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LOGGED-ON

Empowering learning with technology



INSTITUT CAL·LÍPOLIS

STATE OF ART REPORT

LOGGED-ON PROJECT

DECEMBER 2015

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1. Introduction

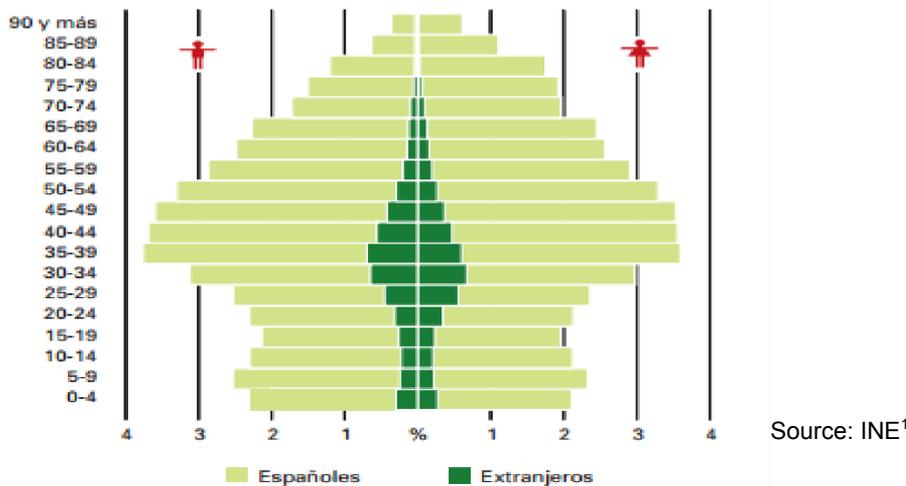
Catalonia (Catalunya in catalan) is a Western European Mediterranean country with the status of an autonomous region of Spain. It is located on the Northeastern coast of the Iberian Peninsula bordering France and Andorra to the north, Aragon to the west, bordering south with Valencia and east by our beloved Mediterranean Sea.

With an estimated population of 7.508.106 in 2015, it is the second most populated autonomous region in Spain.

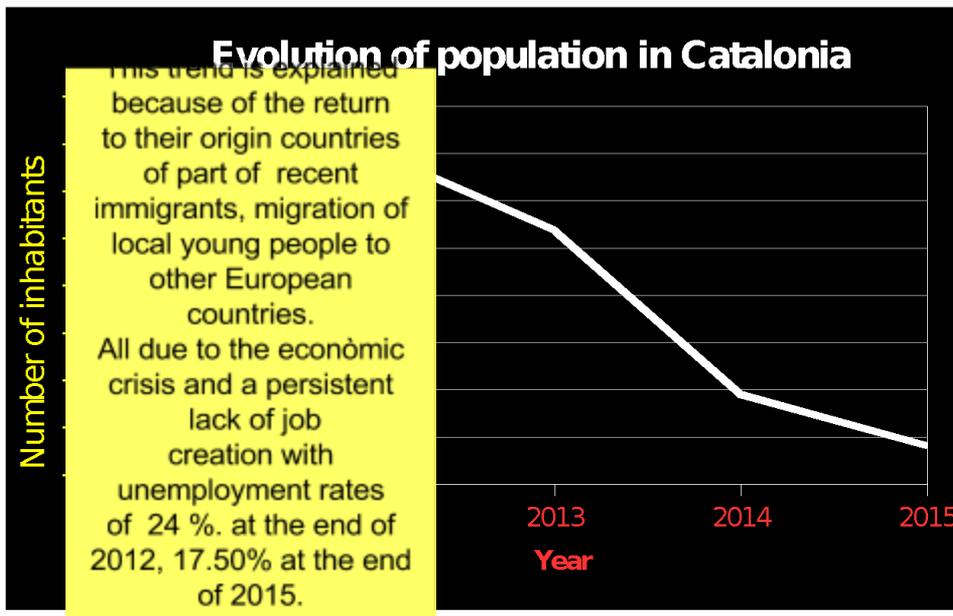
The language of Catalonia is Catalan, except in the Aran Valley where it is Aranese. Both Catalan and Spanish, the official language of Spain, are official throughout the country. Occitan, called Aranese in the Aran Valley, is also official in Catalonia. According to data from the Statistical Institute of Catalonia, 36% of Catalans have Catalan as their main language, 48% have Spanish and 12% have both languages. The rest of the resident population of the community regularly use other languages. This situation adds an extra complexity to learning and teaching processes.

