



DIGITAL SCHOOLS CONTEST



Funded by the Erasmus+ Programme
of the European Union

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TECHNICAL DATA

TITLE: DISCO – Digital Schools Contest

PROJECT NUMBER: 2015-1-MK01-KA201-002841

PROJECT TYPE: Erasmus +: Key Action 2 - Cooperation for Innovation and the Exchange of Good Practices - Strategic Partnerships for school education.

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DATE OF EDITION: November 2016.

This project has been funded with support from the European Commission, Programme Erasmus+. This manual reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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ABSTRACT

This handbook was created under the Erasmus+ programme, KA2 - Cooperation for Innovation and the Exchange of Good Practices - Strategic Partnerships for school education.

Following this chain of idea, this handbook is the result of all of the work throughout the project resulting in a comparative study between Macedonia, Spain, Portugal and Turkey, to get to know how digital their schools are; case studies of digital schools, best practices, training material on methodology in ICT integration in education and a website.

The main objective of this handbook is to act as an accessible and easy tool for teachers to be inspired and use to innovate their lessons, motivating students and adapting their methods to our new world that is becoming more and more digital.

Key-Words: Digital era, teacher's resources, digital ideas for classrooms.

INTRODUCTION

This handbook was created under the framework of the Erasmus+ project named "DISCO-Digital Schools Contest", with the approval number 2015-1-MK01-KA201-002841 and a total of five partners, from Macedonia: South East European University Tetovo and SSOU Mosha Pijade Tetovo; from Spain: Inercia Digital; from Portugal: ZENDENSINO-Cooperativa de Ensino IPRL and from Turkey: Pakize Kokulu Anadolu Lisesi.

This project has overall and specific objectives. The overall objectives are: enhancing the key competences and skills on ICT and learning performance of young people attending schools, through promoting quality improvements, innovation excellence at the level of education, in particular through enhanced transnational cooperation between education and training providers and other stakeholders in the field of ICT integration in Schools (teaching and management); boosting the emergence and raising awareness of a European lifelong learning area designed to complement policy reforms at national level and to support the modernization of education systems, in particular through enhanced dissemination of good practices and cooperation and supporting the development of innovative practice, enhance the quality of pupil and staff work, build capacity in schools and foster strategic cooperation between school organizations. The specific objectives are: developing a programme of initiatives on ICT integration in education to promote innovation, exchange of experience, good practices and know-how between different types of organizations involved in education; Developing basic and transversal skills in education, using innovative and learner-centered pedagogical approaches and enhancing digital integration in learning, teaching, at various levels: supporting ICT-based teaching, as well as ICT-based assessment practices. In particular, supporting teachers, educational staff in acquiring or improving the use of ICT for learning and related digital competences.

To achieve and fulfill all of these objectives, a number of intellectual outputs were designed and divided throughout all of the project partners, resulting in this handbook which has the main objective of working as a tool for all teachers around Europe that are looking for new innovative ways to capture the attention of our youth, motivating them and thus, leading to less school drop-outs.

Following this chain of ideas, the handbook contains the result of all of the work done, namely: the results of the questionnaire to schools (comparative study) to get to know how digital their schools are; case studies of digital schools, best practices, and training material on methodology in ICT integration in education. A website has also been created that works as a digital platform in which all of these project results will be uploaded and accessible to anyone, anywhere around the world at the click of www.digitalschools.eu.



Comparative Study

COMPARATIVE STUDY

▪ School Representatives

Below, there is the analysis of the questionnaire oriented to European staff and teachers of every grade of Primary and Secondary (High) Education. It deals about the introduction and needs of formation about ICT within the educative institutions.

The survey consists of 86 representatives, who were mainly directors of the schools. The survey was conducted in four countries: Spain, Macedonia, Portugal and Turkey. The interviews were conducted during the period January-March 2016.

The summary statistics of the overall sample and further sub grouped by country are shown on Table 1.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Number of students	86	655.66	437.96	17	1600
Number of teachers	86	48.88	28.80	2	152
Number of management staff	86	9.55	16.67	0	97
Number of other staff	86	11.04	20.07	0	150

Summarized statistics for Spain are shown below.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Number of students	13	365.76	374.14	17	1400
Number of teachers	13	35.76	33.50	2	110
Number of management staff	13	4.84	10.67	0	40
Number of other staff	13	5.07	5.43	1	20

Subsequently the statistics for Macedonia are shown.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Number of students	30	802.40	419.56	69	1600
Number of teachers	30	61.90	30.10	16	152
Number of management staff	30	5.20	4.32	1	25
Number of other staff	30	21.23	31.26	0	150

Next are shown the statistics for Portugal.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Number of students	17	288.41	77.63	86	400
Number of teachers	17	30.76	9.15	15	45
Number of management staff	17	7.82	2.69	3	13
Number of other staff	17	8.88	3.78	3	17

And finally, outlined statistics for Turkey are shown below.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Number of students	26	871.42	408.96	88	1590
Number of teachers	26	52.26	25.49	8	110
Number of management staff	26	18.07	27.43	1	97
Number of other staff	26	3.69	3.31	1	10

Discussion: As it can be seen from the descriptive statistics above, the highest number of students and teachers is evidenced in schools in Macedonia. Whereas the highest average management team number is evidenced in Turkey.

The next comparison of the survey results is for the number of students and number of teachers, grouped by country, as shown on the graph below.

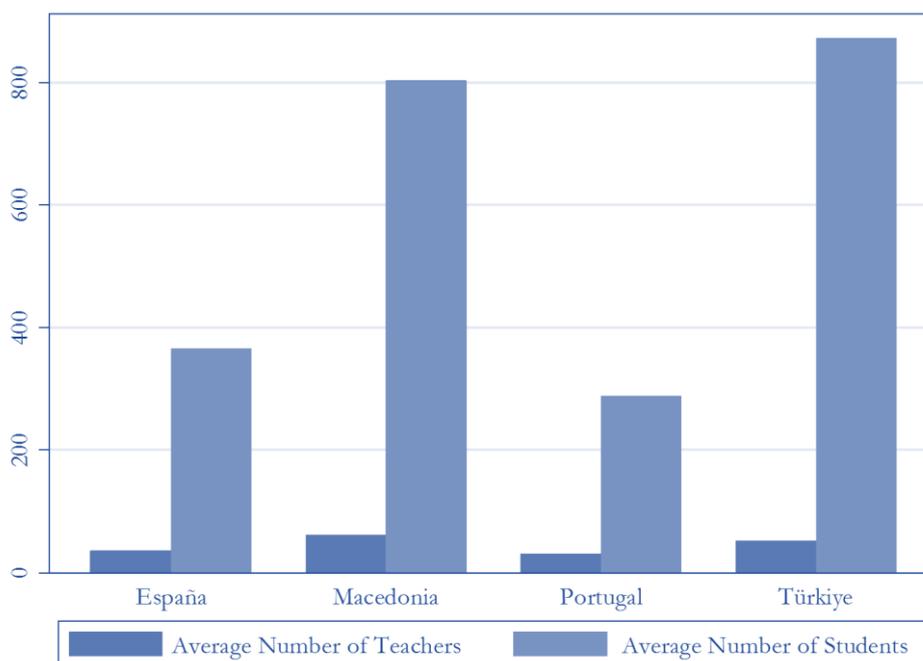


Figure 1 Number of teachers and number of students by country

Discussion: From figure 1, it can be noticed that the proportion of the number of students and number of teachers is different in these four countries. As it can be seen, in Macedonia and Turkey the average number of teachers is very low in relation to the number of students. Whereas in Portugal and Spain the average number of teachers is almost the same, while the average number of students is halved. In other words, the average teacher/student ratio for Macedonia and Turkey is 7.72% and 6.07% respectively, whereas for Spain and Portugal is 9.83% and 10.7% respectively.

Another interesting comparison is provided with the average number of teacher and average number of staff that are engaged in these schools.

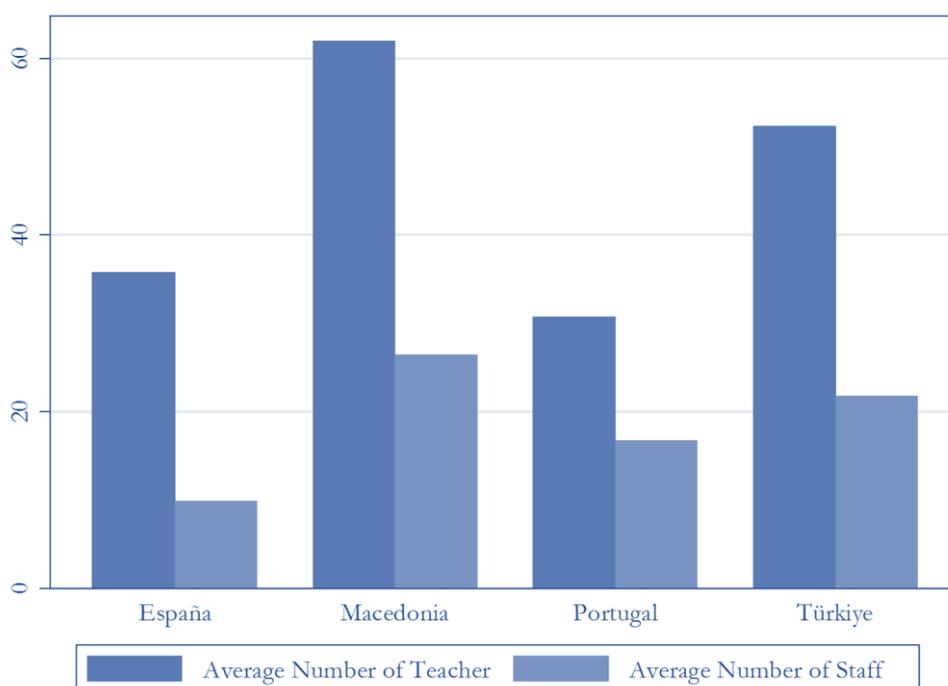


Figure 2 Number of teachers and number of staff by country

Discussion: From figure 2, it can be noticed that the proportion of the average number of staff and number of teachers is more or less the same in these four countries. As it can be seen, approximately half number of staff supports administratively the number of teachers.

Next, the overall average number of teacher, management staff and other administrative staff is provided in the graph below.

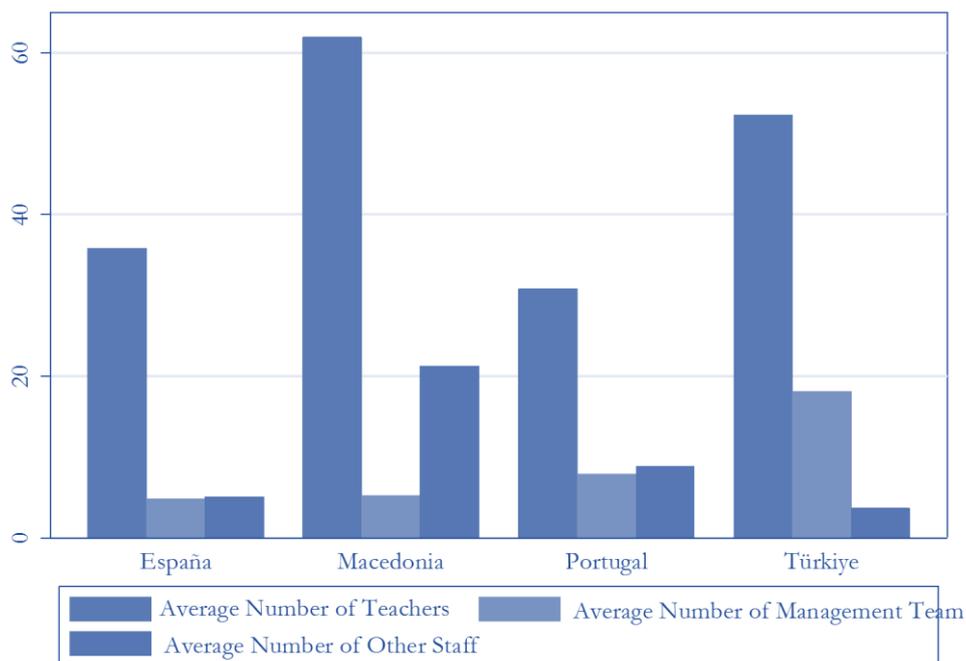


Figure 3 Number of teachers, number of management team and number of other staff by country

Teachers and Education Staff

This is a questionnaire oriented to European staff and teachers of every grade of Primary and Secondary (High) Education. It deals about the introduction and needs of formation about ICT within the educative institutions.

The questionnaire was conducted with the professors at primary schools and high schools in: (i) Spain, (ii) Macedonia, (iii) Portugal, and (iv) Turkey.

In total we gathered information for about 257 teachers for all countries – partners in the DISCO project. Following are presented the teachers' experience in education, summarized for all country-partners, taking into a consideration the aspects of teachers' experience in education and applying ICT in the teaching process, as described on Table 1.

Table 1 Descriptive statistics of continuous variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
For how long have you been teaching?	257	15.07	8.21	1	40
For how long have you been teaching in your current school/institution?	257	8.50	6.46	1	33
For how long have you been using ICT to support your teaching-learning process?	257	16.30	7.52	1	25

First we will generate analysis for each country separately, and then continue with some comparative analysis on the requirements for training of the professors in the field of ICT. The statistics are grouped by its nature of the questions (Yes/No, Likert scale type of questions).

Data Analysis – The case of Spain

According to our data 51 primary and schools teachers' are interviewed in Spain. We first provide descriptive statistics for the continuous variables, shown in Table 1.1.

Table 1.1 Descriptive statistics of continuous variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
For how long have you been teaching?	51	14.19	10.81	1	35
For how long have you been teaching in your current school/institution?	51	6.7	7.34	1	28
For how long have you been using ICT to support your teaching-learning process?	51	11.2	8.24	1	25

Following are presented statistics with a Likert scale type of questions that typically contains a labelled option (not a number), starting from the most undesirable response with 0 to the most desirable response with 3. The labelled options are described immediately below the percentages.

Table 1.2 a Descriptive statistics of ordinal variables (different categories of Likert scale)

Variables with scale 0-3	Obs.	Fractions (in %)			
		0	1	2	3
Does your school have enough digital and technological resources to work properly?	51	- (I do not use them)	43.14 (Not enough)	39.22 (Enough)	17.65 (A lot)

Are these digital devices/hardware updated?	48	20.83 (Everything is old and slow)	18.75 (The minority of them)	60.42 (The majority of them)	- (Everything is new and modern)
Are these digital devices/hardware of a good quality?	48	20.83 (They are always broken)	18.75 (The minority of them)	60.42 (The majority of them)	- (They always work perfectly)
The School encourages teachers to integrate computers in teaching-learning process.	51	13.73 (No)	21.57 (In some cases)	64.71 (Yes)	/
Teachers are well informed about the value of computers in teaching-learning process in my school	51	11.76 (No)	60.78 (It can be improved)	27.45 (They are doing it well)	/
How often do teachers need to be trained in ICT?	48	2.08 (Once is enough)	35.42 (Every two academic years)	52.08 (Every academic year)	10.42 (Twice a year)
Have you ever received ICT training to be applied in your classroom?	51	3.92 (Lack of opportunities)	1.96 (Lack of time)	17.65 (Outside the school)	76.47 (In the school where you work)

On Table 1.2 b, are presented statistics with a Likert scale type of questions that contains a labelled option, starting from the most undesirable response with Nothing/Not important to the most desirable response with Very Important.

Table 1.2 b Descriptive statistics of ordinal variables (Likert Scale)

When receiving training on ICT for teachers, how important do you find _____.	Obs.	Fractions (in %)				
		Nothing / Not important	Few Important	Quite Important	Important	Very Important
Using tools for e-learning (virtual campus)	51	17.65	9.8	15.69	39.22	17.65
Using other web tools (social networking, blogs, etc.)	51	11.76	9.8	9.8	50.98	17.65
Communication, interaction and tutoring/mentoring strategies	51	11.76	11.76	17.65	43.14	15.69
Evaluation strategies	51	7.84	9.8	13.73	49.02	19.61
Creating content for e-learning	51	9.8	7.84	17.65	50.98	13.73
Planning and didactic design	51	11.76	9.8	17.65	41.14	19.61
Developing activities for specific e-learning contexts	51	9.8	9.8	19.61	43.14	17.65

Following are presented statistics for Yes/No close ended questions.

Table 1.3 Descriptive statistics of dichotomous variables in %

Dummy variables	Obs.	Yes	No	
Does the school provide each teacher with ...	PC	51	66.67	33.33
	Tablet	51	13.73	86.27
	Notebook	51	45.10	54.90
Does your school has ...	Internet	51	88.24	11.76
	Wi-Fi	51	98.04	1.96
Do you think educational institutions should be properly equipped on ICT?	51	98.04	1.96	

Teachers should be trained by government in order to use ICT properly.		51	90.20	9.80
Have ICT made your teaching easier?		51	88.24	11.76
Do you use ICT to communicate and get in touch with ...	Students	51	60.78	39.22
	Family	51	56.86	43.14
	Teachers	51	88.24	11.76
	Head of Institution	51	84.31	15.69
Do you use ICT to share documents/info with ...	Students	51	72.55	27.45
	Family	51	52.94	47.06
	Teachers	51	88.24	11.76
	Head of Institution	51	88.24	11.76

Table 1.4 Which technological devices do you use the most in your classes, and which ones would you like to be able to use?

Variable	O	_____ only and/or combined					
		Computers	Projector	Electronic Board	Computers, Projector, Smart-phones, Electronic Board	Computers, Projector, Tablets, Cameras, Electronic notebook	More than five (Digital table, Laptop)
Which technological devices do you use the most in your classes?	51	10	4	6	11	8	12
		Computers	Projector	Electronic Board	Digital table, Laptop	Electronic notebook, Tablets	Smartphone, Camera
Which of the previous ones would you like to be able to use?	51	15	2	5	13	10	6

Table 1.5 Which ICT web tools do you use in your classes, and which ones would you like to be able to use?

Variable	O	_____ only and/or combined					
		Google docs/ Google Drive (& Social Network, & others)	Presentation tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slide share,	Diigo, Wiki spaces, Scrib	More than five
Which ICT web tools do you use in your classes?	49	13	5	3	11	5	12
		Google docs/ Google Drive (& Social Network, & others)	Presentation tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slide share,	Wiki spaces, Scrib	More than five
Which of the previous ones would you like to be able to use?	49	15	5	5	13	11	0

Table 1.6 Which of these Social networks do you use with your students, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Facebook	Instagram	Pinterest	Youtube	Twitter, LinkedIn, Blog, MySpace	More than five
Which of these Social networks do you use with your students?	49	13	3	1	15 (& Blog)	7	10
		Facebook	Blog (& others)	Pinterest	Youtube	Twitter, LinkedIn, MySpace	More than five
Which of the previous ones would you like to be able to use?	49	5	9	16	2	7	10

From the summary statistics for Spain one can conclude the following:

- ✓ Teachers have a minimum of one year of experience in teaching process and a maximum of 35 years, whereas for experience at the current school, they have indicated a minimum of one year of experience at this school and a maximum of 28 years. Whereas considering the years of experience in using ICT in teaching process they have indicated that they have a minimum of one year and a maximum of 25 years of experience.
- ✓ Only 17.65% believe that the school provides sufficient digital resources.
- ✓ 60.42% of the Spain teachers' believe that high proportion of electronic devices are updated, however nobody thinks that they are new and modern. The same applies for the quality of electronic devices in Spain.
- ✓ 64.71% believe that in Spain the schools encourage teachers to use ICT.
- ✓ Higher proportions of teachers in Spain (60.78%) believe that the information on the value of the usage of computers in teaching can be improved.
- ✓ Higher proportions of teachers in Spain (52.08%) believe that teachers should have trainings each academic year.
- ✓ 76.47% of the professors have claimed that they have taken ICT training at the school that they are working.
- ✓ Social network and providing content for e-learning have the higher percentage (with 50.98%) of professors answering as the most important for them when trained for ICT.
- ✓ 66.67%, 13.73% and 45.10% have indicated that the school provides them with PC, tablet, and e-diary, respectively.
- ✓ 88.24% and 98.04% have indicated that the school has Internet and Wi-Fi, respectively.
- ✓ 98.04% believe that the schools should be adequately equipped for ICT.
- ✓ 90.20% believe that teachers should be trained by government for appropriate usage of ICT.
- ✓ 88.24% believe that ICT has made their teaching easier.
- ✓ Higher percentage use ICT for communicating with colleagues and management staff (88.24 and 84.31 respectively). The same applies for exchanging documents (both 88.24 per cent).
- ✓ Considering the technological devices:
 - Mostly used in class for the case of Spain are shown in Table 1.4. One can notice that 10 out of 51 have indicated to use computers only (19.6%), and 4 and 6 have indicated to use projector and electronic board, respectively. 12 (24%) of professors in Spain have indicated to use more than five combined technological devices in class.

- Out of these, most of them would like to be able to use computers (30%), digital tables and laptops (25%, combined) and electronic notebook and tablets (19.6%, combined).
- ✓ Considering ICT web tools:
 - Mostly used in class for the case of Spain are shown in Table 1.5. One can notice that 13 out of 49 have indicated to use Google docs/ Google Drive, Social Network, and others (26.5%, combined), and 11 have indicated to use Sharing tools and Slideshare (22.4%, combined). 12 (24.5%) of professors in Spain have indicated to use more than five combined ICT web tools in class.
 - Out of these, most of them would like to be able to use Google docs/ Google Drive, Social Network, and others (30.6%, combined), Sharing tools and Slideshare, (26.5%, combined) and Wiki spaces and Scrib (22.4%, combined).
- ✓ Considering Social Networks:
 - Mostly used in class for the case of Spain are shown in Table 1.6. One can notice that 13 out of 49 have indicated to use Facebook (26.5%, combined), and 15 have indicated to use Youtube and Blog (30.6%, combined). 10 (20.4%) of professors in Spain have indicated to use more than five combined Social Networks in class.
 - Out of these, most of them would like to be able to use Pinterest (30.6%, combined), Blog and others (18.4%, combined) and Twitter, LinkedIn, and MySpace (20.4%, combined).

Data Analysis – The case of Republic of Macedonia

According to our data 70 primary and schools teachers' are interviewed in Spain. We first provide descriptive statistics for the continuous variable, shown in Table 2.1.

Table 2.1 Descriptive statistics of continuous variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
For how long have you been teaching?	70	13.77	8.39	1	40
For how long have you been teaching in your current school/institution?	70	12.37	7.75	1	33
For how long have you been using ICT to support your teaching-learning process?	70	15.9	6.7	2	24

Following are presented statistics with a Likert scale type of questions that typically contains a labelled option (not a number), starting from the most undesirable response with 0 to the most desirable response with 3. The labelled options are described immediately below the percentages.

Table 2.2 a Descriptive statistics of ordinal variables (different categories of Likert scale)

Variables with scale 0-3,4	Obs.	Fractions (in %)			
		0	1	2	3
Does your school have enough digital and technological resources to work properly?	70	1.43 (I do not use them)	47.14 (Not enough)	51.43 (Enough)	- (A lot)
Are these digital devices/hardware updated?	56	39.29 (Everything is old and slow)	37.50 (The minority of them)	21.43 (The majority of them)	1.79 (Everything is new and modern)
Are these digital devices/hardware of a good quality?	57	7.02 (They are always broken)	73.68 (The minority of them)	19.30 (The majority of them)	- (They always work perfectly)
The School encourages teachers to integrate computers in teaching-learning process.	50	5.72 (No)	22.86 (In some cases)	71.43 (Yes)	/
Teachers are well informed about the value of computers in teaching-learning process in my school	70	10 (No)	67.14 (It can be improved)	22.86 (They are doing it well)	/
How often do teachers need to be trained in ICT?	48	7.35 (Once is enough)	33.82 (Every two academic years)	47.06 (Every academic year)	11.76 (Twice a year)
Have you ever received ICT training to be applied in your classroom?	51	2 (Lack of opportunities)	13 (Lack of time)	11.59 (Outside the school)	73.91 (In the school where you work)

On Table 2.2 b, are presented statistics with a Likert scale type of questions that contains a labelled option, starting from the most undesirable response with Nothing/Not important to the most desirable response with Very Important.

Table 2.2 b Descriptive statistics of ordinal variables

When receiving training on Obs.		Fractions (in %)				
ICT for teachers, how important do you find _____.		Nothing / Not important	Few Important	Quite Important	Important	Very Important
Using tools for e-learning (virtual campus)	69	5.8	4.35	5.8	42.03	42.03
Using other web tools (social networking, blogs, etc.)	69	4.35	2.9	11.59	46.38	34.78
Communication, interaction and tutoring/mentoring strategies	69	4.35	2.9	13.04	36.23	43.48
Evaluation strategies	69	4.35	4.35	5.8	52.17	33.33
Creating content for e-learning	69	4.25	0	17.39	37.68	40.58
Planning and didactic design	69	8.7	1.45	14.49	42.03	33.33
Developing activities for specific e-learning contexts	69	5.8	1.45	4.35	37.68	50.72

Following are presented statistics for Yes/No close ended questions.

Table 2.3 Descriptive statistics of dichotomous variables in %

Dummy variables	Obs.	Yes	No	
Does the school provide each teacher with ...	PC	70	61.43	38.57
	Tablet	70	7.14	92.86
	Notebook	70	7.14	92.86
Does your school has ...	Internet	70	100	0
	Wi-Fi	70	91.43	8.57
Do you think educational institutions should be properly equipped on ICT?	70	94.29	5.71	

Teachers should be trained by government in order to use ICT properly.		70	69.57	30.43
Have ICT made your teaching easier?		69	92.75	7.25
Do you use ICT to communicate and get in touch with ...	Students	68	85	15
	Family	68	12	88
	Teachers	68	96	4
	Head of Institution	68	15	85
Do you use ICT to share documents/info with ...	Students	68	83	17
	Family	68	78	22
	Teachers	68	96	4
	Head of Institution	68	87	13

Table 2.4 Which technological devices do you use the most in your classes, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Computers	Projector	Electronic Board	Computers, Projector, Smart-phones, Electronic Board	Computers, Projector, Tablets, Cameras, Electronic notebook	More than five (Digital table, Laptop)
Which technological devices do you use the most in your classes?	70	14	18 (& Computer)	4	11	8	15
		Computers	Projector	Electronic Board	Digital table, Laptop	Electronic notebook, Tablets	Smartphone, Camera
Which of the previous ones would you like to be able to use?	70	23	7	9	12	11	8

Table 2.5 Which ICT web tools do you use in your classes, and which ones would you like to be able to use?

