutions and how they may be best realized in the emergency situation in hand. These are the already tried and tested technologies and formats that are suitable for children. This experience may give an impetus to innovations which will be there even after the emergency is over." The principal of a comprehensive school in Sarzana (Liguria) made the following post on his Facebook account page, "The virus is not going to stop us. And while you and I keep staying on lockdown, dedicated groups are already mobilized to provide support for all our colleagues. We will try to take advantage of the current emergency situation. I have already seen interesting offers, but first and foremost I've seen enthusiasm and commitment. Partially these are the already widely used practices and technologies which open up new opportunities for us." The kids continue to "go to school", even though it is closed."

The webpage on the Italian Ministry of Education website contains links to certified platforms, cooperation tools, and various multimedia materials. Among the different platforms one can find, for example, G-Suite for Education, which includes Gmail, Drive, Calendar, documents, sheets, presentations, forms, Hangouts Meet, and Classroom. G Suite for Education enables teachers to organize livestreams and record their lessons, run tests, distribute assignments and control the progress of their completion. Hangouts Meet is a platform for video meetings and conferences. Classroom helps teachers create virtual classes, add tutorials, upload and display assignments and tests, leave and receive comments, and discuss the student papers. In the Rovigo province, the

secondary school students at Leonardo da Vinci and Marino Marin schools in Papozze and Adria respectively follow the lessons using the Google Edu app.

(Dean Stokes, Google for Education) Google launched an online education portal named “Teach from home”. This is an emergency center for teachers in the period of COVID-19 pandemic offering information and useful tools. By means of this portal, teachers can build websites for their classes (using Google class) in required subjects (using Google Websites), upload study materials and online courses. “Every day, more and more educators are being asked to teach from home. And we can help them with that.” (Dean Stokes, Google for Education).

Microsoft Office 365 offers their services to help organize distance learning. This single intuitive and user-friendly platform allows students, teachers and school employees to comfortably cooperate, create content and share resources. The Office 365 integrated services and apps enable teachers to build the educational process at a state-of-the-art level. Microsoft Teams is one of such apps. With its help, one can easily create groups containing people both from within and beyond your educational institution, communicate with other users and organize prompt and inclusive communication, share and co-edit documents in a secured way, as well as complete assignments and much more.

Among the platforms presented at the Italian Ministry of Education website, one can find WeSchool. It is an educational platform designed to help instructors to run the teaching process on the Web in a high quality and efficient way. It enables arranging teamwork, chatbox communication, setting up virtual classes, completing assignments, and run tests.

We are attempting to make a giant leap and challenge large-scale international companies such as Google Classroom, Apple iTunes U, Edmodo,” explains Marco de Rossi, founder of Oilproject and Weschool. “The interface is very simple and is designed even for tech-unsavvy teachers, who have already tried and tested the platform and have given us their positive feedback”. (<https://www.wired.it/economia/start-up/2016/05/17/weschool-superpoteri-prof/>)

HUB Scuola is the largest Italian e-learning platform. Developed by Mondadori Education e Rizzolo Education, it meets all the needs of the contemporary digital education. The platform grows increasingly useful, giving instructors and students the opportunity of cultural growth and education, especially during these months of school break. (<https://www.orizzontescuola.it/hub-scuola-la-piu-grande-piattaforma-italiana-per-la-didattica-digitale/>)

The Rai School and Rai Cultura websites also have an array of interesting materials to offer. The Rai Cultura website features a list of helpful resources to be used as supplementary materials for training and teaching. One of them is an online resource that gives some valuable tips on distance learning. Emergency online Pedagogy is a web page edited by William Fisher, Professor of Harvard University, which presents the way he and his colleagues handled the emergency situation. Apart from that, Treccani School provided free-of-charge tools and content of their platform to all the schools interested in distance learning.

The Italian Ministry of Education website has created a section called #LaScuolaNonSiFerma. It aggregates social media pages discussing the most frequent issued related to remote learning, share their emotions and experience, cite examples of distance instruction that is run daily at Italian schools. This is a good way to maintain the connection with the students, make sharing the best practices more entertaining, as well as unify educational institutions.