2. About demographics

As you can see in the graphic about Spanish population, it shows a typical pyramids with a shape corresponding to an aged population profile with a low birthrate and a high life expectancy.



This situation is similar to that of Catalonia, where a mild decrease in population in recent years is shown in the following trend graphs. In 2015 the estimated population of Catalonia is about 7.508.106 people.

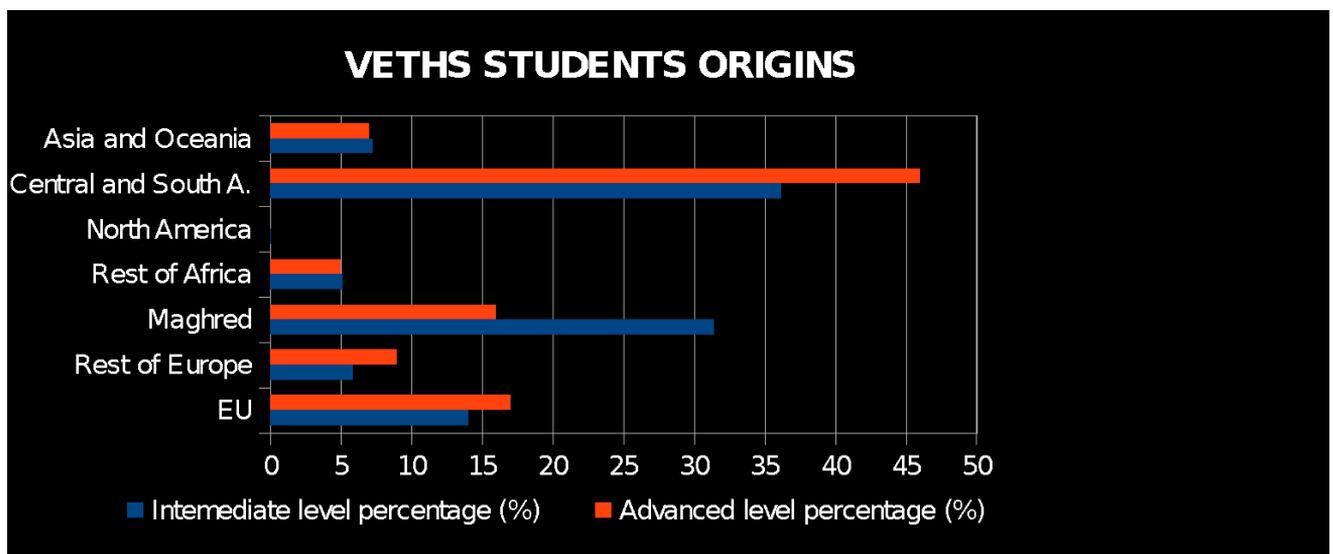
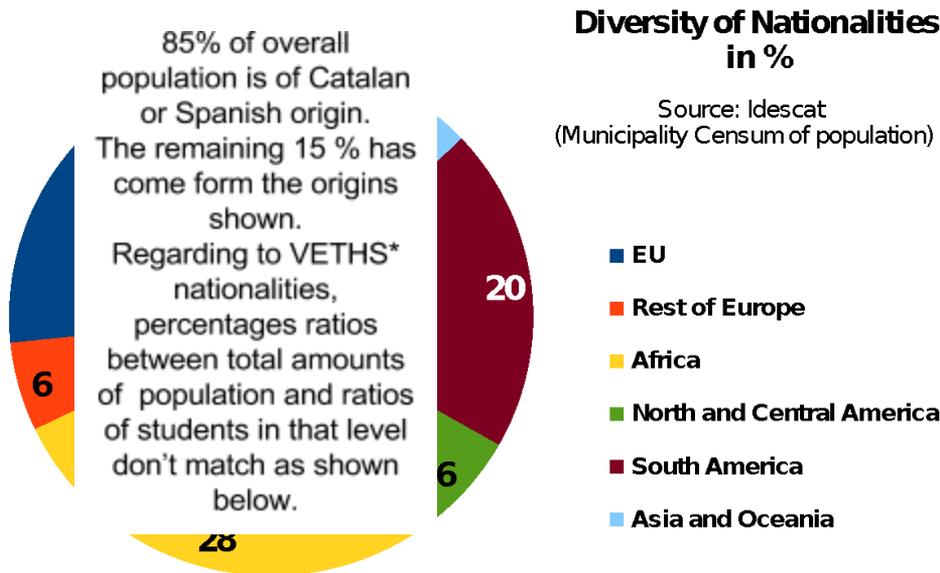