Variable	Obs	_____ only and/or combined					
		Google docs/ Google Drive (& Social Network, & others)	Presentati on tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slideshare	Diigo, Wiki spaces, Scrib	More than five
Which ICT web tools do you use in your classes?	67	21	6	8	11	0	9
		Google docs/ Google Drive (& Social Network, & others)	Presentati on tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slideshare ,	Wiki spaces, Scrib	More than five
Which of the previous ones would you like to be able to use?	67	23	9	4	7	6	0

Table 2.6 Which of these Social networks do you use with your students, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Facebook	Instagram	Pinterest	Youtube	Twitter, LinkedIn, Blog, MySpace	More than five
Which of these Social networks do you use with your students?	65	24	4	3	8 (&Blog)	15	11
		Facebook (&others)	Blog (&others)	Google Plus	Youtube	Twitter, LinkedIn, MySpace	More than five
Which of the previous ones would you like to be able to use?	70	35	12	8	13	2	0

From the summary statistics for Spain one can conclude the following:

- ✓ Teachers have a minimum of one year of experience in using ICT in teaching process and a maximum of 49 years, whereas for using ICT at the current school, they have indicated a minimum of one year of experience in using ICT at this school and a maximum of 33 years.
- ✓ 51.43% believe that the school provides sufficient digital resources.
- ✓ Only 1.79% of the Macedonian teachers' believe that high proportions of electronic devices are new and modern. The same applies for the quality of electronic devices in Macedonia.
- ✓ 71.43% believe that in Macedonia the schools encourage teachers to use ICT.
- ✓ Higher proportions of teachers in Macedonia (67.14%) believe that the information on the value of the usage of computers in teaching can be improved.
- ✓ Higher proportions of teachers in Macedonia (47.06%) believe that teachers should have trainings each academic year.
- ✓ 73.91% of the professors have claimed that they have taken ICT training at the school that they are working.
- ✓ Social network and strategies for evaluation have the higher percentage (with 46.38% and 52.17% respectively) of professors answering as the most important for them when trained for ICT in Macedonia.
- ✓ 61.43, 7.14 and 7.14 per cent have indicated that the school provides them with PC, tablet, and e-diary, respectively.
- ✓ 100% and 91.43% have indicated that the school has Internet and Wi-Fi, respectively.
- ✓ 94.29% believe that the schools should be adequately equipped for ICT.
- ✓ 69.57% believe that teachers should be trained by government for appropriate usage of ICT.
- ✓ 92.75% believe that ICT has made their teaching easier.
- ✓ Higher percentage use ICT for communicating with students and colleagues (85% and 96% respectively).
- ✓ Whereas for exchanging documents the highest percentage of use of ICT is with colleagues and management staff (96% and 87% respectively).
- ✓ Considering the technological devices:
 - Mostly used in class for the case of Macedonia are shown in Table 2.4. One can notice that 14 out of 70 have indicated to use computers only (20%), and 18 have indicated to use projector and computers, combined (25.7%). 15 (21%) of professors in of Macedonia have indicated to use more than five combined technological devices in class.

- Out of these, most of them would like to be able to use computers (32.8%), digital tables and laptops (10.7%, combined) and electronic notebook and tablets (10.5%, combined).
- ✓ Considering ICT web tools:
 - Mostly used in class for the case of Macedonia are shown in Table 2.5. One can notice that 21 out of 67 have indicated to use Google docs/ Google Drive, Social Network, and others (31.3%, combined), and 11 have indicated to use Sharing tools and Slideshare (16.4%, combined). Only 9 (13.4%) of professors in Macedonia have indicated to use more than five combined ICT web tools in class.
 - Out of these, most of them would like to be able to use Google docs/ Google Drive, Social Network, and others (34.3%, combined), Presentation tools (i.e. Prezi) (113.4%, combined) and Sharing tools and Slideshare (10.4%, combined).
- ✓ Considering Social Networks:
 - Mostly used in class for the case of Macedonia are shown in Table 2.6. One can notice that 24 out of 65 have indicated to use Facebook (37%, combined), and 15 have indicated to use Twitter, LinkedIn, Blog, and MySpace (23%, combined). 11 (16.9%) of professors in Spain have indicated to use more than five combined Social Networks in class.
 - Out of these, most of them would like to be able to use Facebook and others (50%, combined), Blog and others (17.1%, combined) and Youtube (18.5%).

Data Analysis – The case of Turkey

According to our data 73 primary and schools teachers' are interviewed in Turkey. We first provide descriptive statistics for the continuous variable, shown in Table 3.1.

Table 3.1 Descriptive statistics of continuous variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
For how long have you been teaching?	73	18.32	6.73	2	33
For how long have you been teaching in your current school/institution?	73	6.18	4.58	1	18
For how long have you been using ICT to support your teaching-learning process?	73	16.87	7.04	4	25

Following are presented statistics with a Likert scale type of questions that typically contains a labelled option (not a number), starting from the most undesirable response with 0 to the most desirable response with 3. The labelled options are described immediately below the percentages.

Table 3.2 a Descriptive statistics of ordinal variables (different categories of Likert scale)

Variables with scale 0-3,4	Obs.	Fractions (in %)			
		0	1	2	3
Does your school have enough digital and technological resources to work properly?	73	1.37 (I do not use them)	35.62 (Not enough)	54.79 (Enough)	8.22 (A lot)
Are these digital devices/hardware updated?	68	5.88 (Everything is old and slow)	39.71 (The minority of them)	35.29 (The majority of them)	19.12 (Everything is new and modern)

Are these digital devices/hardware of a good quality?	69	1.45 (They are always broken)	50.72 (The minority of them)	34.78 (The majority of them)	13.04 (They always work perfectly)
The School encourages teachers to integrate computers in teaching-learning process.	69	5.48 (No)	28.77 (In some cases)	65.75 (Yes)	/
Teachers are well informed about the value of computers in teaching-learning process in my school	73	1.37 (No)	75.34 (It can be improved)	23.29 (They are doing it well)	/
How often do teachers need to be trained in ICT?	67	28.36 (Once is enough)	41.79 (Every two academic years)	29.85 (Every academic year)	- (Twice a year)
Have you ever received ICT training to be applied in your classroom?	73	7 (Lack of opportunities)	22 (Lack of time)	31.51 (Outside the school)	39.49 (In the school where you work)

On Table 3.2 b, are presented statistics with a Likert scale type of questions that contains a labelled option, starting from the most undesirable response with Nothing/Not important to the most desirable response with Very Important.

Table 3.2 b Descriptive statistics of ordinal variables

When receiving training on ICT for teachers, how important do you find _____.	Obs.	Fractions (in %)				
		Nothing / Not important	Few Import	Quite Import.	Import.	Very Import.
Using tools for e-learning (virtual campus)	73	1.37	9.59	17.81	41.10	30.14

Using other web tools (social networking, blogs, etc.)	73	2.74	4.11	19.18	53.42	20.55
Communication, interaction and tutoring/mentoring strategies	73	4.11	4.11	15.07	52.05	24.66
Evaluation strategies	73	1.37	6.85	15.07	47.95	28.77
Creating content for e-learning	73	2.74	5.48	17.81	49.32	24.66
Planning and didactic design	73	4.11	4.11	16.44	50.68	24.66
Developing activities for specific e-learning contexts	73	1.37	6.85	13.70	53.42	24.66

Following are presented statistics for Yes/No close ended questions.

Table 3.3 Descriptive statistics of dichotomous variables in %

Dummy variables		Obs.	Yes	No
Does the school provide each teacher with ...	PC	73	80.82	19.18
	Tablet	73	27.4	72.6
	Notebook	73	90.41	9.59
Does your school has ...	Internet	73	71.23	28.77
	Wi-Fi	73	80.82	19.18
Do you think educational institutions should be properly equipped on ICT?		73	86.3	13.7
Teachers should be trained by government in order to use ICT properly.		73	79.45	20.55
Have ICT made your teaching easier?		73	91.78	8.22
Do you use ICT to communicate and get in touch with ...	Students	73	43.84	56.16
	Family	73	32.88	67.12
	Teachers	73	91.78	8.22
	Head of Institution	73	86.3	13.7
Do you use ICT to share documents/info with ...	Students	73	54.79	45.21
	Family	73	38.36	61.64
	Teachers	73	97.26	2.74
	Head of Institution	73	90.41	9.59

Table 3.4 Which technological devices do you use the most in your classes, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Computers	Projector	Electronic Board	Computers, Projector, Smart-phones, Electronic Board	Computers, Projector, Tablets, Cameras, Electronic notebook	More than five (Digital table, Laptop)
Which technological devices do you use the most in your classes?	70	10	9 (& Electronic Board)	12	17	7	17
		Computers	Projector	Electronic Board	Digital table, Laptop	Electronic notebook, Tablets	E-books, Camera
Which of the previous ones would you like to be able to use?	70	20 (Projector & Laptop)	15 (Digital table)	8	7	12	8

Table 3.5 Which ICT web tools do you use in your classes, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Google docs/ Google Drive (& Social Network, & others)	Presentati on tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slide-share,	Diigo, Wiki spaces, Scrib	More than five
Which ICT web tools do you use in your classes?	72	22	19	4	2	7	18

		Google docs/ Google Drive (& Presentation tools (i.e. Prezi))	Social Network, (& others	Online Storage (i.e. Dropbox)	Sharing tools, Slide-share,	Wiki spaces, Scrib	More than five
Which of the previous ones would you like to be able to use?	72	23	15	11	10	6	7

Table 3.6 Which of these Social networks do you use with your students, and which ones would you like to be able to use?

Variable	Obs	_____ only and/or combined					
		Facebook	Instagram	Pinterest	Youtube	Twitter, LinkedIn, Blog, MySpace	More than five
Which of these Social networks do you use with your students?	71	28	5	8 (LinkedIn)	11 (&Blog)	12	7
		Facebook (&others)	Blog (&others)	Google Plus	Youtube	Twitter, LinkedIn, MySpace	More than five
Which of the previous ones would you like to be able to use?	70	18	13	6	5	15	3

From the summary statistics for Turkey one can conclude the following:

- ✓ Teachers have a minimum of two years of experience in using ICT in teaching process and a maximum of 33 years, whereas for using ICT at the current school, they have indicated a minimum of one year of experience in using ICT at this school and a maximum of 18 years.
- ✓ 54.79% believe that the school provides sufficient digital resources.
- ✓ 19.12% of the Turkish teachers' believe that high proportions of electronic devices are new and modern. The same applies for the quality of electronic devices in Turkey (13.04%).
- ✓ 65.75% believe that in Turkey the schools encourage teachers to use ICT.
- ✓ Higher proportions of teachers in Turkey (75.34%) believe that the information on the value of the usage of computers in teaching can be improved.
- ✓ Higher proportions of teachers in Turkey (41.79%) believe that teachers should have trainings in two years.
- ✓ Only 39.49% of the professors have claimed that they have taken ICT training at the school that they are working.
- ✓ Social network and different e-learning activities have the higher percentage (both 53.42 per cent) of professors answering as the most important for them when trained for ICT in Turkey.
- ✓ 80.82, 27.4 and 90.41 per cent have indicated that the school provides them with PC, tablet, and e-diary, respectively.
- ✓ 71.23% and 80.82% have indicated that the school has Internet and Wi-Fi, respectively.
- ✓ 86.3% believe that the schools should be adequately equipped for ICT.
- ✓ 79.45% believe that teachers should be trained by government for appropriate usage of ICT.
- ✓ 91.78% believe that ICT has made their teaching easier.
- ✓ Higher percentage use ICT for communicating with colleagues and management staff (91.78 and 86.38% respectively). The same applies for exchanging documents (97.26 and 90.41 respectively).
- ✓ Considering the technological devices:
 - Mostly used in class for the case of Turkey are shown in Table 3.4. One can notice that 10 out of 70 have indicated to use computers only (14.2%), and 9 have indicated to use projector and computers, combined (12.8%). 17 (24.2%) of professors in Turkey have indicated to use more than five combined technological devices in class.

- Out of these, most of them would like to be able to use computers, projector, laptop (28.5%), digital tables and projector (21.4%, combined) and electronic notebook and tablets (17.1%, combined).
- ✓ Considering ICT web tools:
 - Mostly used in class for the case of Turkey are shown in Table 3.5. One can notice that 22 out of 72 have indicated to use Google docs/ Google Drive, Social Network, and others (30.5%, combined), and 19 have indicated to use Presentation tools (i.e. Prezi) (26.4%, combined). 18 (25%) of professors in Turkey have indicated to use more than five combined ICT web tools in class.
 - Out of these, most of them would like to be able to use Google docs/ Google Drive, Social Network, and others (31.9%, combined), Social Network, and others (20.8%, combined) and Online Storage (i.e. Dropbox) (15.3%).
- ✓ Considering Social Networks:
 - Mostly used in class for the case of Spain are shown in Table 3.6. One can notice that 13 out of 49 have indicated to use Facebook (26.5%, combined), and 15 have indicated to use Youtube and Blog (30.6%, combined). 10 (20.4%) of professors in Spain have indicated to use more than five combined Social Networks in class.
 - Out of these, most of them would like to be able to use Facebook (25.7%, combined), Blog and others (18.5%, combined) and Twitter, LinkedIn, and MySpace (21.4%, combined).

Data Analysis – The case of Portugal

According to our data 63 primary and secondary schools teachers' are interviewed in Portugal. We first provide descriptive statistics for the continuous variable, shown in Table 4.1.

Table 4.1 Descriptive statistics of continuous variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
For how long have you been teaching?	63	13.46	5.95	1	28
For how long have you been teaching in your current school/institution?	63	8.33	3.47	3	18
For how long have you been using ICT to support your teaching-learning process?	63	20.16	5.78	4	25

Following are presented statistics with a Likert scale type of questions that typically contains a labelled option (not a number), starting from the most undesirable response with 0 to the most desirable response with 3. The labelled options are described immediately below the percentages.

Table 4.2 a Descriptive statistics of ordinal variables (different categories of Likert scale)

Variables with scale 0-3,4	Obs.	Fractions (in %)			
		0	1	2	3
Does your school have enough digital and technological resources to work properly?	63	30.16 (I do not use them)	3.17 (Not enough)	66.67 (Enough)	- (A lot)
Are these digital devices/hardware updated?	63	6.35 (Everything is old and slow)	19.05 (The minority of them)	46.03 (The majority of them)	28.57 (Everything is new and modern)
Are these digital devices/hardware of a good quality?	63	1.59 (They are always broken)	98.41 (The minority of them)	- (The majority of them)	- (They always work perfectly)

The School encourages teachers to integrate computers in teaching-learning process.	63	11.11 (No)	23.81 (In some cases)	65.08 (Yes)	/
Teachers are well informed about the value of computers in teaching-learning process in my school	63	14.29 (No)	77.78 (It can be improved)	7.94 (They are doing it well)	/
How often do teachers need to be trained in ICT?	62	11.29 (Once is enough)	32.26 (Every two academic years)	24.19 (Every academic year)	32.26 (Twice a year)
Have you ever received ICT training to be applied in your classroom?	63	- (Lack of opportunities)	6.35 (Lack of time)	33.33 (Outside the school)	60.32 (In the school where you work)

On Table 4.2 b, are presented statistics with a Likert scale type of questions that contains a labelled option, starting from the most undesirable response with Nothing/Not important to the most desirable response with Very Important.

Table 4.2 b Descriptive statistics of ordinal variables

When receiving training on ICT for teachers, how important do you find _____.	Obs.	Fractions (in %)				
		Nothing / Not important	Important Few	Important Quite	Important	Important Very
Using tools for e-learning (virtual campus)	63	0	26.98	1.59	49.21	22.22
Using other web tools (social networking, blogs, etc.)	63	0	50.79	4.76	22.22	22.22
Communication, interaction and tutoring/mentoring strategies	63	0	31.75	3.17	42.86	22.22
Evaluation strategies	63	0	61.90	3.17	31.75	3.17
Creating content for e-learning	63	0	34.92	3.17	49.21	12.70

Planning and didactic design	63	9.52	38.10	1.59	36.51	14.29
Developing activities for specific e-learning contexts	63	0	61.90	3.17	28.57	6.35

Following are presented statistics for Yes/No close ended questions.

Table 4.3 Descriptive statistics of dichotomous variables in %

Dummy variables		Obs.	Yes	No
Does the school provide each teacher with ...	PC	63	98.41	1.59
	Tablet	63	26.98	73.02
	Notebook	63	53.97	46.03
Does your school has ...	Internet	63	90.48	9.52
	Wi-Fi	63	90.48	9.52
Do you think educational institutions should be properly equipped on ICT?		63	82.54	17.46
Teachers should be trained by government in order to use ICT properly.		63	90.48	9.52
Have ICT made your teaching easier?		63	90.48	9.52
Do you use ICT to communicate and get in touch with ...	Students	63	100	0
	Family	63	69.84	30.16
	Teachers	63	98.41	1.59
	Head of Institution	63	82.54	17.46
Do you use ICT to share documents/info with ...	Students	63	100	0
	Family	63	69.84	30.16
	Teachers	63	98.41	1.59
	Head of Institution	63	82.54	17.46

Table 4.4 Which technological devices do you use the most in your classes, and which ones would you like to be able to use?

Variable	_____ only and/or combined
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	Obs.	Computers	Projector	Electronic Board	Electronic Board	Computers, Projector, Smart-phones, Electronic Board	Electronic notebook	Computers, Projector, Tablets, Cameras, Electronic notebook	More than five (Digital table, Laptop)
Which technological devices do you use the most in your classes?	62	11 (& Projector)	10 (& Digital table)	6	10	7			18
		Computers	Digital Table	Electronic Board	Tablets, E-books	Electronic notebook		Smartphone	
Which of the previous ones would you like to be able to use?	62	10 (Projector & Laptop)	9 (& Cameras)	10	14	6			13

Table 4.5 Which ICT web tools do you use in your classes, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Google docs/ Google Drive (& Social Network, & others)	Presentation tools (i.e. Prezi)	Online Storage (i.e. Dropbox)	Sharing tools, Slideshare,	Diigo, Wikispaces, Scrib	More than five
Which ICT web tools do you use in your classes?	63	20	19	4	7	6	7

		Google docs/ Google Drive (& Presentation tools (i.e. Prezi))	Social Network, (& others	Online Storage (i.e. Dropbox)	Sharing tools, Slideshare,	Wikispaces, Scrib	More than five
Which of the previous ones would you like to be able to use?	63	16	13	3	10	14	7

Table 4.6 Which of these Social networks do you use with your students, and which ones would you like to be able to use?

Variable	Obs.	_____ only and/or combined					
		Facebook (& Youtube)	Instagram	Pinterest	Youtube (& Google plus)	Twitter, LinkedIn, Blog, MySpace	More than five
Which of these Social networks do you use with your students?	71	18	4	4	14 (& Google plus)	12	19
		Facebook (&others)	Blog (&others)	Google Plus	Pinterest	Twitter, LinkedIn, MySpace	More than five
Which of the previous ones would you like to be able to use?	70	18	11	6	17	15	3

From the summary statistics for Portugal one can conclude the following:

- ✓ Teachers have a minimum of one year of experience in using ICT in teaching process and a maximum of 28 years, whereas for using ICT at the current school, they have indicated a minimum of three years of experience in using ICT at this school and a maximum of 18 years.
- ✓ 66.67% believe that the school provides sufficient digital resources.

- ✓ 28.57% of the Portugal teachers' believe that high proportions of electronic devices are new and modern.
- ✓ Considering the quality of electronic devices, in Portugal 98.41 per cent believes that minority of them are of high quality.
- ✓ 65.08% believe that in Portugal the schools encourage teachers to use ICT.
- ✓ Higher proportions of teachers in Portugal (75.34%) believe that the information on the value of the usage of computers in teaching can be improved.
- ✓ Same proportions of teachers in Portugal (41.79%) believe that teachers should have trainings in two years and/or twice a year.
- ✓ 60.32% of the professors have claimed that they have taken ICT training at the school that they are working.
- ✓ Virtual campus and providing content for e-learning activities have the higher percentage (both 49.21 per cent) of professors answering as the most important for them when trained for ICT in Portugal.
- ✓ 98.41, 26.98, and 53.97 per cent have indicated that the school provides them with PC, tablet, and e-diary, respectively.
- ✓ 90.48 per cent have indicated that the school has Internet and Wi-Fi.
- ✓ 82.54% believe that the schools should be adequately equipped for ICT.
- ✓ 90.48% believe that teachers should be trained by government for appropriate usage of ICT.
- ✓ 90.48% believe that ICT has made their teaching easier.
- ✓ Higher percentage use ICT for communicating with students and colleagues (100% and 98.41% respectively). The same applies for exchanging documents.
- ✓ Considering the technological devices:
 - Mostly used in class for the case of Portugal are shown in Table 4.4. One can notice that 11 out of 62 have indicated to use computers only (17.7%), and 10 have indicated to use projector and digital table, combined (16.1%). 18 (29%) of professors in Portugal have indicated to use more than five combined technological devices in class.
 - Out of these, most of them would like to be able to use computers, projector, laptop (16.1%), tablets and E-books (22.5%, combined) and Smartphone (20.9%).
- ✓ Considering ICT web tools:
 - Mostly used in class for the case of Portugal are shown in Table 4.5. One can notice that 20 out of 63 have indicated to use Google docs/ Google Drive, Social Network, and others (31.7%, combined), and 19 have indicated to use

Presentation tools (i.e. Prezi) (30%). 7 (11.1%) of professors in Turkey have indicated to use more than five combined ICT web tools in class.

- Out of these, most of them would like to be able to use Google docs/ Google Drive, Social Network, and others (25.4%, combined), Social Network, and others (20.6%, combined) and Wikispaces, Scrib (22.2%).
- ✓ Considering Social Networks:
 - Mostly used in class for the case of Portugal are shown in Table 4.6. One can notice that 18 out of 71 have indicated to use Facebook (25.3%), and 14 have indicated to use Youtube and Google plus (19.7%, combined). 19 (27.1%) of professors in Portugal have indicated to use more than five combined Social Networks in class.
 - Out of these, most of them would like to be able to use Facebook (25.7%, combined), Blog and others (15.7%, combined) and Twitter, LinkedIn, and MySpace (21.4%, combined).

Comparative analysis – The final conclusions

For the purpose of comparing the DISCO survey results, in this section we provide comparative analysis for the four countries: (i) Spain, (ii) Macedonia, (iii) Portugal and (iv) Turkey.

Considering the years of experience in teaching process unless Turkey with minimum of two, all the others have a minimum of one and a maximum of 28, 33, 35 and 49 for Portugal, Turkey, Spain and Macedonia respectively.

Considering the experience in teaching process at the current school, both Turkey and Portugal have 18 years, Spain has 28, with Macedonia having the longer period of professors teaching at current school with 33 years of experience.

Whereas considering the years of experience in using ICT in teaching process they have indicated that they have a maximum of 24 for Macedonia, and the rest with 25 years of experience in using ICT.

- ✓ Only 17.65% of professors in Spain believe that the school provides sufficient digital resources, whereas in Macedonia, Turkey and Portugal 51.43%, 54.79%, 66.67% believe that the school provides sufficient digital resources, respectively.
- ✓ Only 1.79% of teachers in Macedonia believe that high proportion of electronic devices are new and modern. This is very low compared to the proportion of new and modern electronic devices in Spain, Turkey and Portugal - 60.42%, 19.12%, 28.57% respectively.
- ✓ Professors in Macedonia believe more that schools encourage teachers to use ICT (71.43%), whereas Spain, Turkey and Portugal have these statistics 64.71%, 65.75%, 65.08% respectively.
- ✓ Considering the technological devices:
 - Portugal, Turkey and Macedonia have indicated to use computers only with 17.7%, 14.2%, 20%, respectively, with Spain having the highest percentage of 24%.
 - Out of these, in Portugal most of them would like to be able to use tablets and E-books (22.5%, combined), in Turkey computers, projector, and laptop (28.5%), in Macedonia and in Spain computers only (32.8% and 30% respectively).

- ✓ Considering ICT web tools:
 - Mostly used in class for the case of Portugal are Google docs/ Google Drive, Social Network, and others (31.7%, combined). The same applies for Turkey, Macedonia and Spain with 30.5%, 31.3% and 26.5% respectively.
 - Out of these, in Portugal, Turkey, Macedonia and Spain most of them would like to be able to use Google docs/ Google Drive, Social Network, and others (25.4%, 30.5%, 34.3% and 30.6% respectively).

- ✓ Considering Social Networks:
 - 27.1% of professors in Portugal have indicated to use more than five combined Social Networks in class; in Turkey and Spain they have indicated to use more YouTube and Blog (30.6%, combined); in Macedonia Facebook with 37%.
 - Out of these, in Portugal, Turkey, Macedonia and Spain most of them would like to be able to use Facebook (25.7%, 30%, 50% and 30.6%).

From the statistics listed above, each partner took the questionnaires' answers and analyzed the characteristics of the digital resources available in their schools and then have decided the next steps of the project. Through this information, the schools have chosen the three case studies to be analyzed by each country and then one case study was chosen as the best one. Also through the analysis of this information, each partner was able to choose the most suitable digital resources to be included in the best practices, considering the resources available in most of the schools in the country.



Case Studies

Case Studies

A good practice project is an activity that successfully achieved its intended outcomes, and had a real and visible impact on the participants, stakeholders and / or community involved. But before starting to plan good practices, a previous audit of outputs is necessary. Every good practice needs a case study. This Case Study will provide enough information about the necessities, resources (human, ICT, economic, etc) and goals achieved throughout the whole process of the Case Study itself. It is divided into five parts. Each part should be carefully developed in order to know and reach the real objectives that will be stipulated on the good practices. This Case Study is addressed to Educational staff (Teachers and school staff) and is also addressed to Schools either Primary either High ones.

For each country, three case studies were done for three schools in each of the partner countries. After this analysis, one school in each country was chosen as the best example found, considering this school the most digital one. Below, we will add the summary table for each one of the schools chosen. The schools chosen were: High School "Dobri Daskalov", in Macedonia; High School "Lope de Vega", in Spain; *High School "Rocha Peixoto"*, in Portugal and the High School "Yusuf Kalkavan Anadolu Lisesi Mersin", in Turkey.

▪ Case Study for Macedonia – High School "Dobri Daskalov"

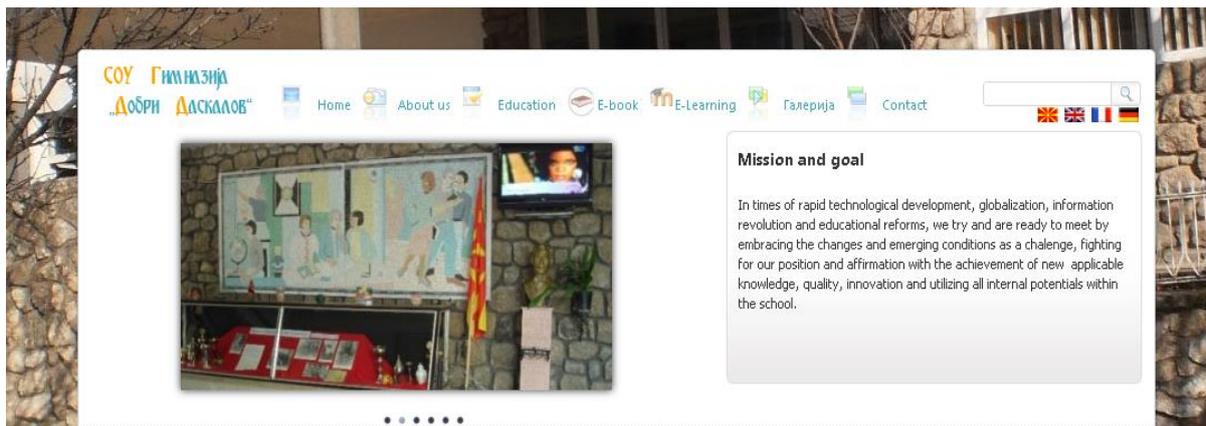
Good Practice - MACEDONIA	
What we were (Review)	<ul style="list-style-type: none"> - Before year 2000, the High School "Dobri Daskalov" from Kavadarci, was equipped with 22 computers, of which 17 were set in the classroom for Informatics and 5 computers were placed for administrative affairs. During that period, the school did not had any laptop or LCD projector. - Students have access to these computers only during the classes for Computer Sciences and Programming Languages. - With the projects GOPA-VET II project (2003), Computer for Every Child" (2008) and the trainings for teachers in using ICT in teaching process, the school increased the number of ICT equipment as well as the number of trained teachers to use it. - Today the school has more classrooms that are fully equipped with ICT equipment, with a stable internet connection, LCD projectors, and teachers who consistently use ICT in teaching.
Where we want to get to (Priorities)	<ul style="list-style-type: none"> - Students have constant access to information during the whole study period. - The school within the project Integration of e-learning in the classroom-iOERc Erasmus + program, is in the process of making the on-line platform for the implementation of activities in certain subjects.