As required by the Ministry of Education, Indire launched a solidarity initiative among schools

to overcome the COVID-19-induced emergency situation, while offering options of resolving problems around distance learning using innovative technologies. Solidarity is achieved through the support of school networks of the “Avanguardia educativa” movement, “Piccole scuole”, and the eTwinning European community which are willing to cooperate with teachers and heads of educational institutions. The access to webinars is free-of-charge. Their goal is to incorporate, proliferate and share best practices supporting the innovative process in Italy’s education system.

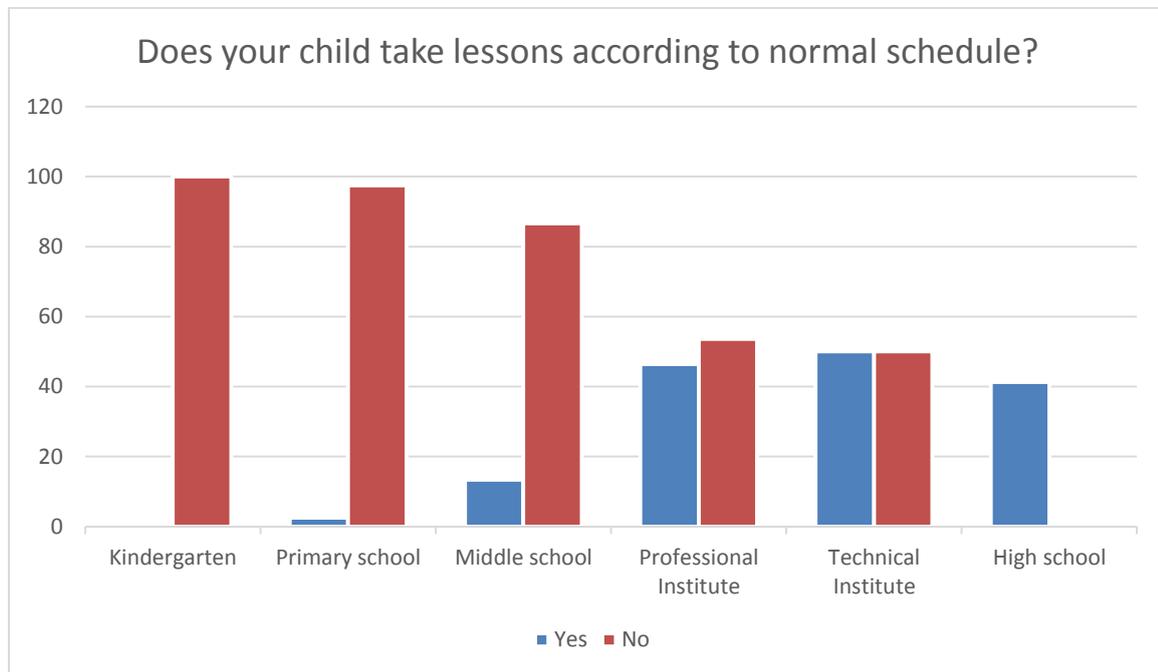
L’inclusione Via Web is a section specifically created to support the schools. The section is continuously updated with new resources. It contains links enabling a quick use of tools and platforms that are at a disposal of educational institutions thanks to a protocol signed by the Ministry. Also, the Ministry of Education in collaboration with Treccani Institute and Rai Radio 3 presented Maturadio, an educational podcast program. This program contains information on different subjects for graduating students. The Ministry is also going to upload all the podcasts to its Spotify channel which was specially set up for this purpose and has become a new tool of exchanging useful content for students and teachers.

Humans To Humans created the ContenutiScuola.it platform. The platform was built to support teachers and students searching for academic papers, research projects and useful self-study materials. The platform is aimed to encourage the study of information already existing on the Web, which is presented by organizations and enterprises in a simple and generalized way arranged as mini-courses. Every teacher may get educated, participate in courses, and use the available content to prepare their distance lessons. Students can also take part in courses and use the available content to implement their projects or as materials for an in-depth and advanced study of subjects.