Evolution of the population of Catalonia in absolute terms. Source: Idescat²

The demographic distribution of Catalonia shows that approximately 16 million live in the capital, the city of Barcelona (21% of the population of Catalonia); 4.776.107 million live in the metropolitan area of Barcelona (64% of the total population of Catalonia), making it one of the largest metropolitan areas in Europe. Conversely, the less populated areas of Catalonia are the Pyrenees and the Terres de l'Ebre (southern Catalonia watered by Ebre River).

The area of Tarragona, where Institut Cal·lípolis is located, is 90 km. south of Barcelona. It has got a population of around 350.000 with medium size cities such as Tarragona 130.000, Reus 105.000, Salou 15.000, etc.

Catalonia has received several waves of immigrants throughout the twentieth century. In 1900 the population of Catalonia was of just two million people. In 1960 it already had over five million people. This growth was not only due to natural demographic growth but to the arrival of a great amount of immigrants from other regions of Spain, mainly Andalusia, Murcia and Extremadura. A second wave of immigrants had arrived since the early 1990s, this time not only from other regions of Spain but from abroad. The chart shows the distribution by origin of the 15% of non Spanish origin population in Catalonia in 2015³.

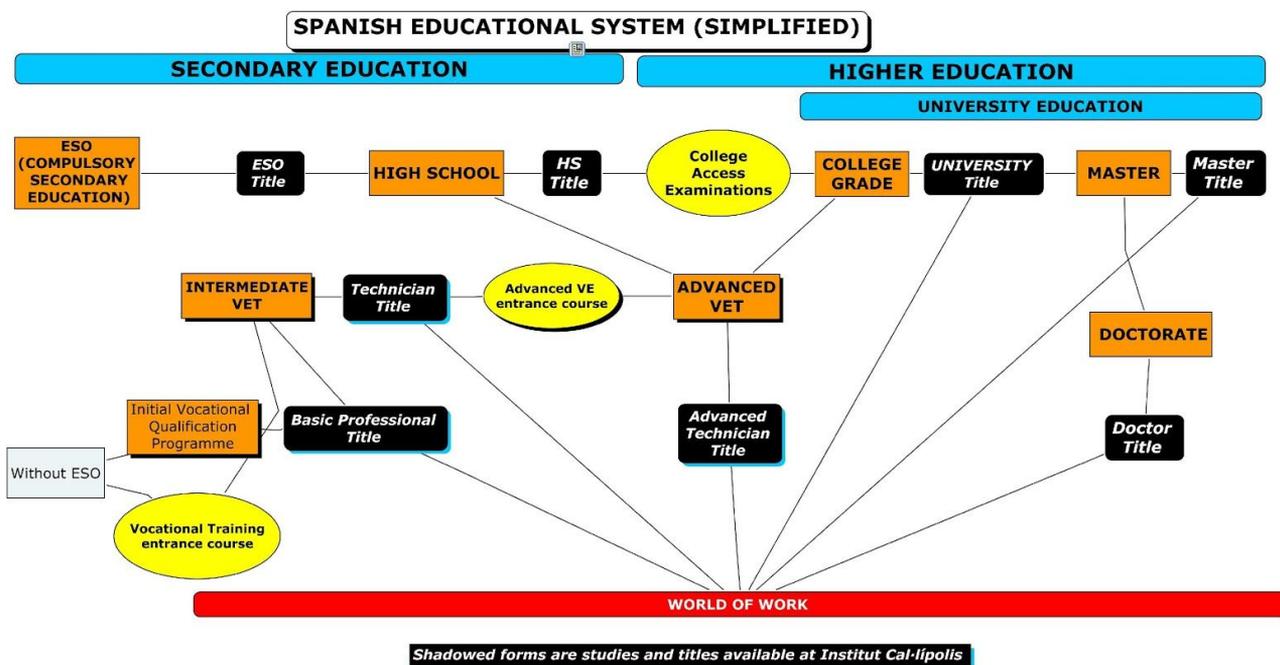


Source: Idescat⁴

This also explains the variety of languages used, ethnics origins and religions among students. The predominant religion is Roman Catholic which comprises between 52 and 60% of the population. Atheists and agnostics account for a 20%, while other faiths account for the rest. Among them the one with the largest number of followers is Islam which accounts for an 8% of the Catalan population.

Catalan educational context

Here is shown a simplified outline of the Catalan education system⁵.

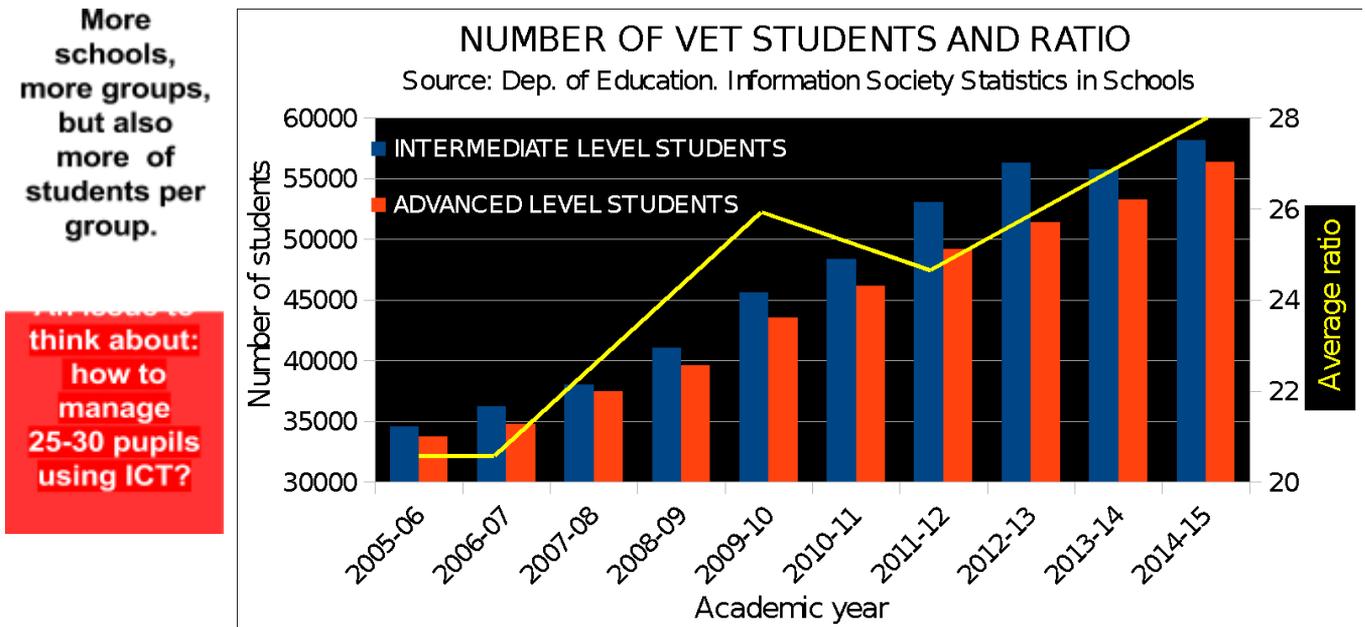


Continued cuts in education budgets due to the economic crisis have led to widespread discontent in society in all related sectors: students, teachers and families. The crises has also led to a rise in enrolment in all schools in post-compulsory education.