How we planned to get there (Targets)	<ul style="list-style-type: none"> - With regular maintenance and renewal of ICT equipment at the school. - With regular trainings for teachers and their participation in various projects that will gain experience and new ideas concerning the use of ICT in the school.
What we Did (Tasks)	<ul style="list-style-type: none"> - Implement LMS system Moodle for e-learning that is actively used by the students and teachers from the school year 2011/12. The access is provided through the school website www.dobridaskalov.edu.mk, or through the link www.dobridaskalov.edu.mk/moodle. - An interactive whiteboard is incorporated to be used by teachers, through which they have an opportunity together with the students to realize one part of their curricula with the help of information and communication technology.
What we achieve (2nd Review)	<ul style="list-style-type: none"> - All students in the school have a user account for the e-learning system Moodle, so that they can follow the set of uploaded presentations and materials, they can send their homework in the determined deadline, then the teachers can grade them, made quizzes on which the students are immediately assessed and they can also discuss in the created forums on different topics related to the curriculum content. - The application of the above mentioned ICT tools, is increased the desire and motivation in performing everyday tasks from both sides, teachers and students.
What next?	<ul style="list-style-type: none"> - Currently new classrooms are in construction phase within the school that will be equipped with interactive whiteboards and other modern computer equipment. - After completion of the project Integration of e-learning in the classroom - iOERc Erasmus + program, the school will gain access to new on-line platform through which the students will have the opportunity to actively participate in the teaching process.

This table is a summary and it is prepared from the following .pdf document.¹

¹ Case Studies (1st ed.). Retrieved from [http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-](http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf)

[Case-Studies/Case-Studies.pdf](http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf)



▪ Short Description of the School

Namely, the teaching process today is held in new two-floor building where both theoretical and practical lectures are conducted. In the school there are more than 10 classrooms with a computer for every student, internet and informatics, biology, chemistry, physics and art laboratories, all with computers and basic teaching materials. There is a separate room with a computer, DVD, TV, LCD projector, upright piano and a facility used for different presentations, lectures, workshops, meetings and art and culture manifestations.

The school has 66 employees – teachers, professional associates, administrating and teaching personnel. All the employees have appropriate education according to the legal regulations for realization of the pedagogical and educational process. Also in the High School „Dobri Daskalov“ there are 851 students, 325 boys and 526 girls, organized in 28 different classes.

▪ What was the High School „Dobri Daskalov“. (Review)

Before year 2000, the High School "Dobri Daskalov" from Kavadarci, was equipped with 22 computers, of which 17 were set in the classroom for Informatics and 5 computers were placed for administrative affairs. During that period, the school did not had any laptop or LCD projector.

Students have access to these computers only during the classes for Computer Sciences and Programming Languages.

With the projects GOPA-VET II project (2003), "Computer for Every Child" (2008) and the trainings for teachers in using ICT in teaching process, the school increased the number of ICT equipment as well as the number of trained teachers to use it.

Today the school has more classrooms that are fully equipped with ICT equipment, with a stable internet connection, LCD projectors, and teachers who consistently use ICT in teaching.

According to this a better utilization of equipment was obtained. So, the Director together with the coordinator of ICT, following the guidelines of the Ministry of Education and Science of Macedonia, in the school development plan, inserted guidance on the application of ICT in teaching process. From the obtained evaluation, the following was determined:

Internet	The school had broadband Internet access throughout the school, via a cable network in the building.
IT equipment maintenance	Maintenance was carried out on an ad-hoc basis, with no maintenance contract in place. A private company was engaged to deal with occurred problems on a case-by-case basis.
Licensed software	All of the software installed in the computer room was licensed but a full update of the software in use in the school needed to be carried out.
ICT professional development	Most teachers received some ICT certified development, though some of this occurred several years before. This had been delivered through a mixture of subject association meetings, informal help from colleagues
Teachers digital literacy	All teachers indicated that they were able to use personal computers to access the Internet and email, perform basic word processing and enter student results at the end of each term.
ICT usage in teaching process	Some teachers often were using ICT as a teaching and learning tool. Many were using ICT as a teaching resource occasionally. And a few did not use ICT as either a teaching or learning resource at all.
ICT skills	The majority teachers had basic ICT skills, but, many of them lacked the confidence or the knowledge to use these skills to improve learning and teaching in their classrooms.

ICT awareness	Most of the staff recognized the benefits of using ICT in teaching and learning process.
School website	The school had a basic website in place, developed by the ICT coordinating teacher, which was updated on regular basis, but it did not contain specific teaching and learning materials.

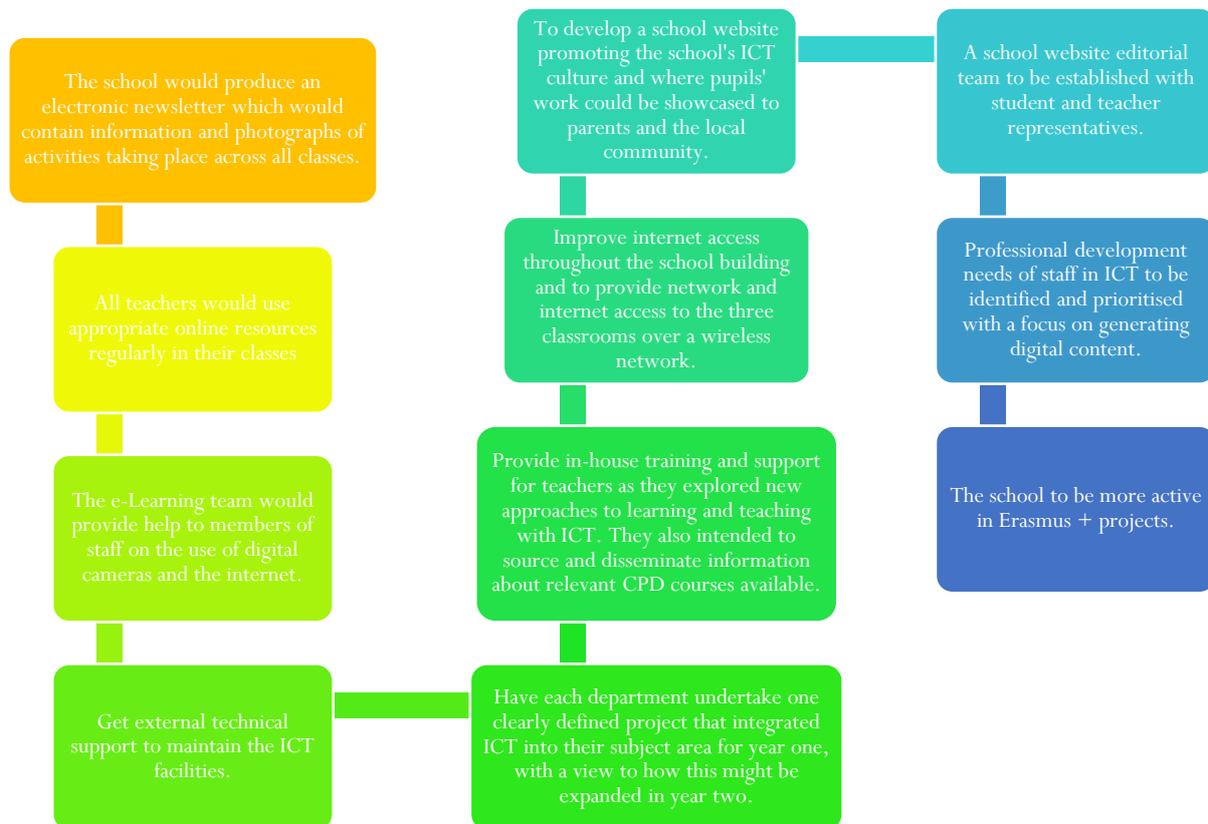
▪ **Where the High School “Dobri Daskalov” want to get to. (Priorities)**

According to the emerging priorities, a team was formed with aim to implement the ICT in the teaching process. The school director led this team together with teachers who are in this sector. The team was guided by the school development plan and the guidelines of the Ministry of Education and outlined the following school priorities:

- ✓ Students would experience e-Learning activities more often.
- ✓ The school website would contain content developed by teachers and students and be used as a communication tool.
- ✓ The school would create and use its own digital content.
- ✓ The school would work towards providing all learning areas with access to a range of ICT equipment, including mobile devices, over the next 5 years.
- ✓ Teachers should acquire the skills to use technologies and to integrate ICT into their teaching methodologies
- ✓ To increase the confidence of teaching staff in the integration of ICT in their subject areas.
- ✓ To procure external technical support so that teachers could focus on integrating ICT rather than trying to resolve technical issues and so that the ICT coordinating teacher can focus on helping teachers integrate ICT rather than maintaining ICT equipment.

▪ **How the High School “Dobri Daskalov” planned to get there (Targets)**

The school director together with the coordinator for ICT, set goals and activities that needs to be achieved or implemented in future. About this issue several times was discussed during the teachers' councils and many other team meetings. The parents were informed too. Some of the decisions were taken from the research done with students, but in accordance with the guidelines and recommendations of the Ministry of Education and the education inspectorate. So, the key targets are:



▪ What the High School “Dobri Daskalov” did (Tasks)

The school increased the amount of ICT equipment available, especially laptops and data projectors for each classroom.

The school organized training through the local education center following identification of CPD requirements in ICT (both skills-based and pedagogical).

The school provide information on ICT professional development to all staff at least once a term.

The school put a maintenance contract in place for technical support.

The school teachers developed a school website. Pupils 'work is showcased on the site and the site is used to inform the wider community about the school. Senior pupils are currently learning how to upload their own work to the website.

The ICT coordinating teacher in the school arranged for the demonstration of ICT equipment in the school. They consulted other schools regarding the use of interactive whiteboards, their cost implications and the use of alternative technologies.

The school incorporated an interactive whiteboard in order to be used by teachers, through which they have an opportunity together with the students to realize one part of their curricula with the help of information and communication technology.

A member of the e-Learning team at school coordinated the production of the newsletter. Senior classes assisted in the layout and production of the published material. All teachers were asked to contribute content, electronically, from their classes.

The school staff began to informally support each other when colleagues experienced difficulties using technology.

The school within the project Integration of e-learning in the classroom-iOERc Erasmus + program, is in the process of making the on-line platform for the implementation of activities in certain subjects.

The school implemented LMS system Moodle for e-learning that is actively used by the students and teachers from the school year 2011/12. The access is provided through the school website www.dobridaskalov.edu.mk, or through the link www.dobridaskalov.edu.mk/moodle.

▪ **What the High School "Dobri Daskalov" achieve (2nd Review)**

Each subject department reviews its e-Learning practice as part of regular subject department meetings. The school website editorial team is in place; the website is updated regularly and contains a growing body of teaching and learning content, information and advice.

Regular and planned technical support has ensured ICT equipment is available as needed almost all of the time. There is an increasing amount of digital content developed by teachers and students and shared within a subject department. Students are showing a greater interest where e-Learning is part of the classroom practice.

There is an increased amount of 'informal' professional development taking place among staff. Teachers' confidence levels in the integration of ICT have increased. ICT has become integral to lesson planning and preparation and teachers feel their confidence has grown considerably. Teachers have noticed an improvement in the standard of pupils' writing and presentation when ICT is used for writing stories, poetry and in the preparation of work for display around the school and on the website. Teachers and pupils no longer see ICT as an add-on but as an essential learning tool and their confidence in using ICT has increased.

Having an ICT technician available on a regular basis removed technical hurdles and allowed teachers to concentrate on ICT integration instead. The ICT coordinating teacher is

spending more time on promoting and supporting e-Learning throughout the school and a smaller proportion of time addressing technical issues. With technical issues no longer the predominant issue, the ICT coordinating teacher was able to concentrate on ICT integration and assisting teachers to organize e-Learning activities.

Overall, this resulted in a gradual but significant shift in the ICT culture within the school. The primary goal of integrating ICT into the curriculum seemed elusive and somewhat daunting to many at the outset, but over the course of the year teachers saw that, through small practical steps, much can be achieved. The process of deciding on and producing content for the newsletter presented many new opportunities for learning in classrooms, much of which involved discussion, collaboration, active learning and creativity. ICT was an integral part of this process. It also presented children with another audience for their work. Parents indicated a greater understanding and appreciation of the work of the school, in many different ways, including e-Learning activities.

Sharing of resources/equipment between local schools was very successful and continues. All students in the school have a user account for the e-learning system Moodle, so that they can follow the set of uploaded presentations and materials, they can send their homework in the determined deadline, then the teachers can grade them, made quizzes on which the students are immediately assessed and they can also discuss in the created forums on different topics related to the curriculum content.

The application of the above mentioned ICT tools, is increased the desire and motivation in performing everyday tasks from teachers and students.

Today the school has more classrooms that are fully equipped with ICT equipment, with a stable internet connection, LCD projectors, and teachers who consistently use ICT in teaching.

▪ **What's next?**

Presently new classrooms are in construction phase within the school that will be equipped with interactive whiteboards and other modern computer equipment. After completion of the project Integration of e-learning in the classroom - iOERc Erasmus + program, the school will gain access to new on-line platform through which the students will have the opportunity to actively participate in the teaching process. Furthermore, teachers are planning to look more closely at the methodologies being used and to explore the possibilities of becoming involved in inter-school collaboration projects. The e-Learning team plans to compile a training and information guide on e-Learning for new or temporary staff. The e-

Learning team will research what courses are available through the local Education Centre or online and make this information available to teachers. There has been a specific request from a number of teachers who would like to learn more about using digital video.

▪ **Case Study for Spain - High School "Lope de Vega".**

Good Practice - SPAIN	
What we were (Review)	<ul style="list-style-type: none"> - Micro-documentaries is an educational project that began to emerge during the course of 2014/15 in matters of 3rd and 4th of Social Sciences at the IES Lope de Vega Fuente Obejuna, Córdoba, whose initiative was the collective Brumaria. - The project responds to a double need. The first is to make progress on innovative methodological approaches such as project learning, use of ICT, assessment rubrics and cooperative work. The second is to try to connect the curriculum with daily life, so that the contents students study can help them understand and relate to the world around them. - For this project, the main equipment at the students' disposal are cameras, laptops and website. This project has managed to increase the use of ICT among pupils and they understand the benefits of its use in the field of education. - With the completion of this project, teachers believe that students have improved their attitudes and their creativity and cooperation.
Where we want to get to (Priorities)	<ul style="list-style-type: none"> - Getting students to improve their knowledge in ICT. - ICT can bring to students new knowledge and permit them to get to know real life.
How we planned to get there (Targets)	<ul style="list-style-type: none"> - Students must do a previous process: choose research topic, search research sources, select people to participate in the project and to be interviewed, find locations where it will be recorded, write the script of the micro, the recording process and editing and assembling. - The project is evaluated through each group blog created for this purpose. - Each group will have to be self-assessed and evaluate another group. They can apply this idea in the classroom.
What we Did (Tasks)	<ul style="list-style-type: none"> - One goal is to increase the amount of ICT equipment available. - Students are able to undertake the production and development of video content with video cameras and ICT - Getting the increase of cooperation among students in the realization of this project.

What we achieve (2nd Review)	<ul style="list-style-type: none"> - After the production and editing of the videos, they are uploaded to the blog and everyone can see this content that may be useful to improve student outcomes. - The website is updated regularly which contains videos projects made by each students
What next?	<ul style="list-style-type: none"> - Teachers consider that these results are very exciting because the project's progress is brilliant.

This table is a summary and it is prepared from the following .pdf document.²



▪ Short Description of the School

The I.E.S Lope De Vega de Fuente-Obejuna caters to pupils from this town and its 14 villages and the nearby town of Los Blazquez. This center you attend around 300 students of the locations described above, of which approximately 50% use busing.

The school has 36 employees – teachers, professional associates, administrating and teaching personnel. All the employees have appropriate education according to the legal regulations for realization

▪ What was the High School “Lope de Vega” (Review)

The Brumaria Collective is composed of teachers of secondary public education that uses audiovisual tools in the classroom in their different subjects. Micro-documentaries combines the introduction of ICT in the classroom and project learning.

²

Case Studies (1st ed.). Retrieved from <http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf>

This project has improved language skills, digital literacy and related learning to learn and autonomy and personal initiative, and better use of ICT by students and teachers.

Today, the center has increased the use of ICT and the use of more equipment for the realization of such projects and creating content through the blog and making videos by students.

Some features of this center regarding the use of ICT in their teaching methodology are:

Internet	The school had broadband Internet access throughout the school, via a cable network and Wi-Fi in the building.
IT equipment maintenance	Maintenance is carried out by staff of the center itself, as well as the public institutions.
Teachers digital literacy	All teachers indicated that they were able to use personal computers to access the Internet and email, perform basic word processing and enter student results at the end of each term.
ICT usage in teaching process	Teachers improve and become familiar in the use of ICT and participate in creating the content.
ICT skills	The majority teachers had basic ICT skills, but, many of them lacked the confidence or the knowledge to use these skills to improve learning and teaching in their classrooms.
ICT awareness	Most of the staff recognized the benefits of using ICT in teaching and learning process.
School website	For this project, it has created a blog that is updated with videos uploaded students throughout the course. In this web all projects are displayed and how to apply this idea in the classroom.

▪ **Where the High School “Lope de Vega” want to get to. (Priorities)**

One of the priorities of this project was to get the students know the real environment where vide through education combining the use and management of ICT in an innovative project that will develop their skills beyond the educational level and work team, responsibility, creativity and knowledge and understanding of life outside the center. The following table shows in summary form some of them:

- ✓ Students would experience e-Learning activities more often.
- ✓ The school website would contain content developed by teachers and students and be used as a communication tool.
- ✓ The creation of the blog has allowed each group of students can upload your own documentary micro and that each project is evaluated by a signature by consensus rubrics with students themselves
- ✓ The school would work towards providing all learning areas with access to a range of ICT equipment, including mobile devices, over the next 5 years.
- ✓ Teachers should acquire the skills to use technologies and to integrate ICT into their teaching methodologies
- ✓ To increase the confidence of teaching staff in the integration of ICT in their subject areas.

▪ **How the High School "Lope de Vega" planned to get there (Targets)**

In order to achieve the objectives sought with this project, it was necessary to integrate these activities into the teaching methodology both the center and more specifically in the departments of Geography and History Center. The main objectives are intended to achieve the plans are as follows:

- Have the necessary project development (laptop, video cameras, Internet and Blog) ICT tools.
- Students should make the whole process of production and development of micro documentaries, in order who managed to improve their skills in various fields.
- For Brumaria group is critical the need for quality public education, free of dull and outdated political interference that can meet the challenges of the young and able to answer your doubts, fears, needs, feelings through use ICT and using their creative abilities.

▪ **What the High School "Lope de Vega" did (Tasks)**

On the one hand, the center has increased the number of available ICT equipment and promoting its good to use in the field of education and that students and teachers can improve and achieve higher levels of cooperation and satisfaction during the educational period.

In addition the center through its website <http://ieslopedevega.es/> reports all the various practices that perform as well as individuals and departments that make up the center. So that parents and students interested should consult the information they need at all times.

On the other hand, the micro documentary project is a new way to integrate the use of ICT in the field of education and in improving accountability and the creative process of the students. Since this project promotes both cooperation between groups of students doing

different documentaries micro since the field work is done mainly outside the center which is also necessary to have the consent of the legal representatives (parents or guardians) so the involvement of the family also has a high importance.

As mentioned above projects are going up the blog created for this purpose <http://microdocumentales.jimdo.com/> First advance innovative methodological approaches such as project learning, use of ICT, assessment rubrics and cooperative work. Secondly we intend to connect the curriculum with daily life, so that the contents can be studied and understood to relate to the world around us and the reality of the students

▪ **What the High School "Lope de Vega" achieve (2nd Review)**

The use of ICT has involved a number of positive changes in this center, which now has its website with basic information about it.

As the project analyzed, this is his blog, which offers students and families need to participate and learn firsthand what the project and their participation in the project, as each group will choose a family to evaluate your project. As each group has to develop a blog post with your project and compliance with the requirements in both the date of publication of the registration and content. For all these details in the blog itself is a [archivo.pdf](#) with the evaluation criteria to be used to evaluate each project. The phase having more weight in percentage terms in the note of students is the script, which includes the entire process of recording making a table in the following sections appear: sequence, description of the same, location, characters, types and recording equipment.

The projects are held for four months and the final video is between five and ten minutes mostly. The results show that the application of these ICT tools in previous sections combined with teamwork, collaboration and cooperation between teachers, students and families, increases the desire and motivation in performing everyday tasks of teachers and students.

Moreover, it has also meant that the school has more classrooms that are fully equipped with ICT equipment, with a stable Internet connection, and teachers who systematically use ICT in teaching.

▪ **What's next?**

Presently, the center has five programs and projects underway:

- Andalusia deepens
- Space School for Peace

- Co-education
- Young form
- Grow with your tree

As for the micro documentary project, teachers consider that this results are very exciting because the project's progress is brilliant.

The success of this project, which has succeeded in developing a new way to assess students by combining the use of ICT with real, everyday life, could be extended to other departments of the center itself or to other centers seeking new ways to enseñanzar to students more in line with the times, trying to bring students to the reality that exists outside the center as well as a further increase and improve their skills in ways that today's businesses demand more as professional profile of future workers to and that if they were inculcated in the educational stage will be easier for students in the future to develop more successfully in both the professional and personal level.

▪ Case Study for Portugal – High School “Rocha Peixoto”

Good Practice - PORTUGAL

What we were (Review)

- In 1997 we had only 3 ICT classrooms equipped with 8 PCs and a printer. We used and thought the following software:
 - a. Windows 3.0
 - b. Microsoft office
 - c. Pascal
 - d. Cobol
 - e. Basic
- The school recognized the importance of digital era and managed to modernize and update the school from that time till now.
- In 2015 the schools ICT inventory included:
 1. ICT Labs equipped with:
 - Video Projector
 - White board
 - Hardware
 - Switching equipment
 - Monitors
 - Computers

- Printers
- Hardware need to maintain the computers
- 2. ICT classrooms (5) equipped with
 - a. 15 Computers
 - b. Video Projector
 - c. Interactive board
- 3. ICT office equipped with:
 - a. 1 Computer
 - b. 1 printer
- 4. Internet access (wireless and by cable)
- 5. Moodle Platform
- 6. RochaDoc Platform
- 7. Following Software
 - a. Programme to register presence/absence of the students, classroom summaries, evaluations etc.
 - b. Windows 7 Professional
 - c. Microsoft Office 2010
 - d. Visual studio 2010
 - e. Avast
 - f. Foxit Read
 - g. Gimp
 - h. Inkscape
 - i. Audacity
 - j. Management software (SAGE)
- 8. PTE Teams (Technological Plan in Education – project developed in 2009 by the Ministry of Education that is supposed to coordinate and supervise all the project related to technological development of the public schools).

<p>Where we want to get to (Priorities)</p>	<ul style="list-style-type: none"> - Encouraging students and teachers to use a variety of ICT platforms in order to motivate learners and improve the learning methodologies. - Maintain students active in order to keep them away from unhealthy and unsuccessful lifestyles by offering a diversity of extracurricular activities. - Make all the class and lesson administration online and eliminate the paper documentation. - Improve the academic results. - Ensure continuous safety and security measures at the school. - Appeal to the high demands, encouraging the improvement of the performance of teachers and students.
<p>How we planned to get there (Targets)</p>	<ul style="list-style-type: none"> - It is relevant to maintain and update all the ICT equipment and software on the regular basis. - Applying for European and National financing to invest in ICT investments and updates. - Have school's ICT technicians cooperate in managing the servers and helping coworkers with ICT difficulties. - Promote the submission of ICT improvement projects by the teachers of each subject group.
<p>What we Did (Tasks)</p>	<ul style="list-style-type: none"> - Moodle and rochadoc platforms have been implemented in the schools in 2009 and from that time on, all school community has been encouraged to use it actively. - Interactive boards have been installed in all classrooms. - Teachers have been provided by the training how to effectively use interactive boards in the classrooms – how to prepare the classes and engage students into using them. - Updated school workshops through agreements with the software companies to sell software licenses cheaper than usual for educative purposes. (They have licenses of programs such as: Powermill, Solidworks, AutoCad and CIMCO).
<p>What we achieve (2nd Review)</p>	<ul style="list-style-type: none"> - All students use ICT platforms freely and are comfortable in doing so (they submit their works, retrieve studying materials and communicate with the teachers on the regular basis) - The great majority of the teachers manages to use interactive boards and associated software regularly. - All school is managed and administrated online (summaries, absence/presence of the students, communication with the parents etc).
<p>What next?</p>	<ul style="list-style-type: none"> - School is planning to remain updated and invest in new software on regular basis in order to provide the students with the necessary tools to become excellent and well-trained professionals. - It is also planned to organize more training for the teachers in order to learn how to use new software and teach it properly to the students.

This table is a summary and it is prepared from the following .pdf document. ³

▪ SHORT DESCRIPTION OF THE SCHOOL



In Praça Luís de camões, in the city of Povia de Varzim, in the North of Portugal, is located the High School of Rocha Peixoto (<http://www.esrpeixoto.edu.pt/>).

It is a public institution for the education of young (and not so young) of the district council community. From the beginning it marked the aim of giving good professional training to the industry and trade servers.

It was first built in 1892 and remains in the same place as it was, however, a modernization of facilities began at the end of the academic year 2007/2008, which allows us to enjoy a larger building area (13 500 m²) that is spread by old and new buildings, including the building reserved for management structures and sports pavilion which is one of the best in town. This remodeling, allowed an increase in occupancy capacity which translated into 10 more classes.

At the moment, Escola Secundária de Rocha Peixoto, has a total of 1663 learners and 200 teachers and staff members. The school has classes from the 7th to the 12th grade including general courses and also vocational courses. The school installations count on:

- | | |
|-------------------------|------------------------------|
| 1 amphitheater | 1 Mathematics Laboratory |
| 2 auditoriums | 1 Chemistry lab |
| 1 Library | 2 Multipurpose laboratories |
| 1 Synthetic Grass Field | 1 Electro-technical Workshop |

³ Case Studies (1st ed.). Retrieved from <http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf>

1 study center	1 Mechanical Workshop
1 Training Centre	1 Pavilion
1 CQEP	1 Swimming pool
1 Psychology Office	31 Classrooms
1 Office for Educational Support	1 Technical Drawing Room
1 Biology Laboratory	3 Visual Education Rooms
1 Electro-technical Laboratory	2 Expressions rooms
1 Physics Laboratory	1 Robotics Room
1 Geology Laboratory	1 ICT Informal Room
4 Computer Labs	1 Administrative service room for students and staff

▪ What was the High School “Rocha Peixoto” (Review)

In 1997 “Rocha Peixoto” had only 3 ICT classrooms equipped with 8 PCs and a printer. The school recognized the importance of digital era and managed to modernize and update the school from that time till now. With continuous maintenance and investing, the school managed to upgrade its inventory. In 2015 it included fully equipped: ICT Labs, ICT classrooms, ICT office. All school buildings have internet Access (either by cable or wireless). The school Works daily with Moodle and RochaDoc platforms to facilitate the date flow between all school communities. Nowadays, the main software used includes: Programme to register presence/absence of the students, classroom summaries, evaluations etc.