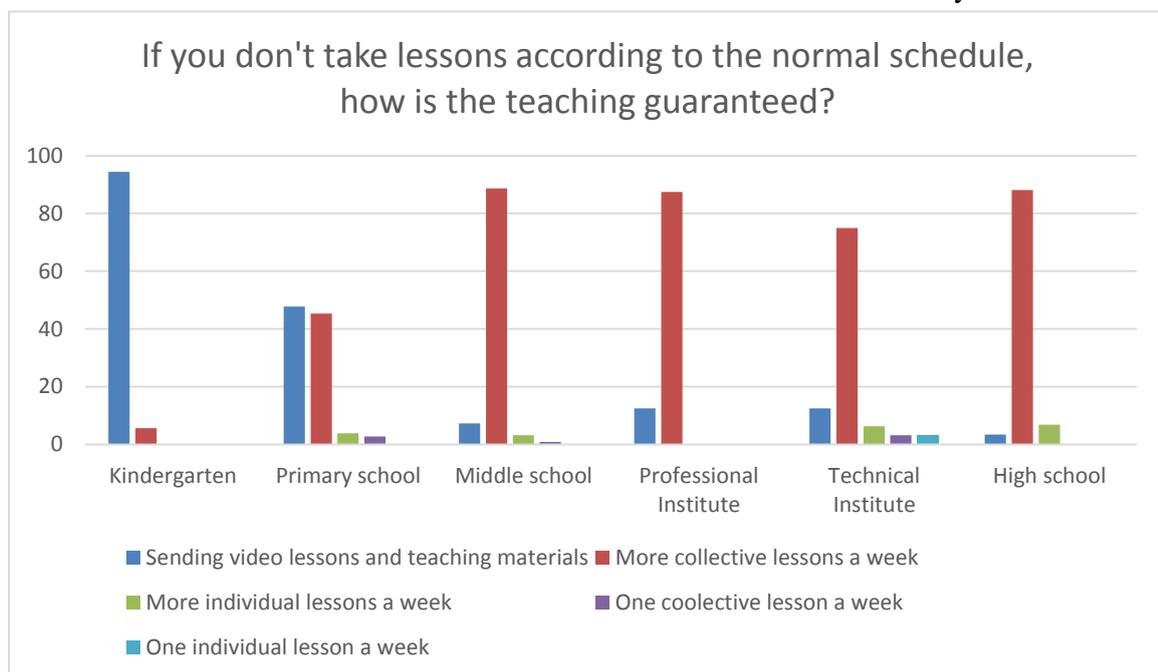
In the context of the Covid-19 emergency, the Protom group came up with an idea to launch the Scuolab platform. This platform features lab tests and experiments in Physics and Chemistry. Another useful format is “armchair lessons”, or “telelessons”, which helps the children to have fun when learning (the concept of edutainment) rather than just while their time away playing endless videogames. Founded by Chiara Burberi, an Italian national, the Redooc platform is suitable for the DSA students and those with special learning needs (BSA). Thanks to the support from Global Thinking Foundation, they were able to launch the #Schoolacasa initiative, which enables free access for all primary schools and secondary schools of the first two years of education. (<https://www.miur.gov.it/web/guest/-/la-piattaforma-scuolab-per-la-didattica-a-distanza>)

In the city of Lodi, thanks to the use of IT, some Samsung Electronics Italia employees invite groups of students of the Maffeo Vegio humanities lyceum and the Alessandro Volta technical institute for a two-hour distance session, during which they share the experience that will be helpful for the young people in their future study and work. A group of students from the industrial technical institute took part in a specially organized remote lesson of LetsApp Solve for Tomorrow project, an educational activity project aimed to develop a creative attitude to tackling social issues.