In general, VETHS can be divided into government, private and charter. The latter are institutions of private nature (not created by the administration) but heavily subsidized by Catalan government. All data shown in this State of the art report, unless otherwise said, are related to government secondary schools.

The evolution in the number of students in vocational schools has suffered in recent times a huge increase. However, the increasing of VETHS offering these studies as well as the number of available groups is much smaller than the increase in the number of students. In both medium grade and advanced grade, the ratio of students per classroom has been increased significantly in

recent years, it stands at 28 students per group on average. Data is shown in the following bar chart.



Source: Dep. of Education. Information Society Statistics in Schools⁶

4. ICT Situation

As we know the Internet has revolutionized the search for information, not only in our homes but also in our schools. Not only that, the way we communicate, interact, even how we think has completely changed in recent years, and especially among young people.

To contextualize all this, we think that we have to talk of internet access, deployment of smart phones and tablets, the equipment of our schools and the skills of teachers. In many of these areas we have managed to gather facts and figures, but in others, for example, percentage of smartphones, we only have the information we have obtained from our own experience.

- **Internet Access**

74.4% of households have Internet access, almost five points more than in 2013. For the first time in Spain there are more Internet users (76,2 %) compared to computer users (73,3%).

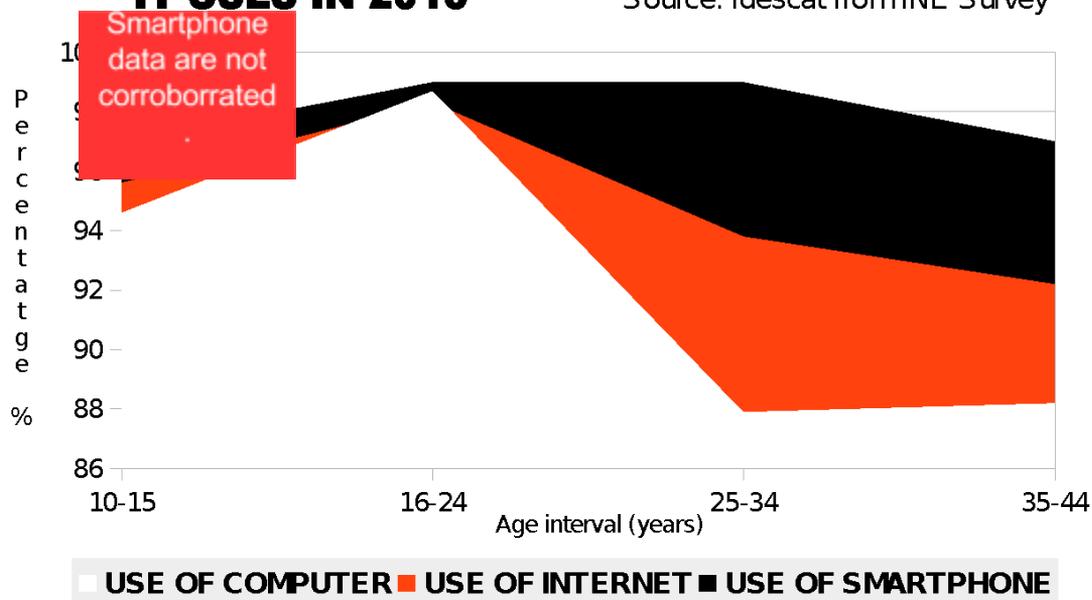
77,1% of Internet users accessed the network via mobile phone.

More than half of the population (51.1 %) are participating in social networks⁷. We believe that this figure arises to nearly 100% among our students.

As it can be seen in the following graph, the use of Internet is higher than that of computers and the use of smartphones is growing very fast⁸.

IT USES IN 2015

Source: Idescat from INE Survey



- **Using cloud services (cloud services)**

30.9% of Internet users in the last three months used spaces in Internet for storage, to save files for private purposes, and 26.0% for sharing files. In short, considering the above two aspects, almost one-third (32.4%) of Internet users in the last three months reported having used Storage space on the Internet, either to save or to share files.

Regarding the material stored or shared in those storage spaces in Internet, the listed products are: Photo (83.8%); text, spreadsheet or electronic presentations (66.6%); music (42.1%) and videos (including movies) (40.5%). 6.4% of people who have used these storage spaces in the Internet declare to have paid for these services.