- Windows 7 Professional
- Microsoft Office 2010
- Visual studio 2010
- Avast
- Foxit Read
- Gimp
- Inkscape
- Audacity
- Management software (SAGE)

The school has also developed PTE Teams (Technological Plan in Education – project developed in 2009 by the Ministry of Education that is supposed to coordinate and supervise all the project related to technological development of the public schools).

From the obtained evaluation, the following was determined:

Internet	The school had broadband Internet access throughout the school, via a cable network in the building.
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IT equipment maintenance	Maintenance was carried out on a regular and organized basis. ICT teachers and students are responsible for maintain the equipment.
Licensed software	All of the software installed in the computer room was licensed and fully updated.
ICT professional development	Most teachers received some ICT certified development, though some of this occurred several years before. This had been delivered through a mixture of subject association meetings, informal help from colleagues. School has invested in some trainings to help teachers develop basic skills.
Teachers digital literacy	All teachers indicated that they were able to use personal computers to access the Internet and email, perform basic word processing and enter student results at the end of each term.
ICT usage in teaching process	Most of the teachers often were using ICT as a teaching and learning tool.
ICT skills	The majority teachers had basic ICT skills and managed to use them frequently during the classes.
ICT awareness	Most of the staff recognized the benefits of using ICT in teaching and learning process.
School website	The school have quite well organized website, moodle and RochaDoc platforms.

▪ **Where the High School “Rocha Peixoto” wants to get to. (Priorities)**

The school intends to become one of the leading, more developed schools in the country, becoming well-known for its quality installations, varied course offer and also learning innovation.

Considering this, the priorities aimed for the school are:

- Encouraging students and teachers to use a variety of ICT platforms in order to motivate learners and improve the learning methodologies.
- Maintain students active in order to keep them away from unhealthy and unsuccessful lifestyles by offering a diversity of extracurricular activities.

- Make all the class and lesson administration online and eliminate the paper documentation.
 - Improve the academic results.
 - Ensure continuous safety and security measures at the school.
 - Appeal to the high demands, encouraging the improvement of the performance of teachers and students.
- **How the High School “Rocha Peixoto” planned to get there (Targets)**

Escola Secundária de Rocha Peixoto’s director, Albertino Cadilhe, has implemented a system where each course’s teachers have to get together and propose ideas and projects to improve their teaching curricula. Here, they are open to propose a project to the direction of the school that must be justified with the reason for investment, advantages of it, costs, etc. After that, the direction will reunite and decide which investments are valid and how they can obtain investment for them. There is a constant bet on the school to modernize the facilitate, having as much as possible, upgraded ICT platforms in order to approximate the learned contents to the actual job market. Investments in new machinery in the workshops, product licenses like Solidworks, CIMCO, Powermill, AutoCad and more are a constant bet of the school to improve more and more their education quality.

The school realizes that it is through ICT that it will accomplish a better teaching and learning skills so the plan is to keep informed about possible European or National Funds available to be able to apply for financing, however, the school knows that only depending on outside funds will make the development of the school’s projects become delayed so, the school, when classes are ended, rents classrooms, the synthetic football field and the swimming pool to the community for a cost, a little bit lower than the private institutions offering these services.

Also, the teachers will receive training in any ICT tool that is necessary for their job and the school also has ICT technicians that manage all school servers and will help teachers with ICT difficulties.

▪ **What the High School “Rocha Peixoto” did (Tasks)**

In the school years of 2007/2008, ESRP started their renovations and amplification of the school building, making it more modern and bigger. With this big change, there was also a project of improving the ICT tools. Thus, all classrooms were equipped with interactive boards; moodle and rochadocs were installed in order to eliminate paper summary books and encouraging the use of more ICT tools in classrooms. The teachers have had ICT training to properly use these new ICT investments. The school has also implemented an ICT system

throughout the school where everything in the school is done with a personal student or staff card. You can pay for food, drinks, photocopies and other office consumables with your student card that is chargeable at some machine points throughout the schools. This enables parents to control what their child spends and at the same time makes these services at school much faster and of higher quality. The card also enables students to enter and exit the school and parents decide if their child is allowed to leave the school during the day and if they are not allowed the school gatekeeper will see a red light and make the student stay on school premises. It is also a way to ensure student and staff safety, preventing any strangers of being able to enter the premises.

As Rocha Peixoto is the professional technical school and therefore it's extremely important that the technical areas such as for example mechanics using CNC remains updated and that the students may learn how to use the newest programs. The school made an agreement with the software companies to sell software licenses cheaper than usual for educative purposes. (They have licenses of programs such as: Powermill, Solidworks, AutoCad and CIMCO).

▪ **What the High School "Rocha Peixoto" achieved (2nd Review)**

With all the improvements and changes, namely in ICT, all students can use ICT platforms freely and are comfortable in doing so (they submit their works, retrieve studying materials and communicate with the teachers on a regular basis) using moodle and other platforms; the great majority of the teachers manages to use interactive boards and associated software regularly and all the school is managed and administrated online (summaries, absence/presence of the students, communication with the parents etc)

Escola Secundária has also had External evaluation in 2013/2014 and the school is proud to have been recognized for their commitment and the work that has developed, managed to achieve in all assessment areas - Results, Provision of Educational Services, and Leadership and Management - the VERY GOOD rating. In this context we recall the importance of the involvement of everyone, including through suggestions for the plan to improve our school (for this purpose they invite everyone to fill the respective role of suggestions to deposit in the ballot box available for this).

▪ **What's next?**

To continue to have a quality education system at the school, Escola Secundária de Rocha Peixoto intends to continue investing in ICT tools to continue motivating students to learn more and at the same time contribute to the decrease of school dropouts.

The school plans to remain updated and invest in new software on regular basis in order to provide the students with the necessary tools to become excellent and well-trained professionals.

It is also planned to organize more training for the teachers in order to learn how to use new and more advanced software and teach it properly to the students.

▪ **Case Study for Turkey - Yusuf Kalkavan Anadolu Lisesi Mersin**

Good Practice - TURKEY	
What we were (Review)	<ul style="list-style-type: none"> - The school was opened in 1992 and since then there has been lots of changes in the digital status of the school. The World Bank supported Basic Education Project implemented between 1998 and 2004 aimed to improve basic education quality by providing computer labs and educational materials to schools and the school had a computer lab as a result of this project. There were 22 computers in the Informatics classrooms and the students had two hour lessons during the week. - During those years the teachers were trained about basic educational use of the computers. However, insufficient computer software was provided to the schools; the actual courses taught by the ICT trainers were limited to laboratories and focused on basic computer skills. Additionally, subject teachers were not trained in how to integrate computers into their subject teaching. So the Informatics classrooms were gradually closed in all the schools in Turkey.
Where we want to get to (Priorities)	<ul style="list-style-type: none"> - Then in 2010 Turkey has embarked on one of the world's largest educational technology projects: The Fatih project. Each student was given a tablet computer and interactive whiteboards were installed in every classroom. Eba is web platform organized by MoNe and we want to enable teachers use the necessary software to be able to prepare appropriate content by themselves as compatible with the technologies provided.
How we planned to get there (Targets)	<ul style="list-style-type: none"> - All the teachers at school attended in-service teacher training programs organized by MoNe. They were from different backgrounds (technological abilities, attitudes towards the integration of educational technology, age and subject areas) but nearly all of them have had the same training so far.
What we Did (Tasks)	<ul style="list-style-type: none"> - Increase the amount of ICT equipment available, especially laptops and data projectors for each classrooms. - We encouraged all the teachers and the students to use EBA platform actively. http://www.eba.gov.tr/

**What we achieve
 (2nd Review)**

- The school website editorial team is in place; the website is updated regularly and contains information and advice.
- Students are showing a greater interest where e- Learning is part of the classroom practice. Teachers’ confidence level in the integration of ICT have increased

What next?

- Plan and conduct long-term studies about the effects of the educational technologies on student achievement.
- Decrease the number of students in classrooms to have a more effective use of technologies provided.

This table is a summary and it is prepared from the following .pdf document. [4](#)

▪ **SHORT DESCRIPTION OF THE SCHOOL**



Yusuf Kalkavan Anatolian High School, commonly referred to Yusuf Kalkavan Anadolu Lisesi, abbreviated Y.K.A.L, is a Turkish public high school in Mersin. It is one of the most competitive public high schools in Mersin, sending more students to some of the nation's most prestigious universities than most other public or private schools in the city. The school admits their students based on the Nationwide High School Entrance score. The education languages are Turkish, English and German. YKAL was opened in 1992 in the region of Mezitli.

There are 950 students and 55 teachers in our school. There are 30 classrooms each has a smart board of Fatih Project. Each student from 9th, 10th and 11th grade students has a tablet. The tablets has internet connection at school. The students can reach EBA (<http://www.eba.gov.tr/>) any time they want. They can reach lots of different kinds of information in the EBA platform. Today nearly all the teachers try to use the platform during the classes.

▪ **What we were (Review)**

[4](#) Case Studies (1st ed.). Retrieved from <http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf>

The school was opened in 1992 and since then there has been lots of changes in the digital status of the school. The World Bank supported Basic Education Project implemented between 1998 and 2004 aimed to improve basic education quality by providing computer labs and educational materials to schools and the school had a computer lab as a result of this project. There were 22 computers in the Informatics classrooms and the students had two hours lessons during the week.

During those years the teachers were trained about basic educational use of the computers. However, insufficient computer software was provided to the schools; the actual courses taught by the ICT trainers were limited to laboratories and focused on basic computer skills. Additionally, subject teachers were not trained in how to integrate computers into their subject teaching. So the Informatics classrooms were gradually closed in all the schools in Turkey.

Internet: The school had broadband Internet access throughout the school, via a cable network in the building.

IT equipment maintenance: Technical support included both computer-related issues and electrical wiring in the building, however the school had some problems, e.g "electrical wiring in the building was not designed for many computers in the room. Therefore, these issues are inevitable. In addition, due to the inconsistencies in electrical current, operating systems in the labs crash and they couldn't get technical support quickly. Moreover, they could not get them fixed since they did not have an adequate budget. Consequently, these computers were no longer functional.

ICT professional development: During those years the teachers were trained about basic educational use of the computers. The school had a computer coordinator. Depending on the on-going changes in computer technologies, computer coordinators were seldom invited for in-service training for their professional development.

Teachers digital literacy: All teachers indicated that they were able to use personal computers to access the Internet and email, perform basic word processing and enter student results at the end of each term.

ICT usage in teaching process: Schools were provided with software and videocassettes, in addition to the hardware tools in IT classrooms. Most of the teachers used ICT classrooms one or twice a week.

ICT skills: The majority of teachers had basic ICT skills, but, many of them lacked the confidence or the knowledge to use these skills to improve learning and teaching in their classrooms.

ICT awareness Most of the staff recognized the benefits of using ICT in teaching and learning process. They attended all the in-service training courses for teachers.

School website The school had a basic website in place, developed by the ICT coordinating teacher, which was updated on regular basis, but it did not contain specific teaching and learning materials.

▪ **Where we want to get to (Priorities)**

Then in 2010 Turkey has embarked on one of the world's largest educational technology projects: The Fatih project. Each student was given a tablet computer and interactive whiteboards were installed in every classroom. . It is found out that providing Tablet PCs to the teachers and students with a limited use of internet inside the school and a lack of internet connection outside the school diminishes the interest towards the use of these Tablet PCs but the students can reach EBA at school and outside the school anytime they need. It is web platform organized by MoNe and we want to enable teachers use the necessary software to be able to prepare appropriate content by themselves as compatible with the technologies provided.

▪ **How we planned to get there (Targets)**

All the teachers at school attended in-service teacher training programs organized by MoNe. They were from different backgrounds (technological abilities, attitudes towards the integration of educational technology, age and subject areas) but nearly all of them have had the same training so far.

▪ **What we Did (Tasks)**

Increase the amount of ICT equipment available, especially laptops and data projectors for each classroom.

We encouraged all the teachers and the students to use EBA platform actively. <http://www.eba.gov.tr/> Eba is web platform organized by MoNe. It is one of the outcomes of the Fatih Project. In Eba one can find lots of resources, documentaries, videos, information, e books, e magazines. Students can find e-course contents, testing for themselves.

▪ **What we achieve (2nd Review)**

The school website editorial team is in place; the website is updated regularly and contains information and advice.

Students are showing a greater interest where e-Learning is part of the classroom practice.

Teachers' confidence level in the integration of ICT have increased. Teachers are trained about how to use the technologies provided to them within the context of the FATİH Project in addition to receiving technical and any kind of supportive services. However, the key issue for implementing the process appropriately is that the teachers and students must believe in the potential benefits of using Tablet PCs and IBs .Therefore, there is a need for teachers and students who took part in the project to show what kinds of contribution the technologies provided for the sake of the project would make to them during the process of teaching and learning through the demonstration of exemplary studies and models.

It would be concluded that there is an obvious increase in the interests and attitudes of teachers and students towards the use and getting benefit of technology since the beginning of the project's pilot. One of the positive outcomes of the project is the increase of communication and collaboration especially in technical issues between teachers and students. With the integration of IBs into education, not all but most of the classrooms experienced a more joyful and audio-visual lessons as one of the most important constructive consequences of the project. However, it is hard to say so regarding the use of Table PCs in the classroom as there are some concerns about the negative impact of Tablet PCs in some cases.

▪ **What's next?**

Plan and conduct long-term studies about the effects of the educational technologies on student achievement.

Decrease the number of students in classrooms to have a more effective use of technologies provided.



Best Practices

Best Practices

Below, the 20 best practices chosen by all partners will be listed. The final five best practices, per country are: for Macedonia - Celestia, Hot Potatoes, GeoGebra, Scratch and Google Forms; for Spain - Dropbox, Prezi, IBM SPSS; Audacity and Wix; for Portugal - Animoto, Storybird, Edmodo, Kahoot and Kodu; and finally for Turkey – Slides, Capzle, Creaza, Powtoon and Voki.

A brief and simple explanation for the use of each tool is provided below as well as some links of tutorials, videos and further sources of information on them.

▪ CELESTIA



Keywords: Geography, ICT, Classroom, Education

Description: Celestia provides photo-realistic, real-time, three-dimensional viewing of the Solar System, the galaxy and the universe. It is an easy to use, freely-distributed, multi-platform, open source, software package which has become a valuable tool for astronomy education. Used in homes, schools, museums and planetariums around the world, it also is used as a visualization tool by space mission designers. Versions are available for computers running Windows, Macintosh (Mac OS X) and Linux operating systems.

Resources required: Computers.

More about Celestia:

<http://www.shatters.net/celestia/documentation.html>

Examples:

https://www.youtube.com/watch?v=1iNE_J8DHvU

<https://www.youtube.com/watch?v=bnzUsWmNwEM>

https://www.youtube.com/watch?v=JV_ru_tKsSQ

▪ HOT POTATOES



Keywords: Languages, ICT, Classroom, Education

Description: The Hot Potatoes site includes six applications, enabling you to create interactive multiple-choice, short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for the World Wide Web

Resources required: Computers.

More about Hot Potatoes:

<https://hotpot.uvic.ca/tutorials6.php>

Examples:

<https://www.youtube.com/watch?v=Aq4NnIFtAk>

<https://www.youtube.com/watch?v=Grd8-MCqp9A>

<https://www.youtube.com/watch?v=2FVKEyeK8Gk>

<https://www.youtube.com/watch?v=P63djch0SJ8>

▪ GEOGEBRA



Keywords: Math, ICT, software, school

Description: GeoGebra is dynamic mathematics software for all levels of education that brings together geometry, algebra, spreadsheets, graphing, statistics and calculus in one easy-to-use package. GeoGebra is a rapidly expanding community of millions of users located in just about every country. GeoGebra has become the leading provider of dynamic mathematics software, supporting science, technology, engineering and mathematics (STEM) education and innovations in teaching and learning worldwide.

Resources required: Computers.

More about GeoGebra:

<http://www.geogebra.org/manual/en/Tutorials>

Examples:

<http://tube.geogebra.org>

▪ SCRATCH



Keywords: stories, games, and animations, ICT, Classroom, Education

Description: Scratch is designed with learning and education in mind. A wide variety of educators have been supporting Scratch creators since 2007, in both formal and informal learning environments – K-12 classroom teachers, educational and computer science researchers, librarians, museum educators, and parents.

Resources required: Computers.

More about Scratch:

<http://scratched.gse.harvard.edu/resources/new-scratch>

Examples:

<https://scratch.mit.edu>

<https://www.youtube.com/watch?v=1eXsMyHflaw>

<https://www.youtube.com/watch?v=ACytfqYG9E>

<https://www.youtube.com/watch?v=PUkhYBefim4>

<https://www.youtube.com/watch?v=bVVppcrSbtQ>

▪ DROPBOX



Keywords: stored files manually, synchronize and share files, web.

Description: Dropbox is a service where multiplatform files are kept and compiled in the cloud. It allows to the users store and synchronize files online and between different computers too. The application allows too share files and folders with other users using devices like tablets or mobiles. Files sent by email to your folder.

Resources required: Computer, internet, mobile.

More about Dropbox:

<https://www.youtube.com/watch?v=58wPFgzBnqo>

<https://www.youtube.com/watch?v=gc9mrcVxcXg>

Examples:

<http://www.darkreading.com/attacks-and-breaches/dropbox-in-the-classroom-4-great-uses/d/d-id/1109359>

▪ GOOGLE FORMS



Keywords: opinion poll, surveys, quiz, ICT, Classroom, Education

Description: Manage event registrations, whip up a quick opinion poll, collect email addresses for a newsletter, create a pop quiz, and much more. With Google Forms, you can create and analyze surveys right in your web browser—no special software is required. Even better, multiple people can work at the same time, and every change is saved automatically.

Resources required: Computers, Internet.

More about Google forms:

<https://apps.google.com/learning-center/products/forms/get-started/>

Examples:

<https://sites.google.com/site/mydigitalfootprint/innovative-ideas-for-using-google-forms>

https://docs.google.com/presentation/d/1f4HDe3dUGr4Ftx4d6EbkFzq_Ei7RjfwVp2DW2QLGmM/edit#slide=id.i0

<http://www.educatorstechnology.com/2012/07/10-great-free-google-forms-every.html>

<http://edte.ch/blog/2008/08/23/10-google-forms-for-the-classroom/>

▪ PREZI



Keywords: share ideas, virtual presentation tool, images, and video.

Description: Prezi is a presentations' program to explore and share ideas on a virtual document based on the computer science in cloud. It is an application that it has a graphical interface with zoom. It's very suitable to expose the contents to the public. It's a combination of images, videos, music and text to explain a topic. Students can organize the information compiled.

More about Prezi:

<https://www.youtube.com/watch?v=Zuz3OngGzh4>

<https://www.youtube.com/watch?v=7Wq7Eomw1r0>

Examples:

<http://oregonstate.edu/tac/how-to-use/prezi-examples>

<http://www.ed.ac.uk/information-services/help-consultancy/is-skills/catalogue/posters-presentations-catalogue/prezi>

▪ IBM SPSS



Keywords: input data, output data, analyses.

Description: SPSS is a statistical program very used in the exact, social and applied sciences, besides the companies of market research. It has the aptitude to work with big databases and simply interface for the majority of the analyses. It can be used to evaluate educational questions. It has a files' system in which the principal one they are data files. Fulfillment of basic calculation (Analysis of descriptive statisticians).

Resources required: Computer, internet (optional), databases.

More about IBM SPSS:

<https://www.youtube.com/watch?v=1jKxibzOD88>

https://www.youtube.com/watch?v=ADDR3_Ng5CA

Examples:

<https://www-01.ibm.com/software/analytics/spss/academic/programs/index.html>

https://www-01.ibm.com/software/analytics/training-and-certification/classroom_training.html

<http://www-03.ibm.com/software/products/en/spss-stats-gradpack>

▪ AUDACITY



Keywords: Computer, Podcasting.

Description: Audacity lets you record sounds that can be integrated or not in other programs. Students can create stories, readings, presentation etc. This tool enable to development of speech, listening, creativity and awareness of self-expression in students.

Resources required: Computer, Internet, Headphone, Microphone.

More about Audacity:

https://www.youtube.com/watch?v=x_pmnRmpiaY

http://wiki.audacityteam.org/wiki/Audacity_in_Education

Examples:

<https://sites.google.com/site/audacityclassroom/>

▪ WIX



Keywords: Internet, Resources, web designing, free.

Description: Wix is a tool, an online editor that lets you create and publish a flash website indexed in search engines, for free. With it you can make presentations of several hyperlinked pages, add Web links, music. Is an excellent tool for students because of they improve the use of ICT and create a website easily.

Resources required: Computer, Internet.

More about WIX:

https://www.youtube.com/watch?v=bO3rL_-w-Zw

<http://www.top10bestwebsitebuilders.com/how-to-create-a-website/free/using-wix-to-make-free-websites-for-teachers>

Examples:

<http://fterensi.wix.com/flauta%C2%ADtitanic>

▪ ANIMOTO



Keywords: Videos, Photo Slide Shows, Innovative Learning.

Description: Animoto is a video-creation tool that teachers and pupils can use to make dynamic videos, either for the classroom or special school events. If you upload images, text, video and music, "animoto" will automatically composite your ingredients, creating a presentation in minutes. Educators can apply for a free account.

Resources required: Cameras, computers, smart phones or tablets and Internet.

More about Animoto:

<https://animoto.com/education/classroom>

http://eraizes.ipsantarem.pt/moodle/pluginfile.php/26123/mod_resource/content/4/Como%20criar%20editar%20e%20finalizar%20um%20video.pdf

Examples:

<https://www.youtube.com/user/Animoto>

https://www.youtube.com/watch?v=LKn_3jOKCd8

<https://www.youtube.com/watch?v=mjxT9HLR4LU>

<https://www.youtube.com/watch?v=tqEaQdhtnOk>

▪ STORYBIRD



Keywords: picture books, long form chapter books, poetry, motivating reading and writing.

Description: This is a unique language arts tool. Illustrations are used to inspire students to write stories. Here, hundreds of high-quality artist illustrations are available, which pupils can use to illustrate their own e-book. Users are not required to register via using an e-mail address, being accessible to younger pupils.

Resources required: Computers and Internet.

More about Storybird:

<https://storybird.com/about/>

Examples:

<https://www.youtube.com/watch?v=T00YjRB1clw>

<https://www.youtube.com/watch?v=6eUYpigHWho>

<https://www.youtube.com/watch?v=ST2ZCtw18wo>

<https://www.youtube.com/watch?v=WftDsfzDD7A>

▪ EDMODO



Keywords: Easy communication, sharing, quizzes, assignments.

Description: Edmodo is an easy introduction into eLearning systems, create classes, discussion, give and receive assignments, keep track of grades. The Edmodo network enables teachers to share content, distribute quizzes, assignments, and manage communication with students, colleagues, and parents. Best of all, it's FREE - which comes with some limitations.

Resources required: Computers, smart phones or tablets and Internet.

More about Edmodo:

<http://www.educatorstechnology.com/2013/06/a-handy-guide-to-everything-teachers.html>

<http://www.teachertrainingvideos.com/edmodo-moodle/edmodo.html>

<https://www.youtube.com/watch?v=zzXt4PqZvd0>

Examples:

<https://www.youtube.com/watch?v=DZHB6FfRjnQ>

<https://www.youtube.com/watch?v=v8l5SAtXBBs>

▪ KAHOOT!



Keywords: multiple choice, quiz, survey, discussion, motivated learning.

Description: This online platform enables the creation of fun classroom games, from a series of multiple choice questions under the form of discussion, quiz or survey. It is also possible to add videos, images and diagrams to add motivation to the game. "kahoots" are best played in a group like a classroom, where players will answer the questions on their own devices, while the games are displayed on a shared screen, encouraging players to look up at the screen. Finally, you can share the outcomes on social media to promote and disseminate contents learned.

Resources required: Internet, computers, smartphones or tablets and projector.

More about Kahoot:

<https://getkahoot.com/blog/kahoot-creator>

Examples:

<https://getkahoot.com/blog/kahoot-masterclass-video>

https://www.youtube.com/watch?v=pFFv6_6was4

<https://www.youtube.com/watch?v=5mRzrjbM6aw>

<https://www.youtube.com/watch?v=wVW2ucTdjJI>

▪ KODU



Keywords: Creativity, problem solving, programming, storytelling.

Description: Kodu lets kids create games on the PC and Xbox via a simple visual programming language. Kodu can be used to teach creativity, problem solving, storytelling, as well as programming. Anyone can use Kodu to make a game, young children as well as adults with no design or programming skills. Kodu for the PC is available to download for free.

Resources required: Computers, smart phones or tablets and Internet.

More about Kodu:

<http://www.kodugamelab.com/resources/>

<https://www.microsoft.com/en-us/research/project/kodu/>

Examples:

<https://www.youtube.com/watch?v=eZ5EVicSOU0>

https://www.youtube.com/watch?v=jg_jeN5AcPs

https://www.youtube.com/watch?v=IHwg_Z5uTo0

<https://www.youtube.com/watch?v=7dMoVaPQnfs>

<https://www.youtube.com/watch?v=a5hmqDYkW1I>

▪ **SLIDES**



Keywords: presentation, sharing, assignments.

Description: A slide is a single page of a presentation created with software such as PowerPoint or OpenOffice Impress. A presentation is composed of several slides. The best presentations use approximately ten to twelve slides to get the message across. Whether you speak at a conference, host a meeting, or just send your deck out by email, your story is conveyed in the beauty in which it was crafted. You can also export a PDF and share or print it for your audience.

Resources required: Computers, smart phones or tablets and Internet.

More about Slides:

<https://slides.com/>

Examples:

<http://slides.com/news/embed#/>

▪ **CAPZLES**



Keywords: photos, videos, sharing, assignments.

Description: There are so many different ways that Capzles can be used in the classroom, there's bound to be an application that fits your needs. What does it do? Capzles makes it simple to gather media like photos, videos, documents, and even blog posts into one place, making it perfect for teaching, learning, or online projects.

With Capzles, you can upload images, MP3s, Word, Excel, PowerPoint, and PDF files. You can also "Blog" directly into your timeline so you don't have to worry about having premade

documents ready to upload. Capzles allows you to do this in a few ways. With each upload, it creates a moment in your timeline. Depending on which option you select, determines proper organization.

Resources required: Computers, smart phones or tablets and Internet.

More about Capzles:

<http://www.capzles.com/>

Examples:

https://www.youtube.com/watch?v=hR_21MeVeqQ

<https://www.youtube.com/watch?v=ETIrg-ZD3rE>

▪ POWTOON



Keywords: Easy communication, sharing, video, animations, assignments.

Description: You can create animated videos and animated presentations for free. PowToon is a tool that allows you to develop cool animated clips and animated presentations for your website, office meeting, lessons video resume, or anything else you could use an animated explainer video. PowToon's animation templates help you create animated presentations and animated explainer videos from scratch. Anyone can produce awesome animations quickly with PowToon, without the cost or hassle other professional animation services require.