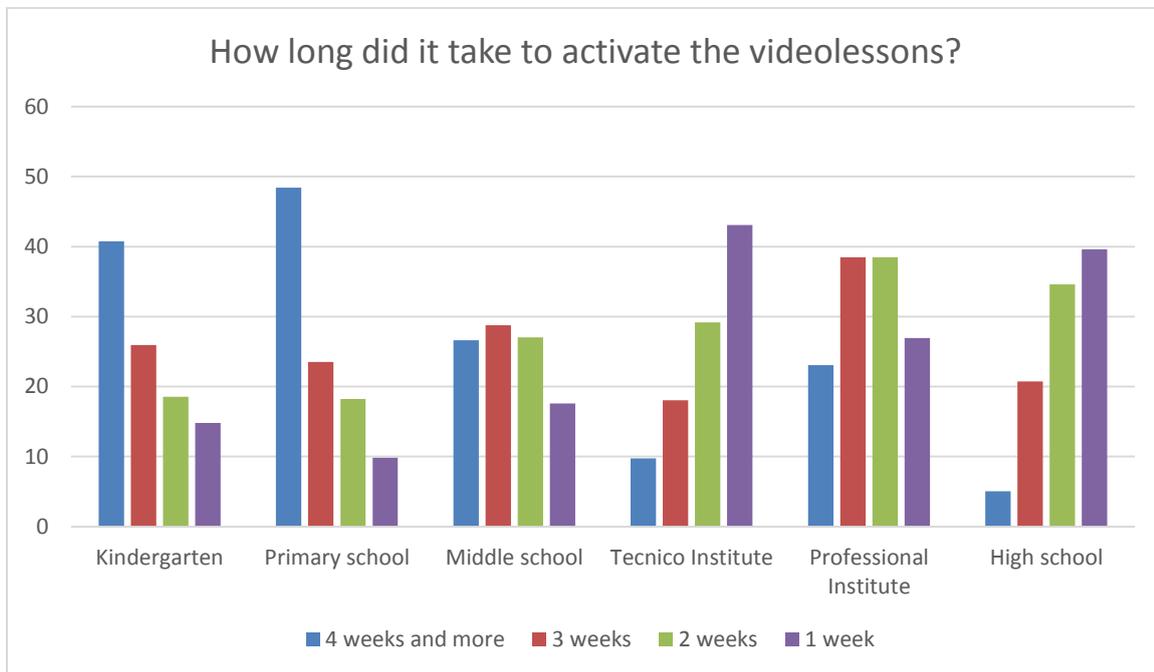
One of the most challenging school years in Italy’s history is drawing to a close. Vares News decided to run a survey among parents asking them to answer a number of questions. 1,000 answers were received. The data collected in that study is presented in the diagram below.



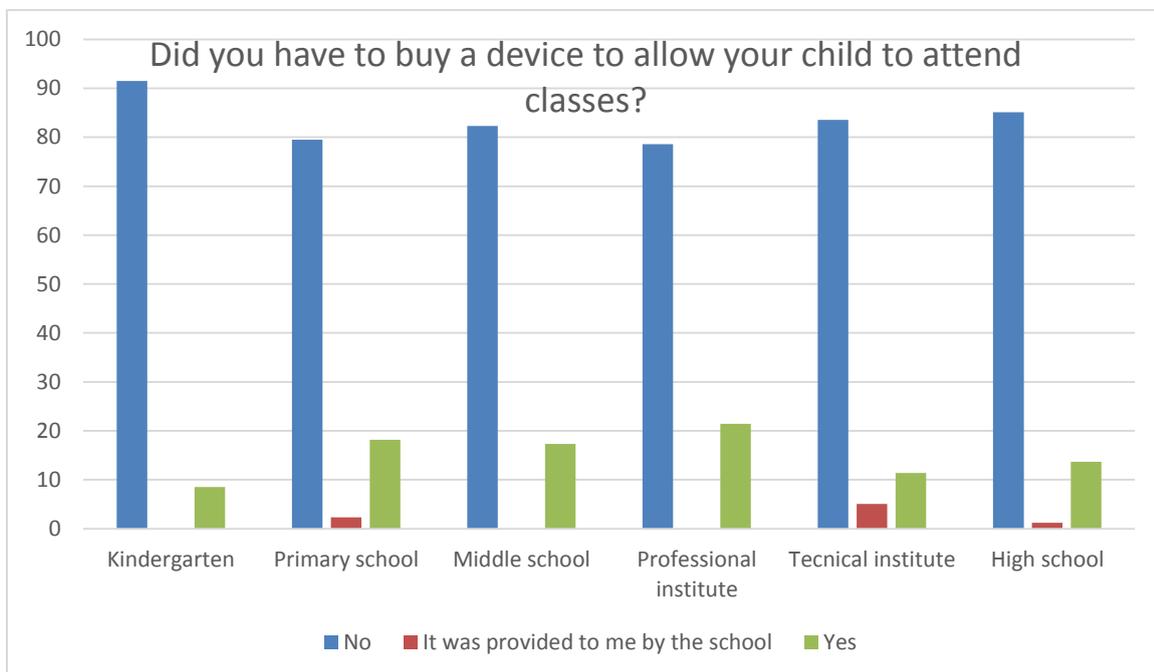
Pic. 2. The data collected in the “Vares News” study.