Other practices frequently used by Internet users to share files are emails with associated files (66.3%), other media without Internet use (USB sticks, DVDs, etc.) (58.0%) and personal websites or social networks (46.5%).

- **Participation in social networks**

67.1% of Internet users in the last three months (51.1% of the population 16 to 74 years) participate in general social networks like *Facebook*, *Twitter* or *Twenty*, creating a user profile or sending messages or other contributions.

The more participatory are students (92%) and those aged 16 to 24 years (91,3 %).

By sex, the participation of women (68.9 %) is higher than that of men (65.3 %).

It is estimated, even though no data has been collected for the age range of students, 99% of them have a smart phone with an Internet connection.

5. ICT Context at schools

This section offers a summary of the results of the Statistical Society Information on Schools of academic year 2014-15⁹. It's obvious that penetration of *smart phones* with flat rates among students and teachers is extraordinary and must be considered profoundly.

Data selected are those concerning to compulsory and non compulsory secondary schools in Catalonia.

1. Ratio students/PC.

The ratio of year 2014-2015 was slightly lower than the previous year for both each educational sector and for the overall system:

ACADEMIC YEAR	RATIO STUDENTS/PC
2010-2011	4,2
2011-2012	3,1
2012-2013	3,8
2013-2014	3,8
2014-2015	4

- Public sector 3.7 students/computer
- Private sector 4.8 students/computer
- Public and private sectors 4.0 students/computer.

2011-2012 "One per One" programme

- 2. Type of computer:** Two out of every three are desktop computers. The rest relates mainly to laptops. Tablets have a small presence although it is slowly growing, especially in private schools.
- 3. Computer uses:** Three out of four computers were intended for educational purposes, and also three out of every four are connected to the Internet.
- 4. Peripherals:** Plasma screens have a very high degree of penetration (95.5 %), followed by interactive whiteboards (91 %), wireless routers (78.2 %). The most common peripherals (printers, scanners, etc.) have an universal presence.
- 5. Connection:** All Catalan secondary schools have an Internet connection. Optical fiber has become the dominant type of connection, with 74 %. ADSL is behind with 34.5 %, with a residual presence of other types of connections. (Usually centers can have two or more types of connection).

The connection speed has also grown substantially: at the moment 55.8 % of schools have more than 20 Mbps.

6. **Website:** The percentage of schools that have a website is 96.9%. Most of them only in Catalan.
7. **Networks and local intranet:** Three out of four centers have a local network. Of these, just over half have wireless and intranet.
8. **Teachers and ICT:** The percentage of teachers who use ICT continues its upward trend. Therefore, more than 80% use them as a teaching tool and over a 90% employ it for their current tasks.

Regarding the knowledge that teachers have of ICT it continues to improve, albeit slowly. The percentage of those who state that their level is very low is of 1,5% (2002-2003: 10.1%). Most teachers stand at an intermediate stage, while those who say they have high knowledge is up to 10% of the total (2002-2003: 6.8%).