Resources required: Computers, smart phones or tablets and Internet.

More about Powtoon:

<https://www.powtoon.com/>

Examples:

<https://www.powtoon.com/tutorials/>

<https://www.youtube.com/watch?v=xAyVFzcgkFA>

▪ VOKI



Keywords: Easy communication, sharing, assignments.

Description: Voki is an educational tool that allows users to create their very own talking character. Voki is created by Oddcast and is located in New York City.

Voki characters can be customized to look like historical figures, cartoons, animals, and even yourself! Give your Voki a voice by recording with a microphone, using our dial-in number,

or uploading an audio file. Voki characters can be emailed, shared on social media, and embedded on websites.

Voki is a combination of the words "vox" and "Loki". "Vox" is the Latin term for voice. Loki is a Norse god from Norse mythology. Loki is a trickster who has the ability to change his shape. Fitting name since Voki gives students and teachers the ability to change the character's appearance and add a voice!

Resources required: Computers, smart phones or tablets and Internet.

More about Voki:

<http://www.voki.com/site/create>

Examples:

<https://www.youtube.com/watch?v=FunBew6S4Bk>

<https://www.youtube.com/watch?v=uErsvV9hheQ>

<http://mrspilver.wikispaces.com/Dairy+of+a+Wimpy+Kid>

<http://mcmillingate.edublogs.org/category/inquiry/global-warming-inquiry/>

▪ **Creaza**



Keywords: Easy communication, sharing, presentation, ICT, mind maps

Description –Creaza is a digital learning tool that enables students to work with different subjects and topics by creating mind maps, presentations, comic strips, movies, and audio productions.

Creaza consists of four unique tools. Creaza also contains hundreds of ready-made exercises related to different subjects, topics, and curricula. Teachers can easily assign these exercises to their students by clicking the "Assign" button. They can edit and adjust the exercise's title and description, set a due date, and add media files that the students can use.

Resources required –Computers, smart phones or tablets and Internet.

More - <http://www.creaza.com/home>

Examples- <https://www.youtube.com/watch?v=XtGaBFUtFmg>

<https://www.youtube.com/watch?v=eaaytqYAUuE&list=PLAD07FFF88EB66018&index=8>

<https://www.youtube.com/watch?v=NgnNjbYJA1s>



Training Materials

Training material on methodology in ICT integration in education

A teacher's training was a part of this project, therefore, each partner was given a theme to prepare for the training and responsible for creating the training session and materials for the theme. There were five themes distributed between the partners, which were: E-learning platform + Virtual campus – Spain; Web 2.0 ID – Spain; Strategy for evaluation – Macedonia; Digital resources – Portugal and Social networks – Turkey.

Given these categories, the contents were chosen and organized as follows: Trello; Slack; Moodle; Google Drive; WIX; MindMap; Social Networks; and Strategy for Evaluation.

1. TRELLO

a. Training Session - TRELLO

Session 5.1		Managing Tasks: Trello	
Duration:	75 min		
General Objective:	Learning how to manage tasks with Trello		
Specific Objectives:	The learners to be able to: <ul style="list-style-type: none"> • To have their own management system • To know how to use the management system for managing tasks • To learn how to share the board for managing tasks and collaborate on it 		
Materials needed:	Pc and Internet Supporting documentation: <ul style="list-style-type: none"> • Content for Trello 		
Specific Objective and Content		Learning methods and duration	
1. Create an account on Trello. 2. Create a board for managing tasks 3. Add members to your board and collaborate with them on managing tasks		1. Students knowledge diagnosis about the topic to deal with (5 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (5 minutes.) 3. Theoretical presentation of the training content of the session (30 minutes.) The tutor will introduce the Trello, a tool for managing tasks by using the same tool and explaining the process step by step. During the presentation, they will ask some	

questions to the students to test the monitoring of the explanation.

4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (30 minutes.)

5. Sharing of ideas about the activity done (5 minutes.)

b. Training Materials - TRELLO

Trello is a **collaborative application for managing tasks** in projects. Its strong points are:

- Completely **visual** tool: no complex menus, no advanced features.
- Versatility through simplicity: Trello has just a few features, but the possible combinations of its usage makes it truly powerful.

You can use Trello to manage any kind of project: whether it's a technical one or not, for big teams or just for yourself.

To start using Trello, you have to enter <http://trello.com> where you'll be welcomed by the following screen:



Work with perspective

Trello helps teams of all sizes work collaboratively to get more done.

[Sign Up - It's Free.](#)

[Log in...](#)

We click on *Sign Up* to create our account.

Create a Trello Account

Name

e.g., Guybrush Threepwood

Email

e.g., mightypirate@grogmail.com

Password

e.g.,

Create New Account

Do you have a Google Account?

Sign up with Google

Already have an account? [Log in.](#)

The only thing we need is a name, our email and a password. We can also sign in using a **Google Account** if we have one.

Once we're inside we'll see our dashboard, where we will see all the boards we have available. A **board represents a project** in which we will create a series of lists and tasks.

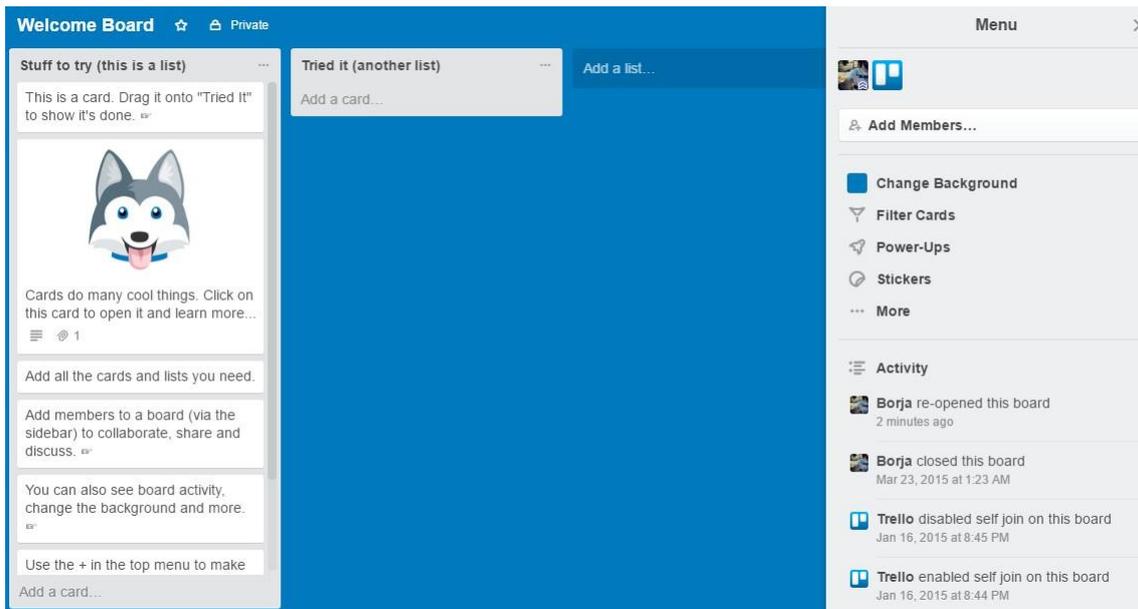
☆ Starred Boards

👤 My Boards

Welcome Board

Create new board...

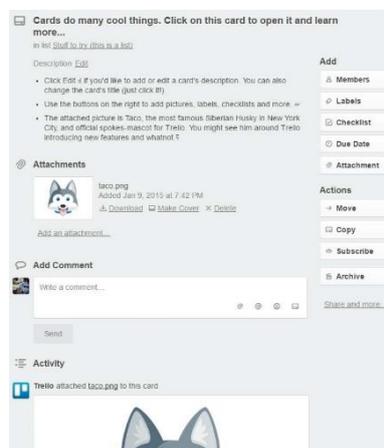
Our default board is the *Welcome Board*, which will serve as an example. If we go inside we'll see the interface of a board:



The gray, long boxes are lists. A list contains a set of tasks, called **cards**. To the right we have the *menu*, where we can change some settings of the board (like the background), add more people to collaborate or see the activity with the recent changes.

We can add a new list or a new card by click on the **Add a list** or **Add a card** links, respectively. For both of them we only have to provide a name.

If we click on a card the following window will open:



We can change the description of the task to give it a more detailed explanation. Members of the board can add comments and have a discussion here.

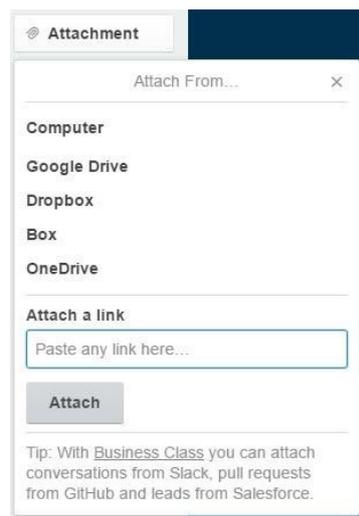
If we click on the *Members* button we can add a member of the board to this task, so they will be subscribed to its activity and receive notifications when changes happen.

We can also add labels that will give special colors and tags to the card.

If the task have subtasks, we can add a *checklist*.

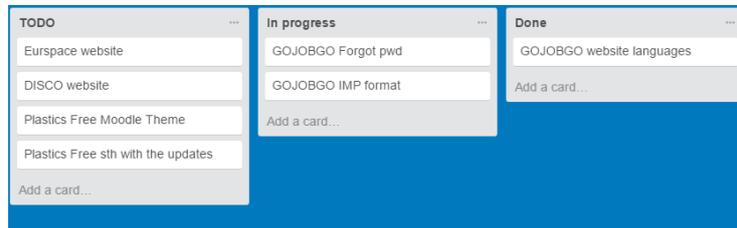


We can set the date the task will have to be finished by with *due date*. Finally, we can add an attachment, which can be one of the following:

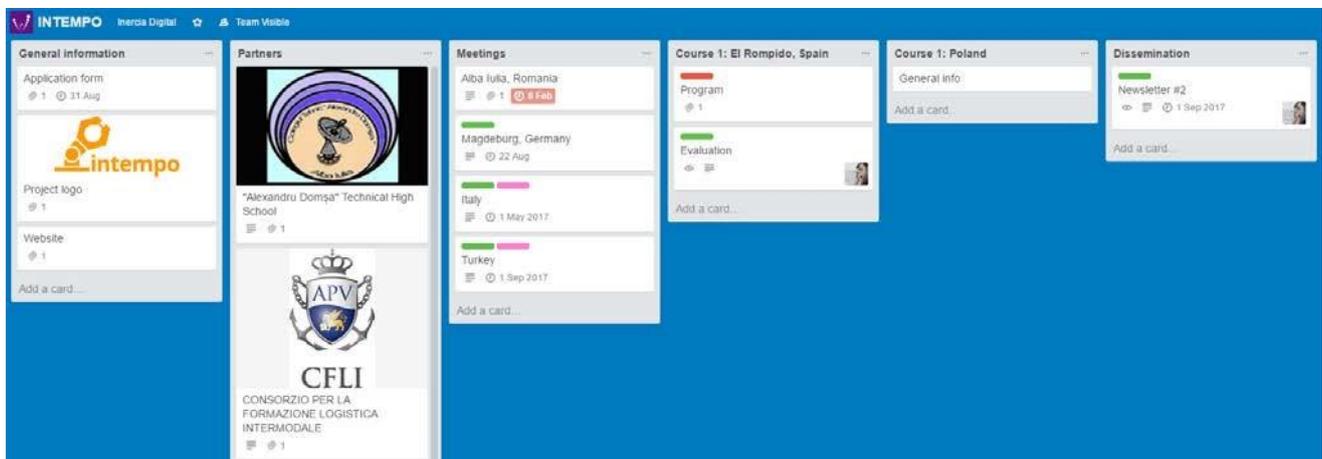


The free version of Trello allows you to upload files of up to 10 MB.

There are several ways to use Trello to organize project. One of them is using the lists to determine the state of the tasks (you can drag and drop cards between lists to move them):



Another way is to use the lists to classify the information, and the labels to identify the state of the tasks:



In this example, red label means it's done, while green means to do.

2. SLACK

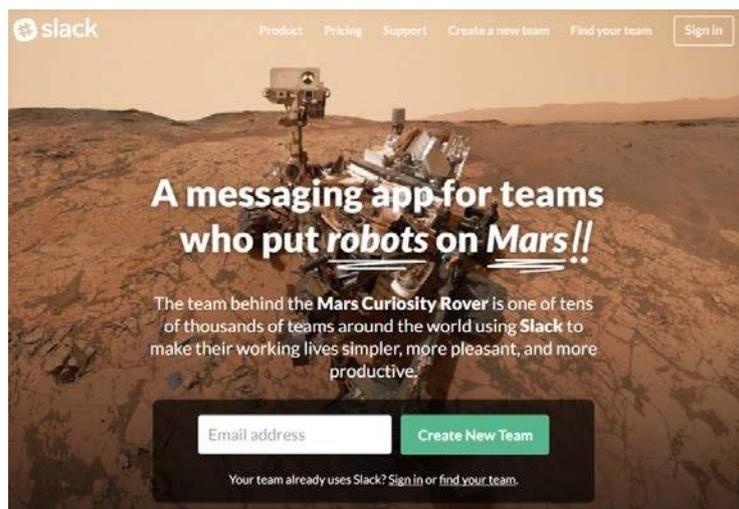
a. Training Session - SLACK

Session 5.2		A Better Communication: Slack	
Duration:	45 min		
General Objective:	Learning how to communicate better with Slack		
Specific Objectives:	The learners to be able to: <ul style="list-style-type: none"> • To have their own account on Slack • To know how to use the Slack for better Communication • To learn how to create different channels for better communication 		
Materials needed:	Pc and Internet Supporting documentation: <ul style="list-style-type: none"> • Content for Quip 		
Specific Objective and Content		Learning methods and duration	
1. Create an account on Slack. 2. Create a message for better communication with colleagues/partners/others 3. Create channels of different topics for better communication		1. Students knowledge diagnosis about the topic to deal with (5 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (5 minutes.) 3. Theoretical presentation of the training content of the session (10 minutes.) The tutor will introduce the Slack, a tool for better communication, by using the same tool and explaining the process step by step. During the presentation, they will ask some questions to the students to test the monitoring of the explanation. 4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (20 minutes.) 5. Sharing of ideas about the activity done (5 minutes.)	

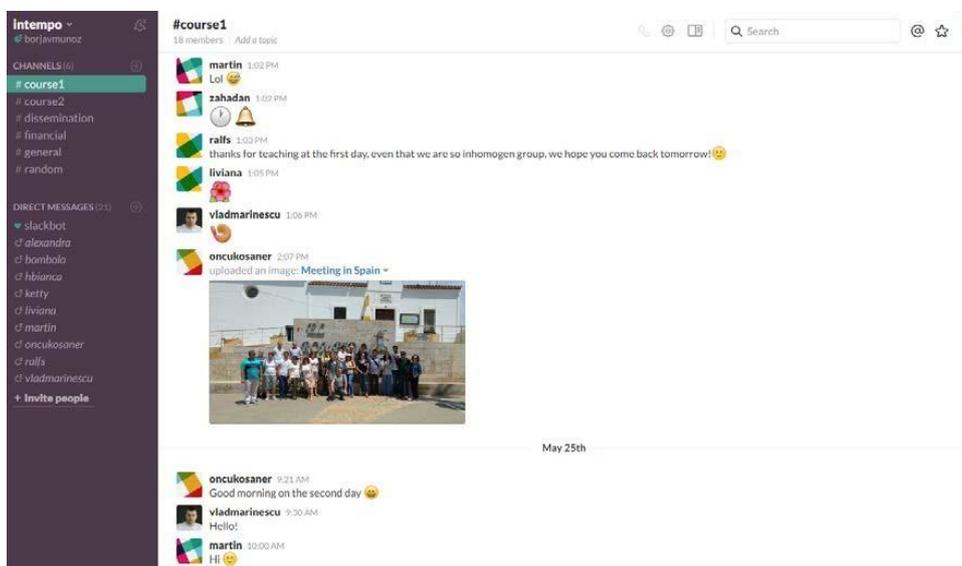
b. Training Materials - SLACK

Slack is a tool for **internal communication in a team**. Again, simplicity is its best feature. Slack is nothing more, nothing else than a web application to create permanent chatrooms that the members of the team can use and communicate. It drastically reduces the amount of emails that are sent between coworkers or colleagues that work in the same project.

To join Slack we go to <http://slack.com>, and the first person to create the project will have to register with his/her email address and follow a simple process to set up the team's name.



Once we have created our team, we will have an interface similar to this (but emptier):



In the left sidebar we find the list of **channels, which are the different sections, departments or themes we can divide our line of work**. In our example we created a channel to discuss about dissemination, another one for financial management and two for the

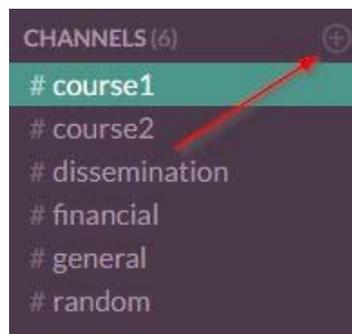
courses of the project. All the conversations that happen in a channel are only visible for the people subscribed to that channel.

Under the channel list we have the direct messages list, so we can communicate directly with other members in a one-to-one conversation.

We can add a message to the conversation using the input bar in the bottom. We can also attach a file or create a post using the green plus button on the left of it.



We can add a new channel by clicking on the + button on the channel list:



Create a channel

Channels are where your team communicates. They're best when organized around a topic – #leads, for example.

Public Anyone on your team can view and join this channel.

Name

Names should be lowercase, with no spaces.

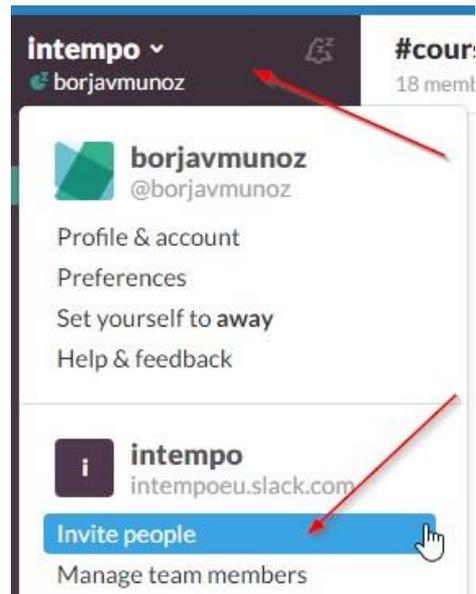
Purpose (optional)

What's this channel about?

Send invites to: (optional)

Cancel

Create Channel



We can invite more people to the team by clicking on the project name on the top left corner and then on *Invite people*.

3. MOODLE

a. Training Session - MOODLE

Session 4		GETTING STARTED WITH MOODLE	
Duration:	240 min		
General Objective:	How to work with Moodle		
Specific Objectives:	The learners must be able to know: <ul style="list-style-type: none"> • Types of access profiles. Basic Navigation. Setting a course • Blocks / Modules. Resources and activities. Basic operations 		
Materials needed:	Supporting documentation: Pc and internet.		
Specific Objective and Content		Learning methods and duration	
<ul style="list-style-type: none"> • Types of access profiles. Basic Navigation. Setting a course • Blocks / Modules. Resources and activities. Basic operations 		1. Students knowledge diagnosis about the topic to deal with (10 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (5 minutes.) 3. Explanation of the tools to be discussed at the session. Practice exercises (225 minutes)	

b. Training Materials - MOODLE

LMS (Learning Management System) selection Moodle, the Modular Object-Oriented Dynamic Learning Environment, is the world's most used learning management system. It presents several advantages that we think they make Moodle the perfect fit for our needs

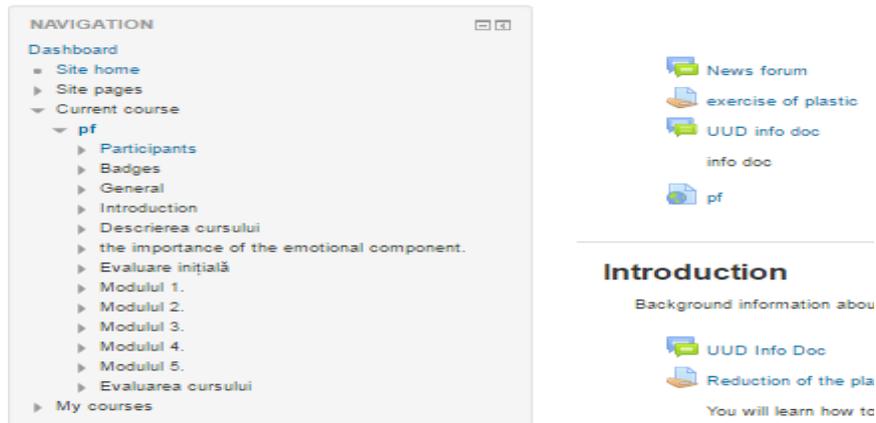
Minimum requirements

For the right work of the platform, some minimum requirements should be met. If not, it will not work properly in the device you want to use it in.

- Have an active internet connection.
- Use an updated browser (Internet Explorer, Google Chrome, Mozilla Firefox).
- Have a username and password to access the virtual platform.

Navigating through the platform

Menu (left side of the screen)

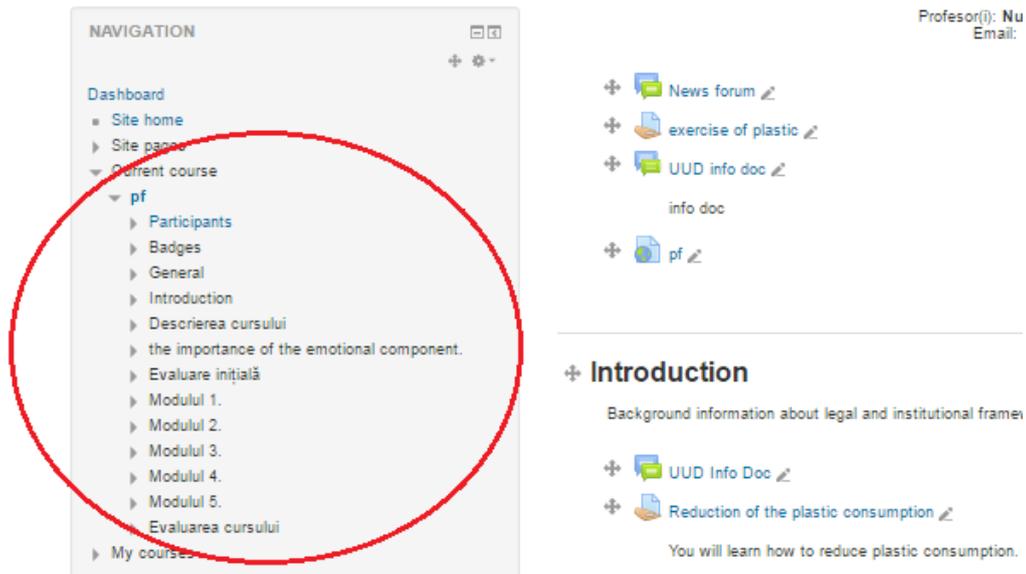


On the left side of the screen, there is the navigation menu with the following tools:

- HOME. Allows going back to the homepage at any time.
- MY PROFILE: Allows viewing and editing your personal information and access the following contents:
 - See and edit my profile.
 - Forum. Posts you have created along the course in different forums where you take part.
 - Blogs
 - Messages. Access to the messages you have sent and received. Allows sending private messages to other users and to the teachers.
 - My private files. Allows uploading files, downloading files and creating directories.
 - Badges. Milestones achieved along the course.

Navigation bar (upper left part)

Available at any time, it allows visualizing the itinerary covered from homepage and the sections visited. It also allows going back to the different sections previously visited.

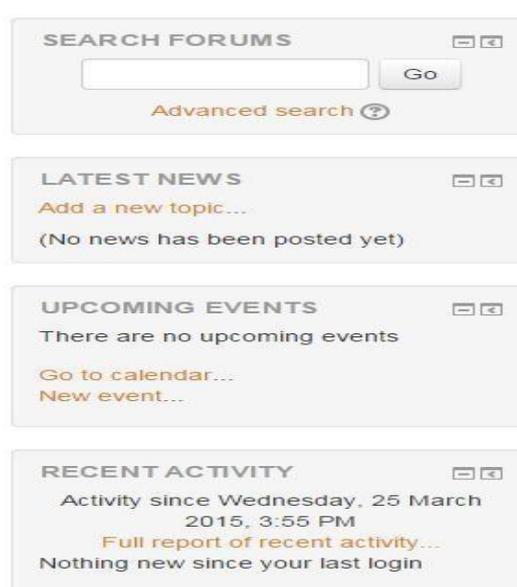


Log out (upper part)

It allows disconnecting and leaving the course and the platform. It is necessary to confirm that we want to quit the course and the platform.



Other tools (right part of the screen)

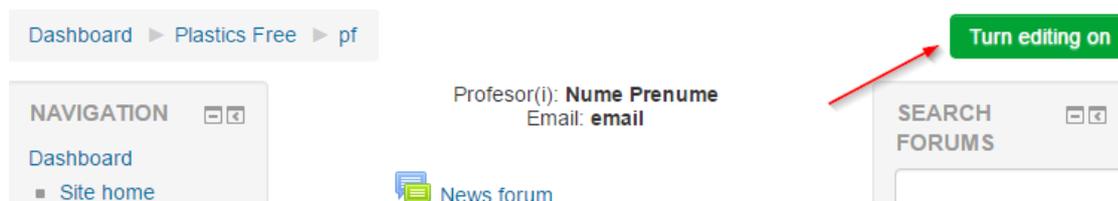


On the right part of the screen, there are the following tools:

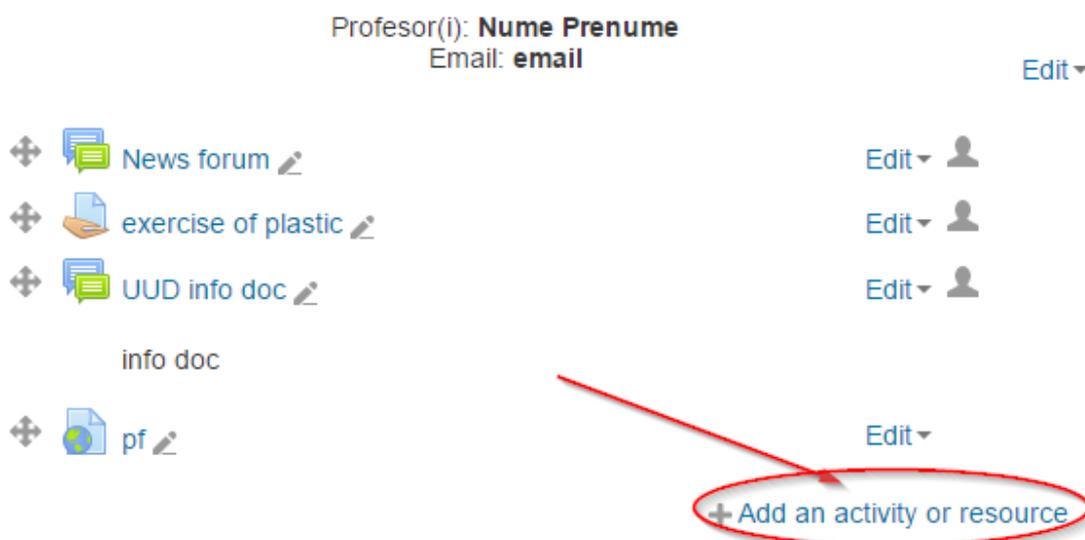
- Search Forums. Searching for conversations at forums related with the course.
- Latest news. It allows you to:
 - Have access to the latest news.
 - Incorporate new pieces of news.
- Upcoming events: it allows you to:
 - Have access to the course calendar.
 - Incorporate new items.
- Recent activity. It allows you to review the last activities done along the course and ask for an activity report.