Pic. 3. The data collected in the “Vares News” study.



Pic. 4. The data collected in the “Vares News” study.



Pic. 5. The data collected in the “Vares News” study.

Summarizing the above, we should note that shifting to distance learning prompts the questions of digital literacy for both students and teachers. Another important aspect is the remote teaching infrastructure. And this is where the problems have lied so far.

Conclusion

The Covid-19 crisis is completely changing education patterns in the world. We observe how higher education is adapting to the new challenges of this situation, which seems that it will not be temporary, but will be established over time. It seems that education is experiencing a real disruption, with a change in the educational paradigm, which will transform the traditional pedagogy, based on face-to-face interaction. The disruption would lead us to mixed models, which incorporate online education and personalized training. Although small-scale local tentative attempts had already been made, from now on the changes will spread globally. This online model forces to change many of the methodologies implemented so far, so the main urgent challenges should be the following ones:

- Guarantee access to technology for students, who can further personalize their training if artificial intelligence platforms are available.
- Train the teacher, both for the use of technology and to enhance the capacities where the student can excel. In Spain and Italy, these models have already been tested as pilot ones, but it is still necessary for the entire educational community (teachers, students, universities, and public administration) to adapt to the new way of working, of adjusting to new schedules, new activities and methodologies.

All this allows us to think that all stakeholders are going to learn valuable lessons from this crisis. We have to face an important culture change, with several fronts to attend to: teachers have to adapt their mentality and accept it as a fact that digital competence is a very important tool on a day-to-day basis. Some management teams have to realize that they can no longer postpone the use of technology. Administrations will have to invest in reinforcing the “digital school”. It should though be mentioned that all these tasks are not automatically achievable: actors of educational system will have to reflect on what has happened during these weeks, extract data and analyze it, and after that, establish a complete plan, with objective, measurable and achievable goals. It is becoming clear that the first change to be made is to focus the course on the student and not on the teacher. The course is no longer a checklist of topics, it has become a package of activities aimed at leaving a lasting message in the students’ minds.

Another issue to think about is how to evaluate the students. It is obvious that assessments should be done on writing as a result of research, problem solving, critical reading, or workshops. This system forces teachers to innovate ways for the students to learn by doing, not repeating, being more creative and above all critical. We could see that virtuality is a learning modality in which the student has to be more active and cooperative in the process. This pandemic that forces us to stay at home is a unique opportunity not only to become innovative teachers, but also for students to become more aware and responsible for their learning.

To sum up, we believe that in order to carry out online learning we need the following:

- 1 - specific knowledge of the standard tools used in digital education
- 2 - the appropriate infrastructure, both in terms of apps and platforms (Blackboard, Microsoft Teams, etc.) and at a technical level (by having powerful servers to withstand the telematic workload that, for example, it is carrying on now, and have the bandwidth required to connect).
- 3- achievement of the training objectives. It is also necessary to have a sufficiently trained faculty in the methodological plane of online teaching, including the use of technical resources.
- 4 - the cooperation between teachers and students. Albert Sangrà, professor of Psychology and

Science of Education at Universitat Oberta de Catalunya states that “It is not just resources; you also have to know what to do with them. You can send a recording to your students, as long as you also send them an e-mail with instructions and stay in touch and interact with them. This is essential in online education, and we cannot give it up, because students should not feel isolated”.

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