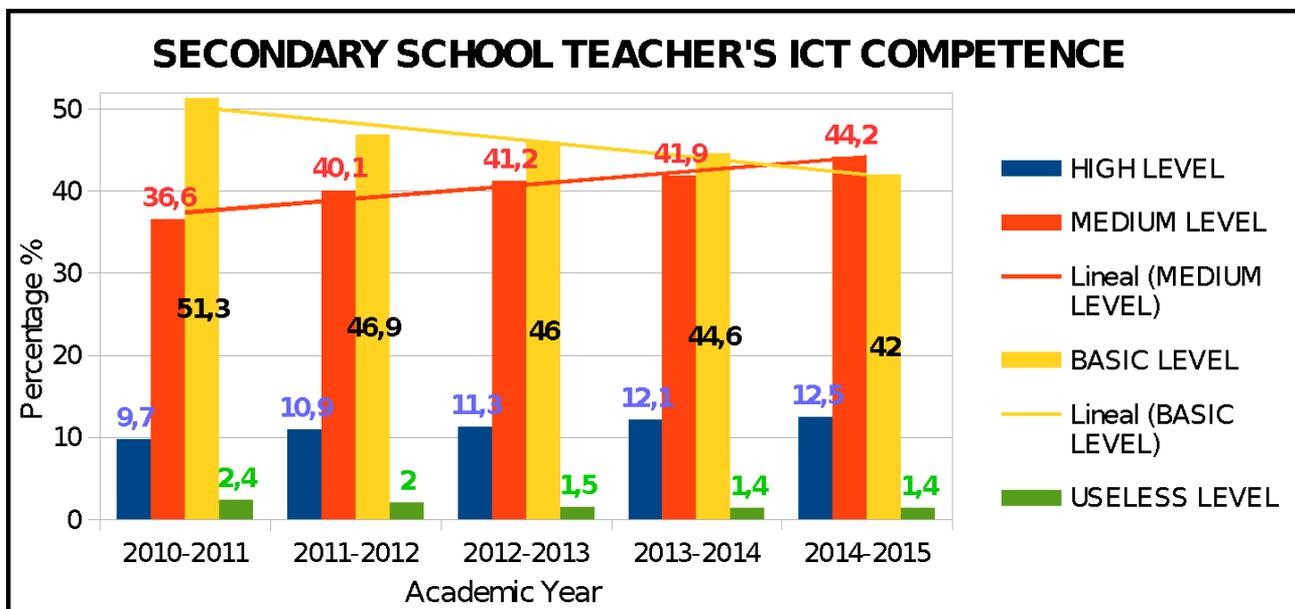
More specifically, the respective values are:

Top level 12.5% (programming and network management systems skills)

Intermediate level 44.1% (broad knowledge of computer tools)

Basic level 42.0% basic knowledge of computer tools and Internet browsing).

Null level 1.4%



Source: Department of Education.

Department of Education of Catalan Government (Generalitat de Catalunya) is carrying out a diverse range of policies and initiatives to define strategic outlines for developing both pupils and teachers ICT skills towards 2020.

ICT is **TIC** in Catalan. The term **TAC** (Technology for Learning and Knowledge) is widely used.

For instance:

- Pla TAC, not specially defined for VETHS (See Annex 11)
- “Quality in Learning” Events. VET best practices:
<http://xtec.gencat.cat/ca/innovacio/fp/pqmc/jornades/tretzena/> (last access 10/11/15)
- mSchools project: The aim of the Schools initiative in the Mobile World Capital in Barcelona is to fuel the academic ecosystem, enhance learning outcomes and embrace mobile technologies as an opportunity for change.
<http://experts.mobileworldcapital.com/eng/pages/home> (last access 10/12/15)
- Uses of Mobile technologies at schools
http://consellescolarcatal.gencat.cat/web/.content/consell_escolar/actuacions/publicacions_c/ec_en_pdf/static_files/Les-tecnologies-mobils_angles_web.pdf (last access 09/12/15)
- InnovaFP (VETHS Innovation): The purpose of the program is to collaborate with companies and organizations from around the center of influence to develop innovation and knowledge transfer. <http://xtec.gencat.cat/ca/innovacio/fp/transferencia/> (last access 19/11/16)
- 2020 Digital Agenda <http://www.idigital.cat/que-es/que-es> (last access 09/01/16)

6. Institut Cal·lípolis Context

According to our data, the city of Tarragona and our Institute have a very similar situation to the set of Catalan ratios.

	CATALONIA CAT		TARRAGONA TGN		CAL·LÍPOLIS CAL		
	Number of Centers	Total Number of students	Centers Tarragona	Students TGN	Students CAL·LÍPOLIS	RATIO CAT-TGN	RATIO TGN-CAL %
CFGM (Intermediate)	367	58149	6	2070	700	4	34
CFGS (Advanced)	315	56393	4	2586	650	5	25

Font: Dep. Ens. Servei d'indicadors i estadística¹⁰ and own data.

In November 2015, the total number of students in Cal·lípolis is 1445, 1350 of them studying in-person VET. These students are grouped into 49 classrooms, some splitted. The trend in recent years has been to increase the number of students and the groups. Despite of this, the relationship between the number of students per class is slightly growing year after year, it stands at 28 students per class in the year 2015-2016. Unfortunately, dropout rate still remains a concern, specially in the intermediate level.