Creating and managing training resources

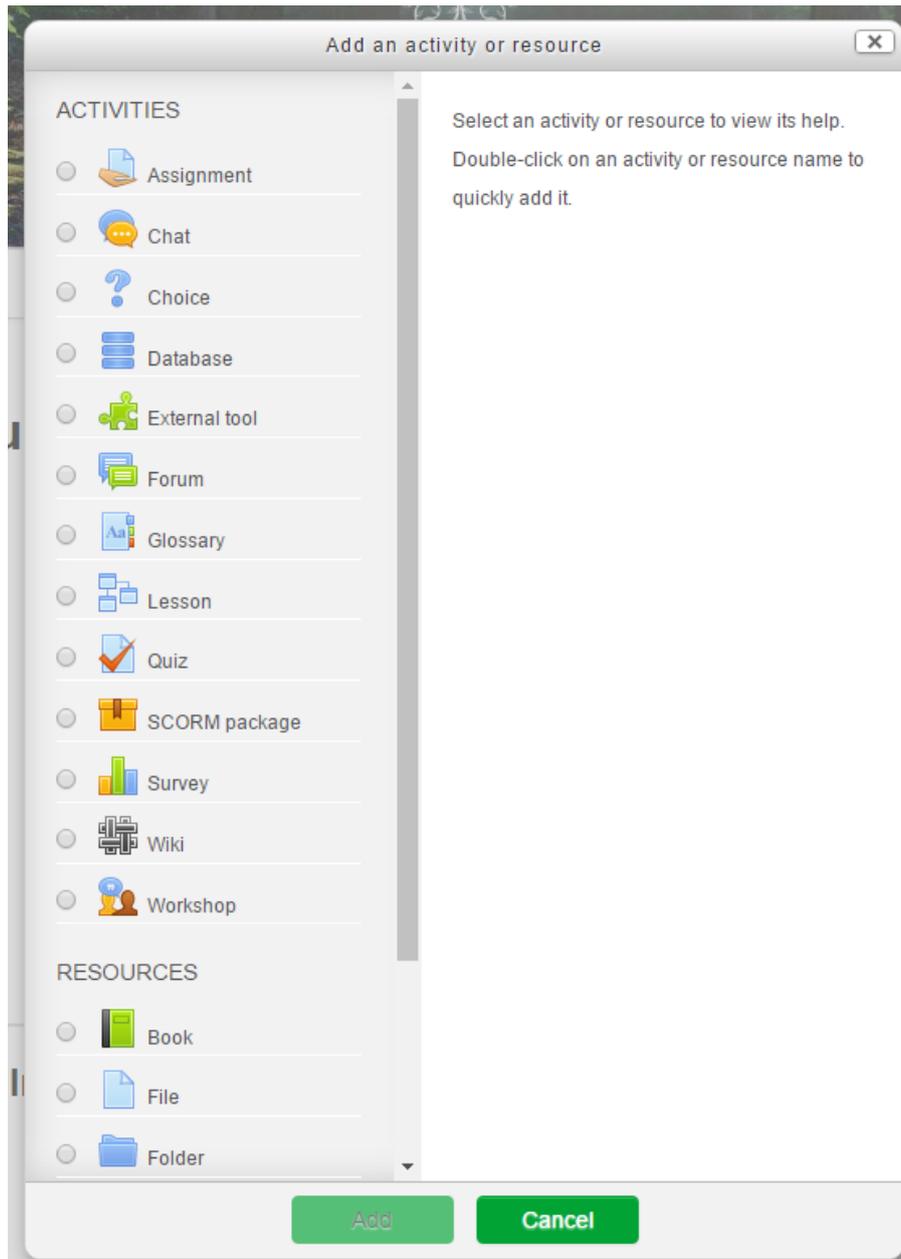
First of all we need to enter in editing mode. For that, inside of the course we're managing, we click on the **Turn editing on** button.



Now we can modify the content of the course. We can move around the existing resources, edit or remove them and add new ones. For adding a new one we click on **Add an activity or resource** under the section we want to modify.



A new window with a list of available resources to add will appear.



Some of the most common ones are:

Assignment

Allows the teacher to communicate tasks, collect work and provide grades and feedback. It's usually the main tool for grading the students.

It can ask the students to upload files like PDF or Word documents, and to add a text commentary to it. It's usually limited on time by a deadline.

Forum

A common place for the students and teachers to communicate. Usually it's common to have a forum for all the subject, but if the content is very diverse a forum for each section can prove to be more useful.

Glossary

A list of definitions. Can have images and files attached, and can accept comments from the students or other teachers.

Quiz

Enables the teacher to create quizzes and exams with various types of questions, including multiple choice, matching, short-answer and numerical.

File

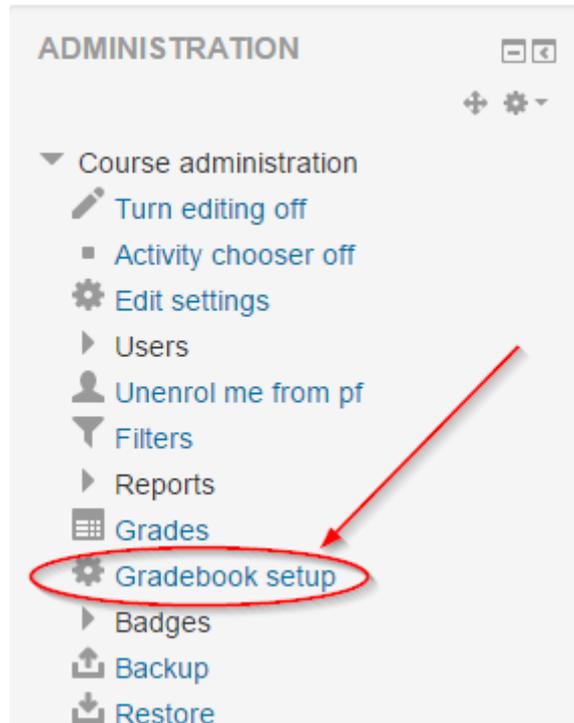
Serving a file for the student to download. Usually for content that can't be seen directly through the platform, like PDF or ZIP files.

URL

Similar to file, allows the teacher to add a link to another website.

Grading the students: the Gradebook

We can set up the gradebook function to automate the evaluation of the students. After creating the tasks the student should complete, we go to **Gradebook setup**.



Inside we can check the default setup.

Final Exams	<input type="checkbox"/>	0.0	-
Exam about green energies	<input type="checkbox"/>	50.0	10.00
Exam about Green Energy pp	<input type="checkbox"/>	50.0	10.00
Final Exams total			20.00
Idei principale - Modulul 2	<input type="checkbox"/>	0.0	10.00
final exams 2	<input checked="" type="checkbox"/>	33.752	-
exam about sustainable development	<input type="checkbox"/>	100.0	10.00
final exams 2 total			10.00
Test de evaluare finală	<input type="checkbox"/>	0.0	10.00
Examen final	<input checked="" type="checkbox"/>	27.002	-
Exercise of plastic recyclig	<input checked="" type="checkbox"/>	100.0	100.00
Test topic 1	<input type="checkbox"/>	0.0	10.00

Here we can change the weights of each task. We can also change the evaluation system by finding the course name in this page (the first line of the table) and clicking Edit.

Name	Weights ?	Max grade	Actions	Select
Plastics Free Main Course		-	Edit	All / None
Test de evaluare inițială	<input type="checkbox"/> 0.0	10.00	 Edit settings	
exercise of plastic	<input type="checkbox"/> 0.0	15.00	 Hide	
Test de autoevaluare - Modulul 1	<input type="checkbox"/> 0.0	10.00	 Reset weights	

Inside we can change the aggregation of the grades (mean, median, lowest or highest grade, etc) as well as the grade type and the maximum and minimum grad.

4. GOOGLE DRIVE

a. Training Session - GOOGLE DRIVE

Session 2.2	Office in the cloud. Google Drive.	
Duration:	165 min	
General Objective:	To know the basic characteristics of one of the online Office IT tools most used, its use in the teaching field and its advantages and disadvantages about the offline tools.	
Specific Objectives:	<p>The learners to be able to:</p> <ul style="list-style-type: none"> • To do in a collaborative way with some teachers (who teach the same subject) the schedule or a catalogue of common exercises, etc. • To create a Google Docs sheet with all the students and the professors will be able to write the grades simultaneously so they will have access to the grades uploaded by the rest immediately. • To have a control of attendance of a group of students. • To do exams and online questionnaires. • To do collaborative tasks by the students. 	
Materials needed:	Supporting Documentation: Pc and Internet.	
Specific Objective and Content	Learning methods and duration	
<p>This task will consist of:</p> <ul style="list-style-type: none"> ▪ Sharing documents with other professors. ▪ Sharing grades with other professors. ▪ Control the attendance of the students. ▪ To do questionnaires or exams using the email. ▪ To do collaborative tasks between the students. 	<ol style="list-style-type: none"> 1. Students' knowledge diagnosis about the topic to deal with (15 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (15 minutes.) 3. Theoretical presentation of the training content of the session (60 minutes.) The tutor will introduce the management of the web tools 2.0 using the same tool and explaining the process step by step. During the presentation, they will ask some questions to the students to test the monitoring of the explanation. 4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (165 minutes.) 5. Sharing of ideas about the activity done (15 minutes.) 	

b. Training Materials - GOOGLE DRIVE

In order to use Google Drive, you will need a Google account. Google accounts are free, and signing up for one is simple.

In order to create a Google account, you'll need to enter some information, including your name, birth date, and location.

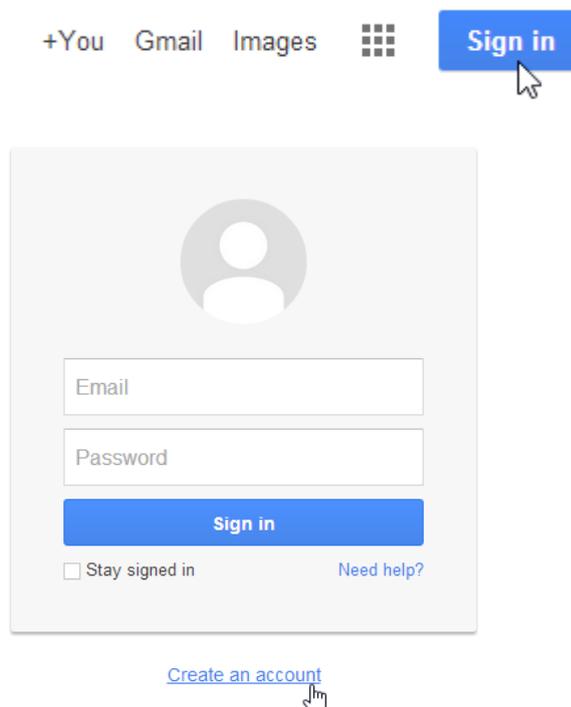
Creating a Google account will automatically create a Gmail email address and a Google+ profile.

1. Creating a google account

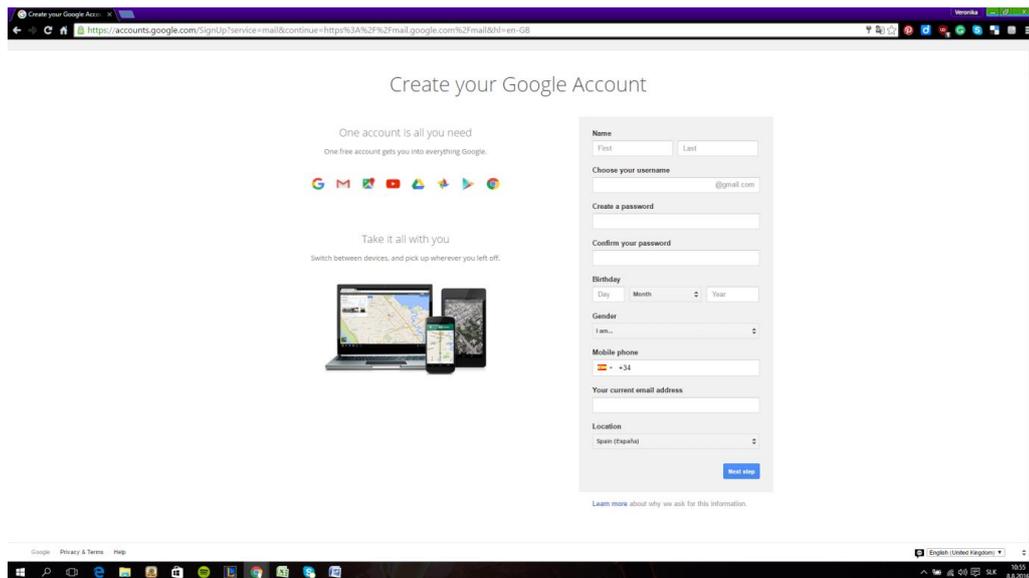
Sign into the Google Drive website with your Google account. If you don't have a Google account, you can create one for free. Google Drive will allow you to store your files in the cloud, as well as create documents and forms through the Google Drive web interface.

Open the Gmail website. Click the blue "Create an account" button below the login box. This will take you to the "Create your Google Account" page.

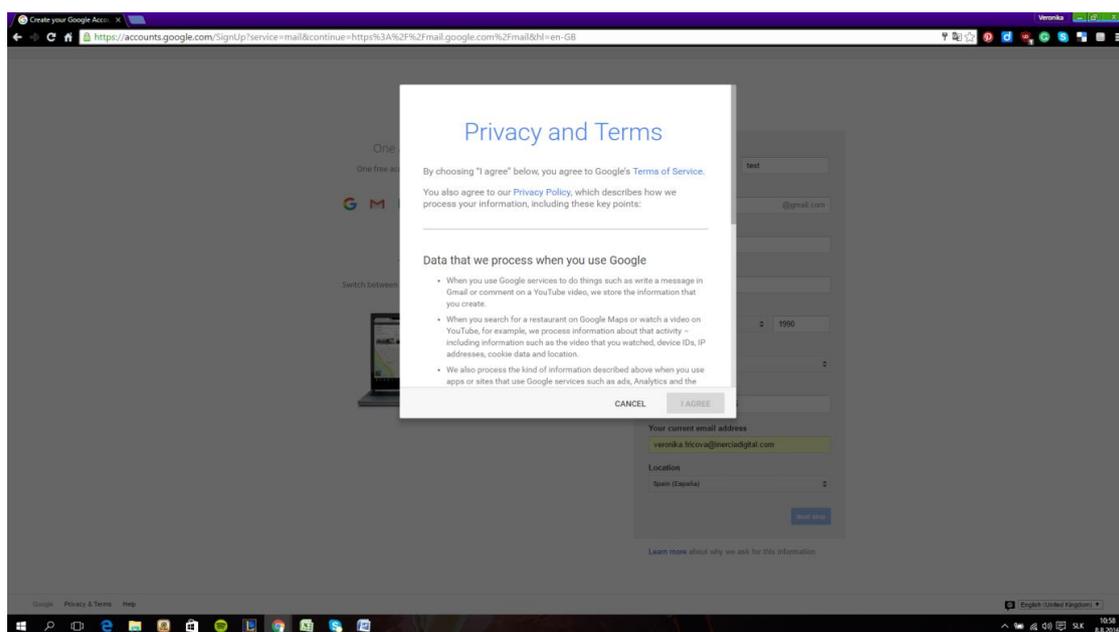
Creating a Gmail account creates a Google account that you can use to access other Google products and services

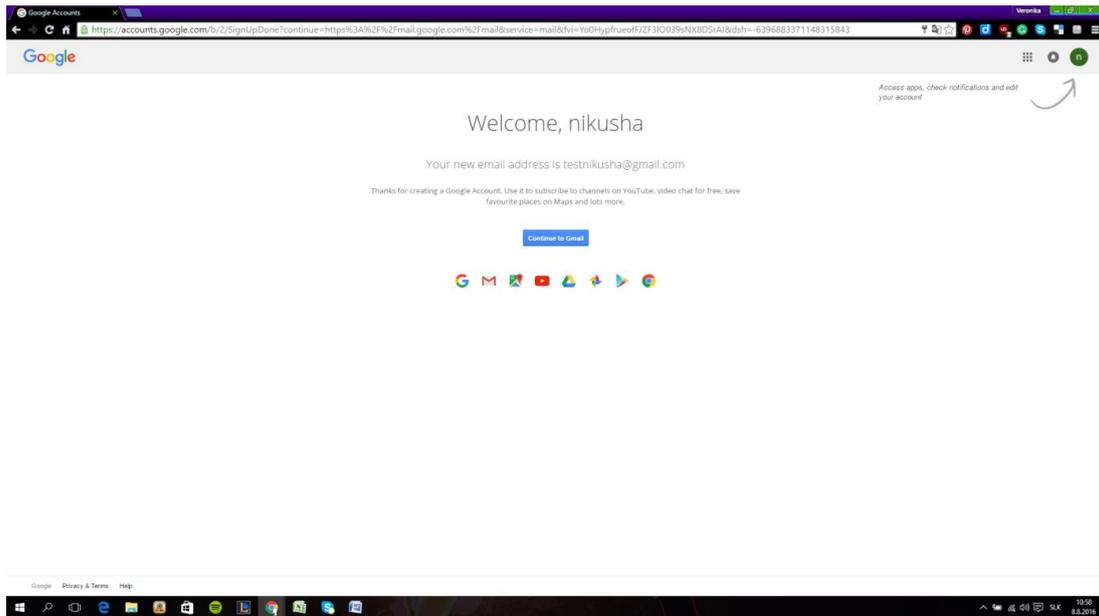


Follow the directions and enter the required information, including your name, birth date, and gender.



Review Google's Terms of Service and Privacy Policy, click the check box, then click Next step.



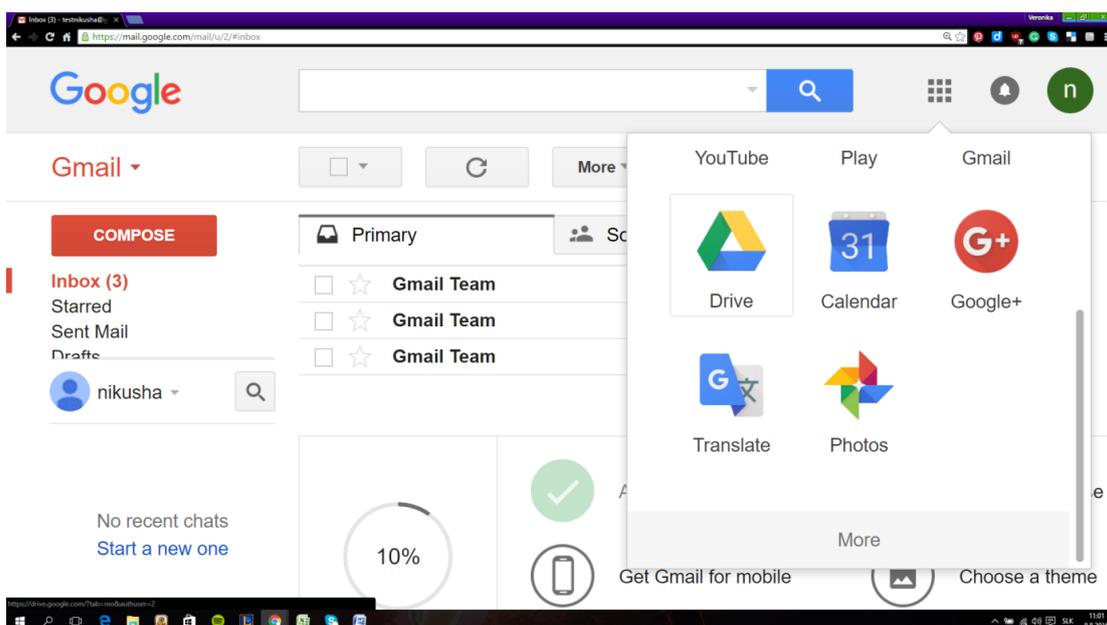


Click Next Step once more. Your Gmail account has been created. You can click the button to return to Gmail, or visit any other Google service. You should be automatically logged in no matter which Google site you visit.

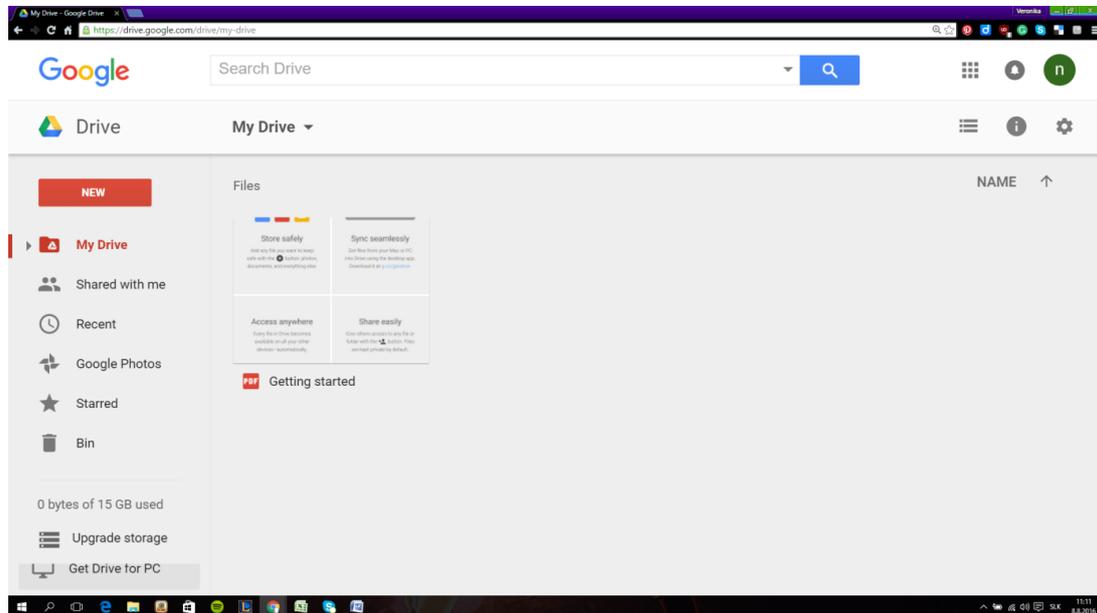
2. Accessing Google Drive

Once you've set up your Google account, you can access Google Drive by going to <http://drive.google.com> in your web browser.

You can also navigate to Google Drive from any Google page (such as Gmail or Google search) by selecting the grid icon near the top-right corner, then clicking Drive.



Your Google Drive may be empty right now, but as you begin to upload and create files you'll need to know how to view, manage, and organize them in the interface



Use the navigation bar on the left side to browse your files.

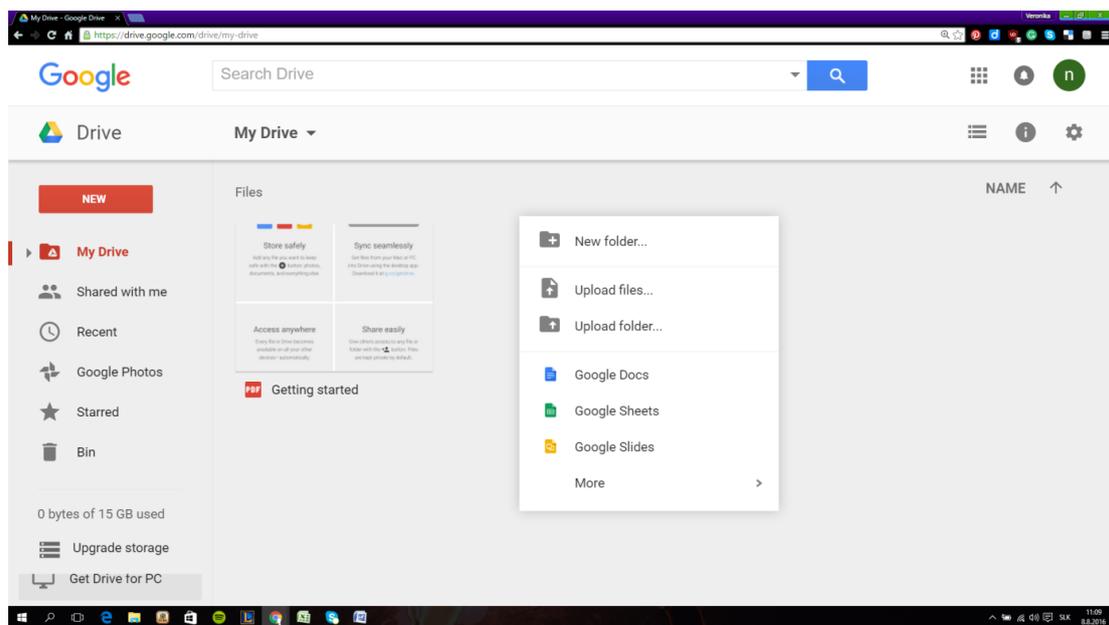
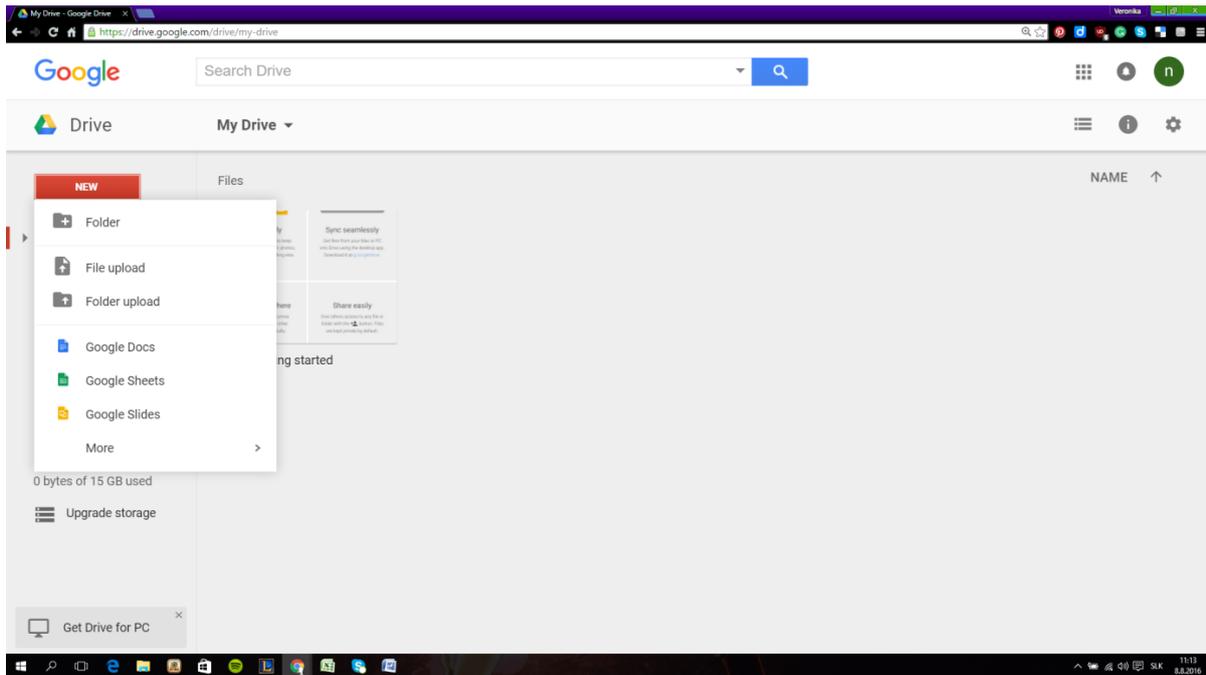
- “My Drive” is where all of your uploaded files and folders are stored.
- “Shared with Me” are documents and files that have been shared with you by other Drive users.
- “Starred” files are files that you have marked as important, and
- “Recent” files are the ones you have most recently edited.

3. Add files to your drive.

There are two ways to add files to your drive. You can create Google Drive documents, or you can upload files from your computer.

To create a new file, click the NEW button, or you can use right click (see picture).

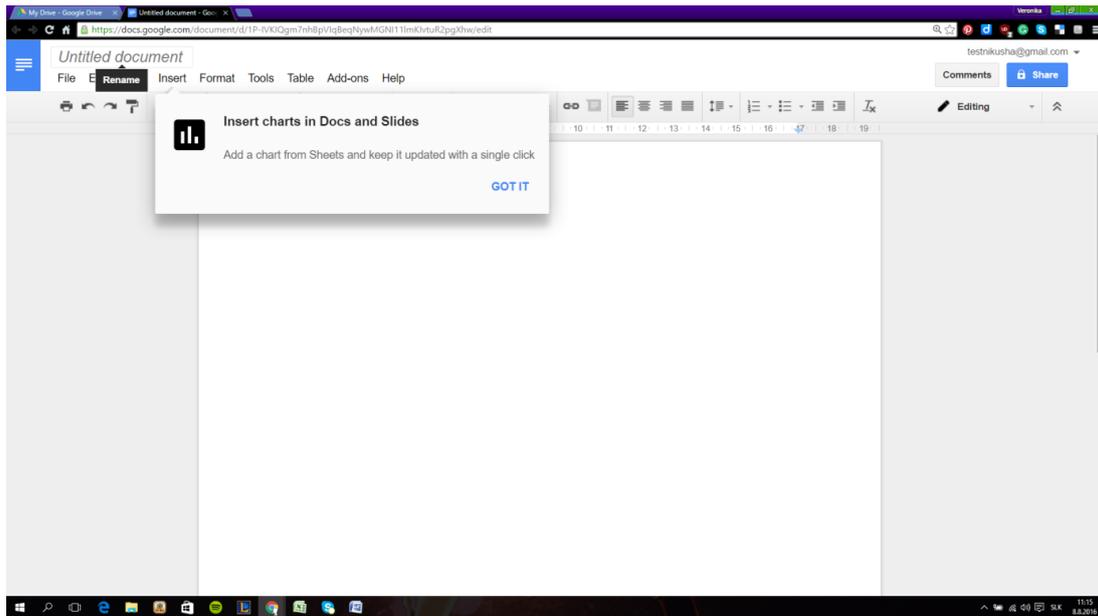
Click the NEW button (or use right click). A menu will appear that allows you to choose what type of document you want to create.



4. Create a new file.

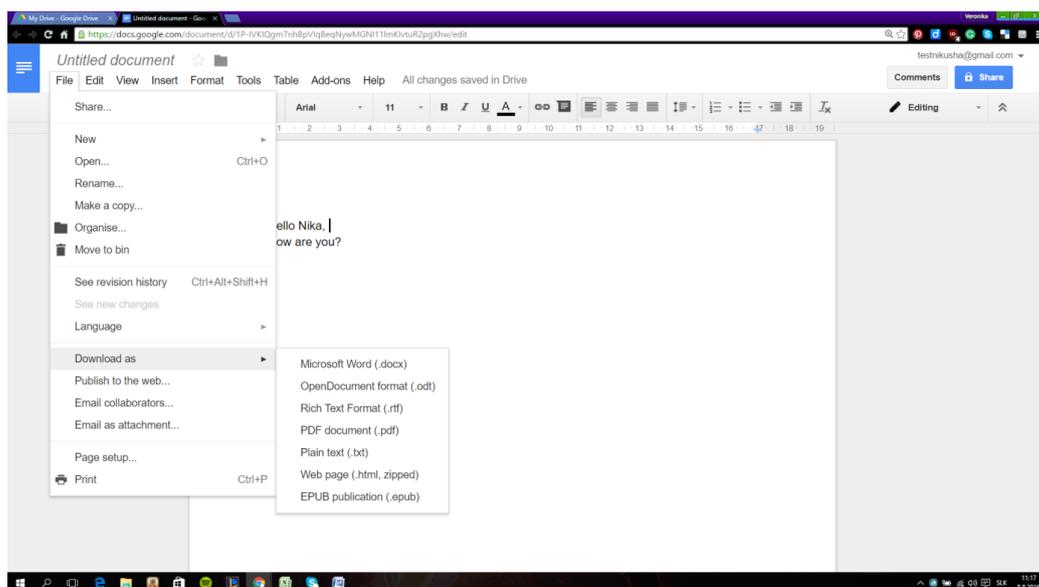
Once you’ve selected your document type (by right click or click the NEW button), you will be taken to your blank document. If you chose Presentation or Form, you will be greeted by a wizard that will help you configure the feel of your document

Name the file. At the top of the page, click the italic gray text that says “Untitled <file type>”. When you click it, the “Rename document” window will appear, allowing you to change the name of your file.



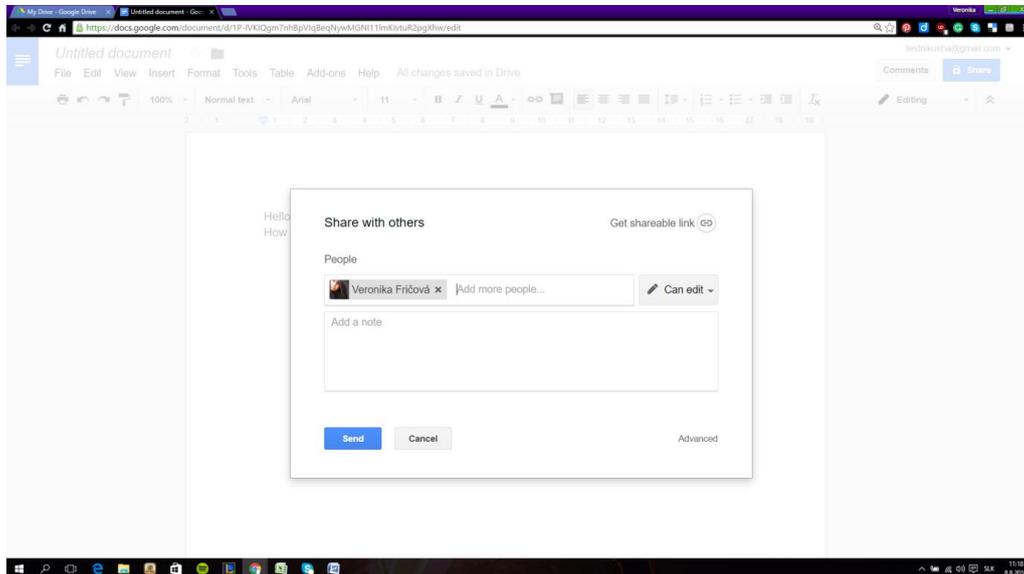
Edit your document. Begin writing your document as you would in its commercially-equivalent. You will most likely find that Google Drive has most of the basic features, but advanced features you may be used to are not available.

Export and convert the file. If you want to make your file compatible with similar programs, click File and place your cursor over “Download As”. A menu will appear with the available formats. Choose the format that best suits your needs. You will be asked to name the file and select a download location. When the file is downloaded, it will be in the format you chose.



5. Share your document.

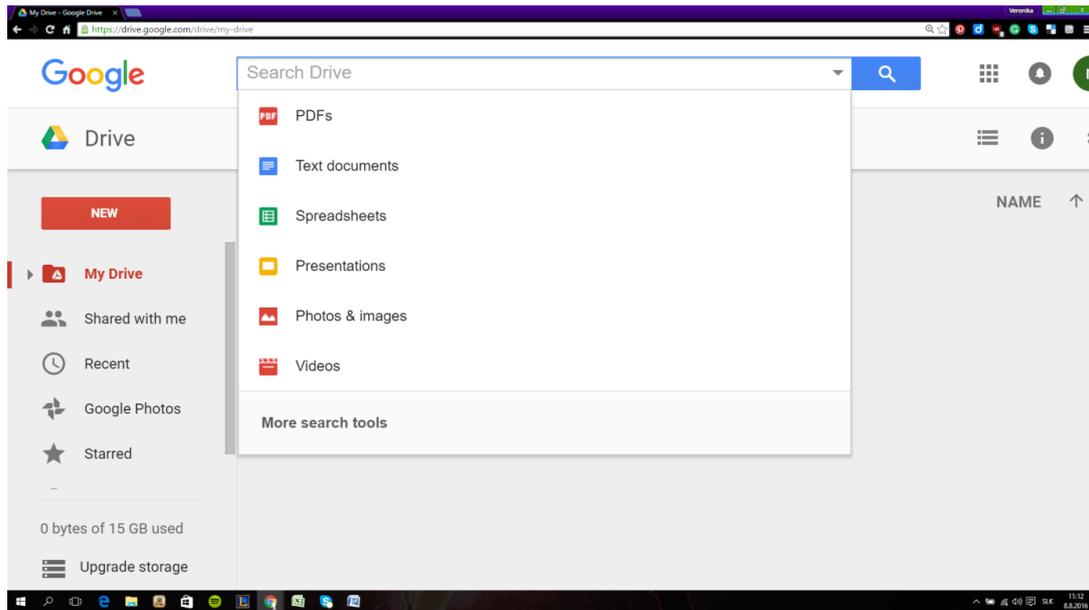
Click File and select Share, or click the blue Share button in the upper right corner to open the Sharing settings. You can specify who can see the file as well as who can edit it.



1. Click a file or folder.
 - a. **Google Drive:** In the top right, click Share .
 - b. **Google Docs, Sheets, and Slides:** In the top right, click **Share**.
2. In the top right of the "Share with others" box, click **Get shareable link**.
3. Next to "Anyone with the link," click the Down arrow .
4. Click **More...**
5. Select "On - Public on the web". Anyone can open the file on the Internet by searching or using the link.
6. Click **Save**.
7. Choose what level of access people with the link have: view, comment, or edit.
8. Click **Done**.
9. If you're using an account through work, school, or another group, you may not be able to share files or folders publicly.

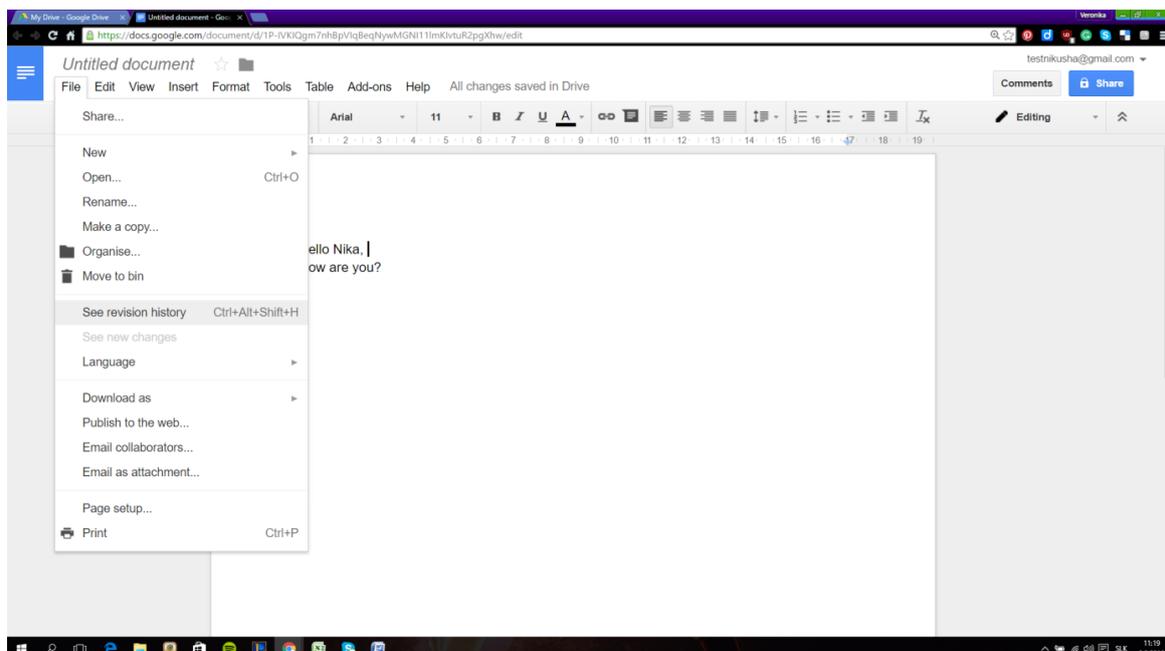
6. Search for files.

You can search through your Google Drive documents and folders using the search bar at the top of your page. Google Drive will search through titles, content, and owners. If a file is found with the exact term in the title, it will appear under the search bar as you type so that you can quickly select it.



7. Revision of History

Revert to an older version of a document. If you’ve made a bunch of changes to a document and realize you need to revert back to your old version, you can use the Revision History tool to browse through old copies. Open the document and click the File menu. Select “See revision history” and a frame with a list of your revisions will open on the right side of the page.



Google Drive contains:



- Google docs
- Google sheets
- Google slides
- Google forms
- Google drawings
- Google maps and more.

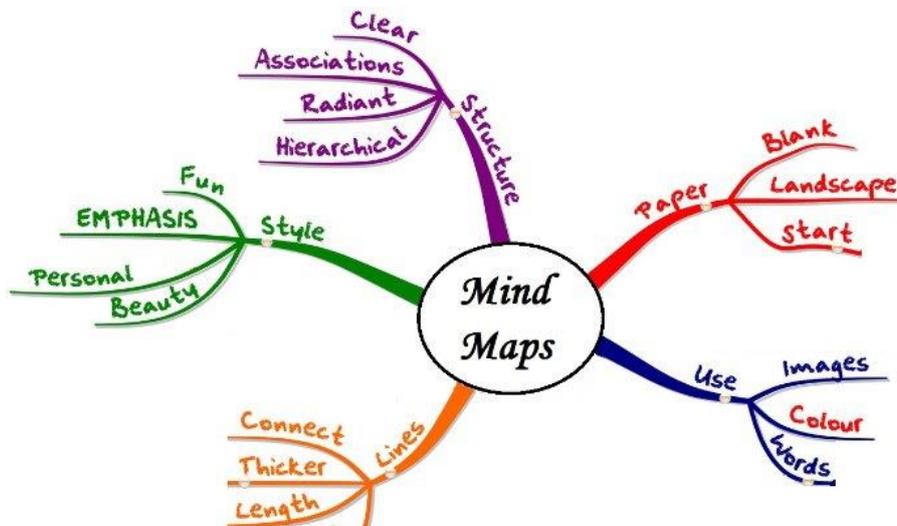
5. MINDMAP

a. Training Session - MINDMAP

Session 06	MindMap tool
Duration:	90 min
General Objective:	Learning and using MindMap tools
Specific Objectives:	<p>The learners to be able to:</p> <ul style="list-style-type: none"> • Read and produce mind maps • Learn the technique to build a map from start to finish • Explore how to enhance your map for memory and learning purposes • How to do quick-think maps which will be of benefit in the school environment
Materials needed:	<p>Pc and Internet</p> <p>Supporting documentation:</p> <ul style="list-style-type: none"> • Mindmup tutorial (WebPage) • Mindmup video tutorial (English)
Specific Objective and Content	Learning methods and duration
<p>1. Interfacing the MindMap Software on Cloud (www.mindmup.com)</p> <p>2. Mind Mapping Technique - Create</p> <p>3. Explore content and approach</p> <p>4. Mind Maps to teachers and presentations</p> <p>5. Practical Mapping</p> <p>Share it on the web</p>	<p>1. Knowledge diagnosis about the topic (10 minutes). With the interrogative method.</p> <p>2. Presentation of the objective of the session by the tutor (10 min.)</p> <p>3. Theoretical presentation of the training content of the session (30 min.) The tutor will introduce the management of the interface using the same tool and explaining the process step by step. During the presentation, they will ask some questions to the students to test the monitoring of the explanation.</p> <p>4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (30 min)</p> <p>5. Sharing of ideas about the activity done (10 min).</p>

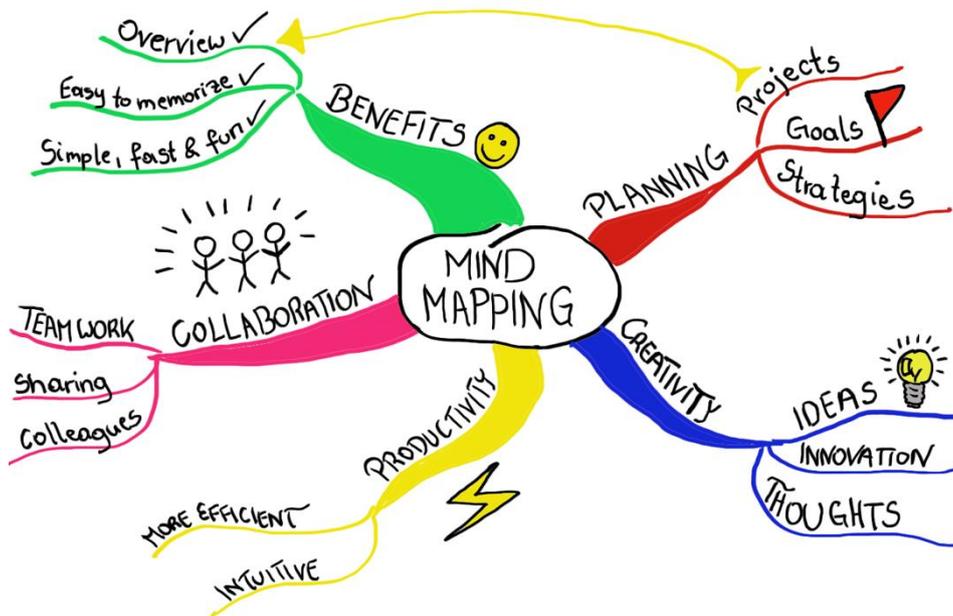
b. Training Materials - MINDMAP

The mindmap is a different way of representing ideas in more graphical format than that report done in Microsoft Word. The visual aspect is more intuitive and aligned with the way of working of the brain. Mind Maps are creative methods to stimulate thinking and use the full potential of your brain.



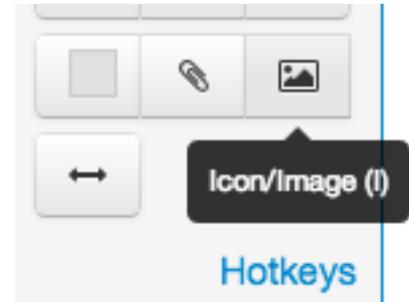
1 - Images and icons

In MINDMAP it is possible to associate an image with each map node - as a node icon or a visual description of the content. The image can be positioned behind the text (in the background) or left / right / up / down the text.

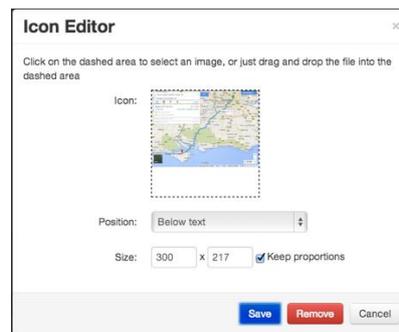


The easiest way to add an image to an existing node is just to drag the image to a file window on the desktop and drop it into a knot. The image will be automatically resized if it is too large, so that it can fit on the screen as well, and it will be added to the left of the text node. You can also drag an image to the map background, and will become a new child node of the currently selected node.

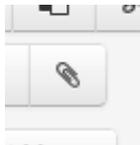
The image associated with the node, reposition it, or change the size, press the **I key** from the keyboard or select the icon / Image button in the toolbar, right-click menu or the top Edit menu. You can also use this button to add an image to a node text only (this is especially useful for touch devices where you cannot drag and drop images easily).



Clicking this button will open the Icon Editor window, similar to the figure below or similar:



Add or change the image by clicking on the shaded area, or by dragging a new image and dropping it there. When the check "Keep proportions" box is checked, any change in the width or height of the image will also affect the other **dimension** so that the image proportionally scales according to the original dimensions. To remove an image from a node, open the icon editor, as described above, then click the "Remove" button.



To add an attachment to any node, click the paperclip icon on the toolbar or the top menu bar. You can also press the A key (for fixing) on the keyboard. This will make the viewer window attachments / editor.



2 - PDF EXPORT

MindMap supports export PDF documents to print. Depending on the tool used, the features may vary in appearance but the concepts remain.

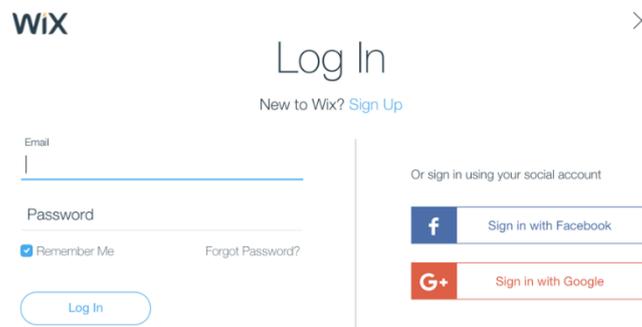
6. WIX

a. Training Session - WIX

Session 07	Wix – Creating websites easy	
Duration:	90 min	
General Objective:	Learning of the use of Wix platform to create a website	
Specific Objectives:	<p>The learners to be able to:</p> <ul style="list-style-type: none"> • To have their own personal or thematic website • To know how to create and make website and contents website contents. • Using Wix to share information to Schools and as a pedagogical tool to e-portfolio 	
Materials needed:	<p>Pc and Internet</p> <p>Supporting documentation:</p> <ul style="list-style-type: none"> • Wix Tutorial PDF • Wix Tutorial video (English) 	
Specific Objective and Content	Learning methods and duration	
<ol style="list-style-type: none"> 1. Create an account on Wix Platform (www.wix.com). 2. Once you have the account, choose a website template 3. Create menus and pages 4. Create multimedia content and navigation mechanisms to a e-portfolio 5. Use free components for contacts, maps, photo galleries and videos 6. Publish to the web. 	<ol style="list-style-type: none"> 1. Students' knowledge diagnosis about the topic to deal with (10 minutes). It's done with the interrogative method. 2. Presentation of the objective of the session by the tutor (10 minutes.) 3. Theoretical presentation of the training content of the session (30 minutes.) The tutor will introduce the management of the WIX platform, using the same tool and explaining the process step by step. During the presentation, they will ask some questions to the students to test the monitoring of the explanation. 4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (30 minutes.) 5. Sharing of ideas about the activity done (10 minutes.) 	

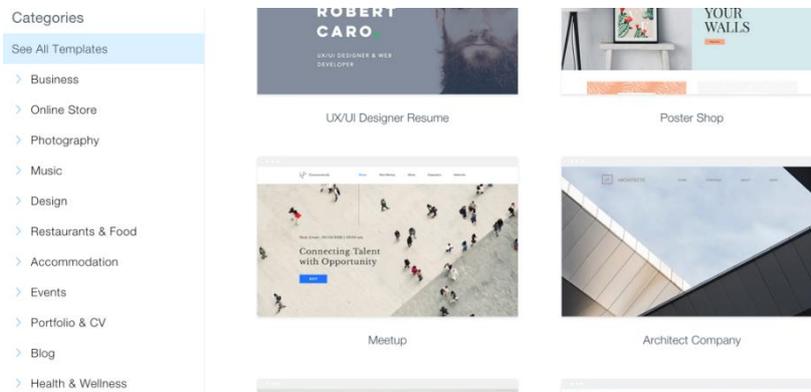
b. Training Materials - WIX

Step 1. Wix and register for free or use your gmail of facebook account

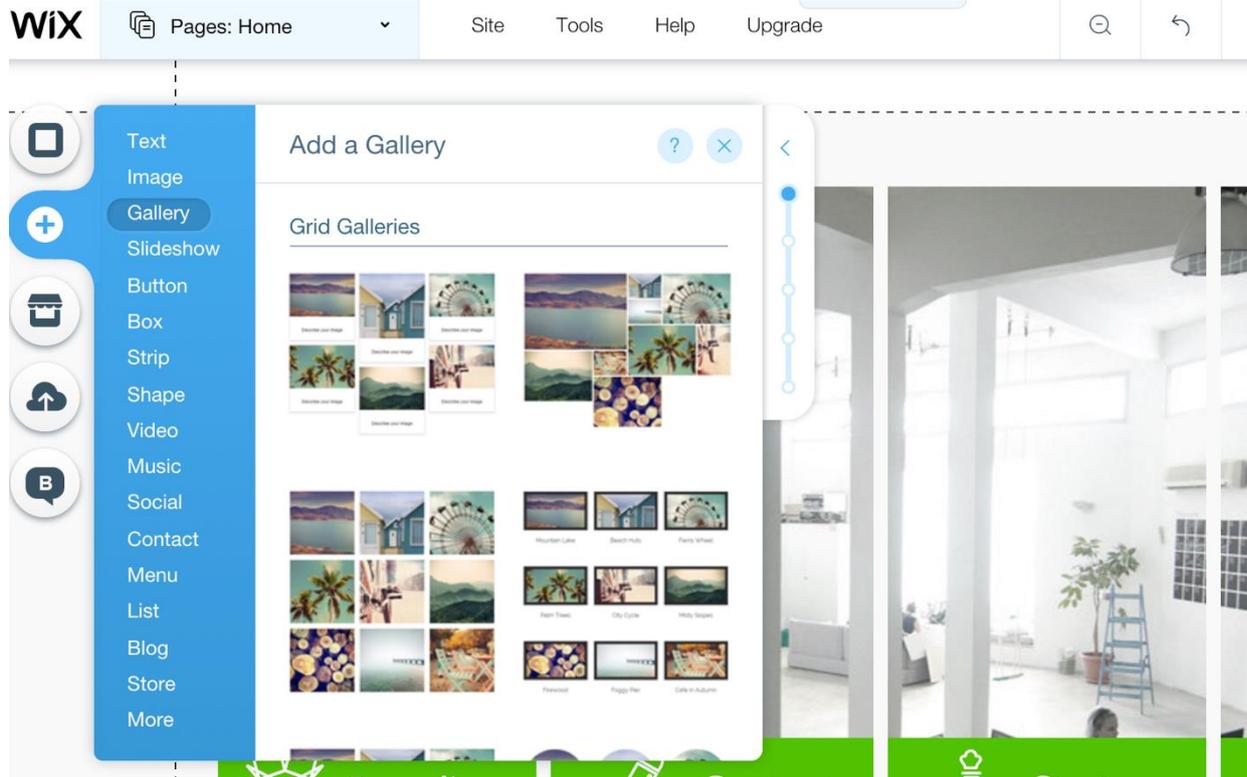


The image shows the Wix login page. At the top left is the Wix logo and a close button (X). The main heading is "Log In" with a sub-link "New to Wix? Sign Up". Below this are two input fields: "Email" and "Password". There is a "Remember Me" checkbox and a "Forgot Password?" link. A "Log In" button is at the bottom left. On the right, there is a section "Or sign in using your social account" with two buttons: "Sign in with Facebook" and "Sign in with Google".

Step 2. Template - Choose a category and subcategory and click Go;



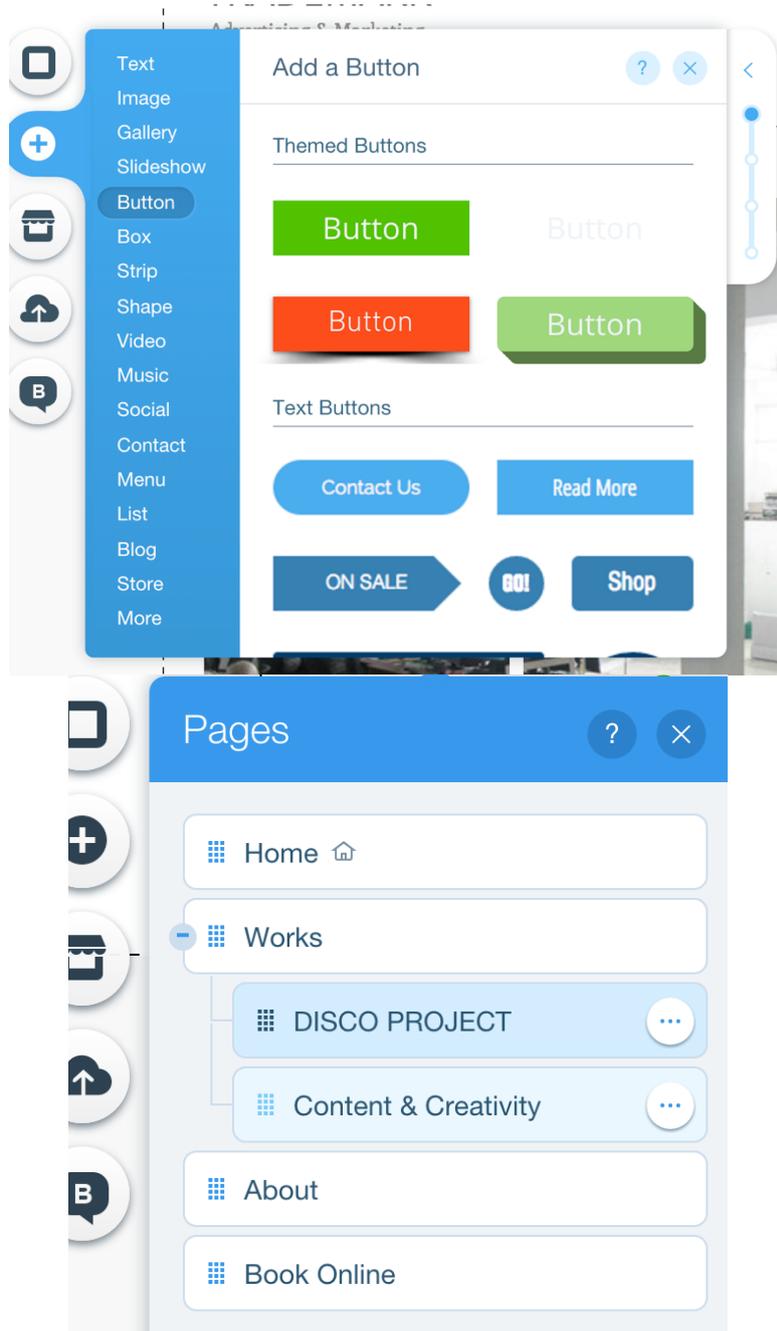
Step 3. Edit your template - Check and explore objects like pages, video, slideshows, text, box, maps, etc



Step 4. Click the area you want to customize and click Edit. For example, click in the title area and click Edit to enter the name you want. You can customize the text, change the font, color, size and move the text box, drag it to where you see fit;



Step 5. The bars on the sides and top are Wix editing bars. With them, you can add photos, videos, music, upload files and manage pages, for example.



Step 6. – WIX APP Market – If you want you can use thousands of external components - free or paid Wix store. Let's extend functionality to the site such as: custom forms, configurable shopping carts, etc.

If you have inserted an object and want to delete, simply click on it and click on the trash. You can also click undo in the top bar of the Wix if give up some editing;

Wix App Market

Magic Form Builder By Magic Form Builder

★★★★★ (121 Reviews)

+ Add to Site

Free / Premium

Overview Demo Features & Pricing Reviews Developer Info

Magic Form Builder

Magic Form Builder - easy, quick and dynamic.

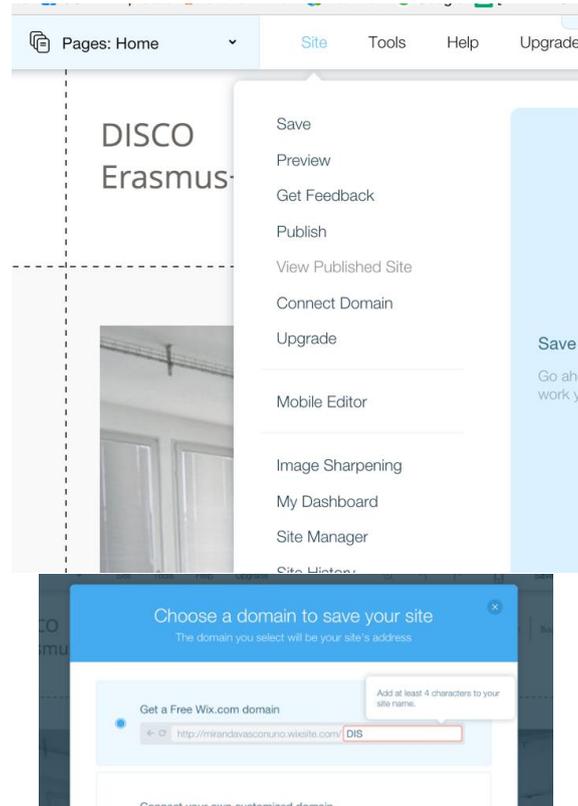
If you want to save your time use Magic Form Builder.

Magic Form Builder supports you to:

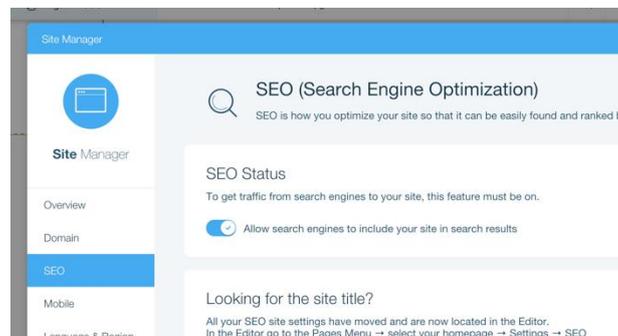
- create contact forms, online surveys, quizzes, polls, etc. fast and easily
- receive new submissions notifications by email
- get accumulated data reports instantly
- export submission data to excel

Step 7. To see how your site is getting, click Print view in the top bar of the Wix. To return to editing, click Back to edit;

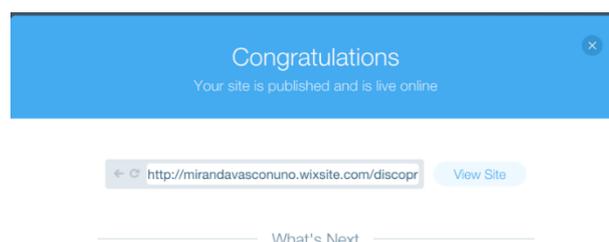
Step 8. For general Site settings and publication, click the top bar of the Wix, and then SITE;



Step 9. In order for your site to be found and ranked by search engines like google, activate the option SEO (Search Engine Optimization) via Site Manager option from the Site Menu.



Step 10. When you created your site, click Publish. You can edit it, even after publication. To do this, go to Editor, change whatever you want and save the changes. The site will be updated automatically.



What's Next

7. SOCIAL NETWORKS

a. Training Session - SOCIAL NETWORKS

Session 05	Social Networks	
Duration:	210 min	
General Objective:	Learning the process of Implementing Social Media Into the Classroom	
Specific Objectives:	The learners to be able to: <ul style="list-style-type: none"> • Enhancing student learning by using social media • Learning about ideas for implementing common social media platforms • Learning about protecting your privacy and digital reputation 	
Materials needed:	PC and internet	
Specific Objective and Content	Learning methods and duration	
<ol style="list-style-type: none"> 1. Understanding the importance of social media and how it helps with face to face networking 2. Overview of social media sites 3. Integrating them into the classroom. 4. Learning about privacy 	<ol style="list-style-type: none"> 1. Learner's knowledge diagnosis about the topic to deal with (10 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (10 minutes.) 3. Theoretical presentation of the training content of the session (60 minutes.) The tutor will introduce introduction of social media sites and integration of them into the classroom. During the presentation, they will ask some questions to the students to test the monitoring of the explanation. 4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (60 minutes.) 5. Analyses of the results (50 minutes.) 6. Open discussion (20 minutes). 	

b. Training Materials - SOCIAL NETWORKS

Teachers apply social media in their classrooms to help students view it as something that can—and will—influence their academic and professional life, hence the value of its responsible and ethical use.

Here are nine strategies for incorporating social media into your classroom in ways that can encourage critical thinking through analysis and engagement.

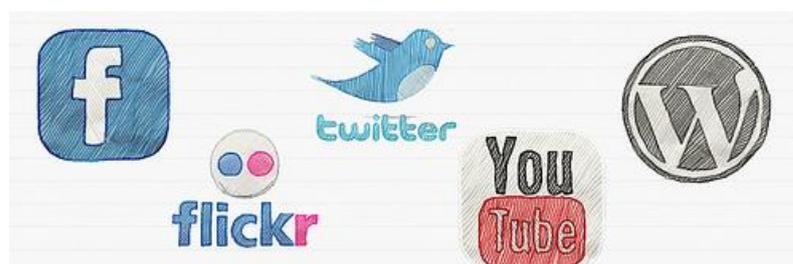


Social media is an ingrained part of today's society. Our students are constantly on Instagram,

Facebook, Twitter, and likely many sites we're not hip enough to know about, and by reading this blog, you're interacting with social media at this very moment. If you want to bring the "real world" into the classroom, consider integrating social media into your lessons.

When used carefully, social media can be a useful tool rather than a distraction. The recent changes argues that using social media not only brings current technology to the classroom, but it also helps bridge the digital divide among lower-income students. These students may not have the constant access to social media that their counterparts do. Why should they be left behind as technology continues to march forward?

Education-based sites such as Edmodo, Edublog, and Kidblog provide alternative social media sites for posting status updates and announcements, blogging, and microblogging. But even the commercialized sites can be useful for demonstrating social media to students.



CREATE A CLASS FACEBOOK GROUP

Facebook is known as a place to post status updates, announcements, photos, and video — all things that we likely use in our classes anyway. Create a Facebook group for each class, on which you can post assignments, make announcements, and remind students about important deadlines. Parents can also access the site to monitor what is going on in your class.

A Facebook group also creates a space for students to ask and answer questions. When students get home and begin working on their homework, they can post a question to the group's wall that either you or a classmate can answer. Since students often learn from others, having students share their questions, insights, or experiences with a topic can expand learning for other students. In short, it extends the classroom discussion beyond the classroom.

A Facebook group is also ideal for teachers using the flipped classroom. Post videos, photos, documents, and other resources on the group's wall so that students can access them before class or while working on their assignments.

Of course, content management systems can offer the same opportunities for announcements and resources. However, because many older students and parents already have Facebook on their phones and tablets, they have constant access to course information without having to log in to a completely different system.

START A TOPICAL TWITTER FEED

Like Facebook, Twitter offers a quick way to post class announcements and reminders as well as real-time information on class field trips (perfect for parents who can't tag along). Twitter also helps classes track information on a topic.

For instance, for a class discussing a current event or topic such as career ideas, Twitter can provide up-to-date information, eliminating the need for extensive research. By following the Twitter feeds of experts in the field or even hashtags focused on a current world issue, students can learn more about what is happening in the world around them. You can use this information in a variety of class discussions, research, and writing projects.

Twitter is made not only for reading, but also for responding. Encourage students to interact with others via Twitter by posting their favorite quotes or facts from a particular lesson. Have them interact with experts by tweeting questions or comments. Many organizations offer Twitter chat sessions with which students can interact.

REQUIRE STUDENTS TO BLOG

Student writing improves the more they do it. Instead of traditional writing projects, blogs create great opportunities for students to write and display their writing on a larger scale. The topic ideas are endless. Have students reflect on lessons or field trips, document research for a larger project; or review movies, books, or audio recordings. Ask students to illustrate their thoughts with photos or videos.

By having students read each other's blog posts, they will create a stronger community with one another, discovering shared experiences and reactions. Because their work becomes part of the greater World Wide Web, students have increased motivation to carefully consider their language, spelling, and grammar usage as well as how they draw in outside information. In this vein, blogging can be an excellent segue into a discussion on plagiarism, voice, and writing style.

POST STUDENT VIDEOS TO YOUTUBE

Like Facebook, YouTube is an excellent option for flipped classrooms in that students can watch lectures and resources before entering the classroom. We have all probably shown a YouTube clip or two to illustrate a point in the classroom. Instead of watching material created by others, why not have students create their own material?

Similar to blogging, the opportunities for student-created video are plenty. Students will enjoy watching each other explain a concept, review a book or movie, stage their own interpretation of a scene from a play, create public service announcements, or report on news stories. Again, like blogging, since the material will be seen by a wider audience, students will be more apt to do their very best in creating a video, and they will enjoy being able to express their creativity as they connect more deeply with course material.

SHOWCASE STUDENT WORK ON INSTAGRAM

If a picture is worth a thousand words, imagine what a carefully crafted class Instagram feed can say. Instagram can showcase student work by offering a place to feature student artwork or even interesting details about a student (i.e., a "meet a student" photo journal). Start a scavenger hunt in which students post pictures of items focused on a certain letter or theme. Have students post photos of items related to their favorite book or historical figure.

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A FINAL WORLD ON SOCIAL MEDIA

Privacy concerns are always an issue whether using social media for personal or educational use. Please read all social media platforms’ privacy pages, and ensure that your class feeds are set to private to protect students’ work. Review your school’s social media policy and if necessary, have parents sign consent forms for posting their child’s work online. Furthermore, make sure that students are well versed in etiquette and other proper use of technology.

IN SHORT

Since students are already using social media away from the classroom, integrating it into the classroom helps students learn best practices for social media and offers an interesting new twist on lessons.

8. STRATEGY FOR EVALUATION

a. Training Session - STRATEGY FOR EVALUATION

Session 03	Strategy for evaluation	
Duration:	210 min	
General Objective:	Learning the process of strategic evaluation of implementation of ICT in educational institution	
Specific Objectives:	The learners to be able to: <ul style="list-style-type: none"> • Make assessment of integration of ICT in educational institution • Use the tool for assessment of integration of ICT in educational institution • Make analyses of results of assessment on integration of ICT in educational institution 	
Materials needed:	<ul style="list-style-type: none"> • Tool for assessment • Manual for assessment 	
Specific Objective and Content	Learning methods and duration	
<ol style="list-style-type: none"> 1. Understanding the areas of assessment depending of the indicators 2. Using and understanding the tool for assessment of integration of ICT in educational institution 3. Interpretation of the results from the given tool. 	<ol style="list-style-type: none"> 1. Learner's knowledge diagnosis about the topic to deal with (10 minutes). It's done with the interrogative method, questionnaire. 2. Presentation of the objective of the session by the tutor (10 minutes.) 3. Theoretical presentation of the training content of the session (60 minutes.) The tutor will introduce for assessment of integration of ICT in educational institution using the same tool and explaining the process step by step. During the presentation, they will ask some questions to the students to test the monitoring of the explanation. 4. Practical activity. The tutor will introduce the practical activity to do, the process to do it, the expected results and the time to do it. Fulfillment of the activity (60 minutes.) 5. Analyses of the results (50 minutes.) 6. Open discussion (20 minutes). 	

b. Training Materials - STRATEGY FOR EVALUATION

While it would be difficult to deny the value—even the necessity—of bringing technology into schools, evidence from the past decade provides strong evidence that misguided policies and funding for internet communication technology (ICT) in education may fail to have the desired education outcomes, while costing more than other education interventions.

Research suggests that simply putting computers into schools is not enough to impact student learning. That said, specific applications of ICT *can* positively impact student knowledge, skills and attitudes, as well as teaching practices, school innovation, and community services. Monitoring and evaluation should be an integral component of any planned ICT4E program and should be factored into planning before a project starts.

Evaluation is the final step in the planning cycle and provides the basis for the next planning cycle. It is at this point that the school assesses how well it has met the targets set out in the e-Learning Plan overview and whether or not the priorities identified there have been addressed. In reality, the process of evaluation requires ongoing review and reflection and is facilitated by good monitoring procedures. The school development planning services provide comprehensive guidance on strategies to evaluate the E-Learning Plan. Much of this advice is also relevant to the evaluation of the school’s e-Learning Plan

1. School ICT culture

- Quality assurance and improvement

Quality Indicator	Evidence
Review and self-evaluation	<ul style="list-style-type: none"> ▪ Regular reviews and self-evaluation activities are planned ▪ Results of review and self-evaluation are recorded ▪ Documentation based on implementation of review and self-evaluation are in place. ▪ ICT quality review is integrated with other quality assurance arrangements
Action planning and implementation	<ul style="list-style-type: none"> ▪ Action planning documents are available. ▪ There is a link between results of self-evaluation and action planning ▪ Implementation documents contain timescales, responsibilities and intended outcomes ▪ Evaluations of previous action plans are available
Monitoring and revision	<ul style="list-style-type: none"> ▪ The impact of actions on intended outcomes is monitored and evaluated ▪ Results are used to inform future development ▪ When it is clear that aims are not met, appropriate action is taken

- Learner use

Quality Indicator	Evidence
Development of ICT skills	<ul style="list-style-type: none"> structured opportunities for the development of ICT skills exist***** Learners are reflective and confident about their ICT skills Learners are able to appropriately select ICT tools to complete tasks and projects Learners become more autonomous in their use of ICT as they progress through the school Learners are aware of issues concerning plagiarism, intellectual property, safe use of the internet Learners know how to edit and share digital materials and data Learners know how to access and use regional, national and European online sources and tools
Enhancement of learning	<ul style="list-style-type: none"> Learners use ICT to work in teams and with others ICT supports independent learning Learners are engaged and motivated by the use of ICT ICT supports creativity throughout the curriculum ICT enables students to show and share their performance and outputs with others (inside and outside the establishment) ICT enables learners to connect learning inside and outside school

- The teaching process

Quality Indicator	Evidence
Developing pupils' ICT capabilities	<ul style="list-style-type: none"> Teachers stimulate pupils to develop their ICT skills Teachers ensure that the ICT curriculum is covered Teachers support learners' critical thinking to develop appropriate attitudes towards plagiarism, intellectual property, safe use of internet
Use of ICT to enhance teaching	<ul style="list-style-type: none"> ICT is used across all subjects Teachers use a variety of ICT applications in their teaching ICT is integrated in a variety of teaching approaches Teaching staff use online communication to support learners Teaching staff use network, VLEs and intranets to show and share materials and student performance ICT is used to support more able learners and offer additional materials
Teaching staff competence and confidence	<ul style="list-style-type: none"> Teaching staff know how to use connected devices and sources Teaching staff know how to prepare, edit and share digital materials Teaching staff know how to access and use regional, national and European online sources and tools Teaching staff actively share experiences, new tools and sources through ICT and know where to obtain expert knowledge Teaching staff are aware of current resources and best practice in the use of ICT to support learning in particular curricular areas

- Administrative use

Quality Indicator	Evidence
Identifying issues impacting learning and teaching	<ul style="list-style-type: none"> ▪ ICT is used to monitor attendance and track absenteeism ▪ ICT is used to monitor achievement and attainment ▪ ICT is used for assessment: diagnostic, formative, summative ▪ ICT is used to identify both more able learners and learners who need additional attention ▪ ICT is used to identify actions to improve learning and teaching ▪ ICT is used to monitor and record learner performance and progress
Communication is supported	<ul style="list-style-type: none"> ▪ There is a school website, containing information for stakeholders (profile, strengths and weaknesses) ▪ The school uses ICT to communicate with others (schools, community) ▪ Materials, time tables, and resources are available for pupils and staff from home ▪ Internal policy briefs, newsletters etc. are available online

2. Resources and infrastructure

Quality Indicators	Evidence
The available resources reflect the needs and vision of the school	<ul style="list-style-type: none"> ▪ There are arrangements (audits, needs assessments) to identify resource requirements <ul style="list-style-type: none"> ○ Hardware and connectivity ○ Replacement issues ○ Learning resource needs ▪ Quality and quantity of hardware (PCs, peripherals) reflect learners' and teachers' needs ▪ Learning resources (software, internet resources) reflect learners' and teachers' needs ▪ Resources are available for learners and teaching staff throughout the day and from several locations (also outside school) ▪ All connected devices are protected from virus, spam etc.
The deployment of ICT resources supports effective learning	<ul style="list-style-type: none"> ▪ Resources support different pedagogies (e.g. instruction, group work, project work) ▪ Learning environments are safe and stimulating ▪ Assistive technologies are used where appropriate ▪ ICT is used to make learning more independent of place and time
Support systems optimize the use of ICT	<ul style="list-style-type: none"> ▪ Staff and students can access technical support so that the flow of learning and teaching can be maintained when problems with ICT occur ▪ There are opportunities for, and there is uptake of continuing professional development in ICT for teaching staff ▪ Administration systems are interoperable

3. ICT integration in the curriculum

Quality Indicators	Evidence
Meeting local, regional and national requirements	<ul style="list-style-type: none"> Planning for the ICT curriculum – or ICT in the curriculum – reflects the school’s own intentions Where there is a national curriculum or local/regional requirements, curriculum planning takes these into account.
Coherence, balance and consistency	<ul style="list-style-type: none"> ICT skills development is coherent throughout the curriculum –across years and subjects The ICT curriculum makes demands on pupils appropriate to their age, ability and previous learning The ICT curriculum ensures a broad range and balance of ICT applications and contexts
New developments in ICT, business practice and pedagogy	<ul style="list-style-type: none"> Improvements are implemented in response to reviews of existing learning and teaching policy and practice The implementation of new developments (technological, competences) in ICT is planned Implementation of appropriate teaching pedagogy is planned

4. Continuing Professional Development

Quality Indicators	Evidence
The Continuing Professional Development plan meeting local, regional and national requirements	<ul style="list-style-type: none"> School curriculum identifying the needs of Continuing Professional Development plan Teaching staff have individual Continuing Professional Development plan individual Continuing Professional Development plan reflects the school’s own intentions individual Continuing Professional Development plan reflects the need of improvements of the teaching staff skills and competences Where there is a national Continuing Professional Development plan or local/regional requirements, Continuing Professional Development plan takes these into account ICT presence in the CPD meeting local, regional and national requirements
ICT coordinator supports Continuing Professional Development	<ul style="list-style-type: none"> ICT coordinating teacher is: <ul style="list-style-type: none"> providing support and advice to teachers on how to integrate ICT into their classwork assisting in and facilitating peer-to-peer exchange and sharing Assisting teachers in their continuing professional development. This can be achieved by providing information on relevant ICT courses, sharing relevant articles and/or podcasts and by sharing best practice with colleagues. discussing e-Learning regularly at staff meetings having formal/informal discussions with individual staff members

	<ul style="list-style-type: none"> ▪ sharing ideas, resources and/or classroom management approaches that prove positive or effective for individual teachers with other staff members ▪ sharing effective lesson plans, hints or tips with all staff members on the school network (LAN). ▪ identify suitable professional development courses for the school or subject department ▪ arrange for whole staff professional development to be carried out within the school where this is appropriate ▪ distribute or provide reference to relevant articles, podcasts, etc., on the use of ICT in learning and teaching among staff ▪ Inform teachers of relevant professional development programs, which may include online and face-to-face post-graduate accredited courses.
<p>System for Continuing Professional Development is presented in the school</p>	<ul style="list-style-type: none"> ▪ Continuing Professional Development plan of teaching staff is monitored and recorded ▪ Tool for evaluation of CDP needs is present in the school ▪ Strategy for dissemination exists in the school ▪ Teaching staff uses possibilities form local, regional and national initiatives for CPD

5. Leadership and Vision

Quality Indicators:	Evidence
<p>There is a clear vision for the use of ICT</p>	<ul style="list-style-type: none"> ▪ The vision is formulated in an official document ▪ The school's vision has been formulated through a process of collaboration with the school's stakeholders ▪ The vision is regularly reviewed
<p>There is a strategy to realize the vision</p>	<ul style="list-style-type: none"> ▪ E-Learning Plan is considered an integral part of general school planning (staffing, professional development, ICT resources and curriculum planning) ▪ The impact of ICT on all areas of teaching and learning and school organization is regularly reviewed ▪ Stakeholders are informed about relevant developments
<p>Management clearly identify the need of ICT in education</p>	<ul style="list-style-type: none"> ▪ Management is supporting the role of the ICT coordinating teacher ▪ The management is ensuring that all staff members have a copy of the plan and that their roles are understood fully. ▪ monitoring how the plan is progressing and consulting regularly with staff members, both formally and informally, in relation to the plan ▪ facilitating an annual evaluation of the ICT and its continuing year-on-year progression ▪ ensuring the involvement and support of the Board of School Management in the ICT process ▪ Ensuring that the objectives of the E-Learning Plan are met. ▪ school leadership is proactive in supporting the teachers in their

WEBSITE

As the project name includes "digital" is the main word that is considered in all the work done throughout the timetable of it. As a result of this, the project also includes a website. This website aims at being a digital tool to help teachers all around the world to innovate their lessons, motivating their students and thus, being able to capture more and more students, possibly contributing to a decrease in school drop-outs, one of the main priorities of the Erasmus + program.

The website was the responsibility of the partner of Spain, Inercia Digital, however, it counted on the feedback and opinions of all the other partners.

By accessing www.digitalschools.eu, you can find all of the information on the project including all of the ones in this handbook and some additional information such as, the project application, more detailed information on each partner and also the full document for the comparative studies. The website is available in English, the worldwide language and also in the official languages of all the partner countries: Macedonian, Spanish, Portuguese and Turkish.



CONCLUSION

This Erasmus + project contributed to on an early stage to identify potential problems, needs and limitations of the schools and their teachers in terms of ICT tools. As a result, all partners defined a plan that they adapted to the information collected in the questionnaires directed to school staff in order to create digital tools for schools that will be useful and possible to be used considering the existent tools at them.

The handbook is a result of all the research done and thus, represents useful tools for teachers to use in the classroom, making their lessons much more digital and more adapted to our youngsters, who are born in a digital era. We are strongly convinced that more innovative and updated teaching methods will indeed capture the attention and motivation of the students, while creating a fun, informal classroom environment, where students feel comfortable to learn and at the same time get their knowledge widened through simple digital teaching methods.

REFERENCES

- Case Studies (1st ed.). Retrieved from <http://www.pdsttechnologyineducation.ie/en/Planning/e-Learning-Case-Studies/Case-Studies.pdf>