Communications

Institute Cal·lípolis has its corporate image and has got a web site at www.institutcallipolis.cat

The website gives access to a private part only accessible to teachers, mainly used for specific Classroom reservations.

Working is in progress to update it and to have a multi-language translation system.



Communication inside the educational community

- Based in the use of the e-mail.
- Management and coordinators: @xtec.cat e-mail or @institutcallipolis.cat (Gmail accounts with institutional domain).
- Teachers: @xtec.cat e-mail or personal.
- Students: they use their private e-mail accounts.
- Institutional mail in the future for all students?

Communications among members of the groups or among members of the groups and teachers

- Most groups organize their own chat services in **WhatsApp** or **FACEBOOK**. In a few cases teachers or tutors establish them at the beginning of the course. Most of the times students organize themselves and sometimes «invite» teachers.

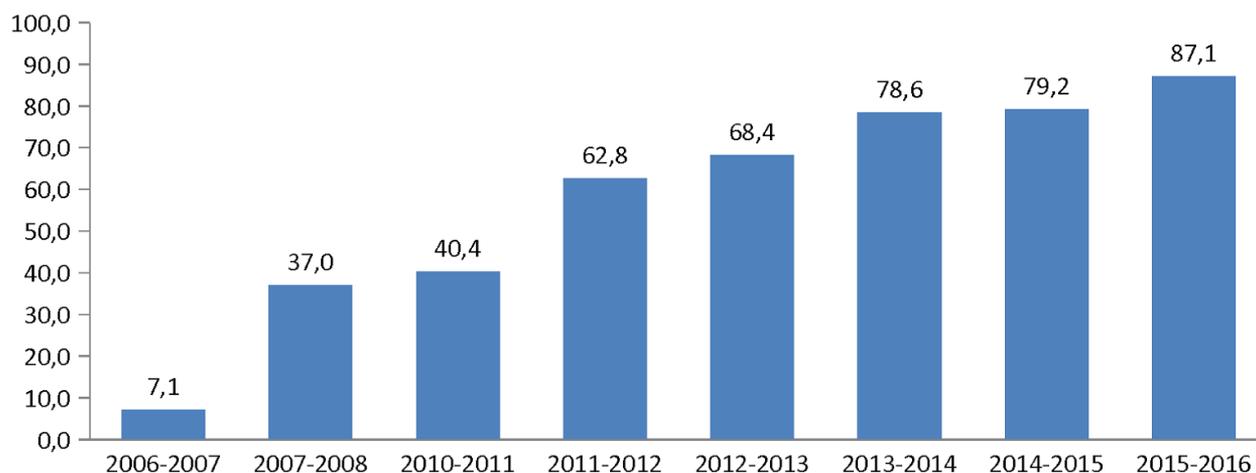
So far it has been an spontaneous implementation, should there be some guidelines in the future for teachers at the beginning of the course?

A

Web 2.0 tools

- LMS: **moodle**, most formal communications between teachers and students happen inside this platform.

Moodle is has been used in Cal-lípolis for eight years, the evolution of the percentage of use of this virtual learning platform has been increasing course after course. Nowadays, our school offers 380 different subjects, 331 of them have the support of the Moodle virtual platform which represents **87,1%**.



- Document management system: **ISOTOOLS**, mainly used by management, coordinators and Heads of Department.
- Both free and licensed software is used. For instance, **Farmatic** the software that is used to manage pharmacies in the real world is also used in our classrooms.

Dropbox is the most common on-the-cloud sharing platform.

- Absence and substitution management: **ISOTOOLS** additional service, specific communications service tool that permits the management team to cover any absence with a substitute.
- Secretary and Course Administration tool: **SAGA**, used by administration services, secretary staff, tutors and teachers. Common to all Government schools in Catalonia is undergoing renewal
- Roster: **GASSIST**, used by teachers to check class attendance is opensource

Social communication

FACEBOOK accounts maintained by teachers of different departments have had a great impact in studies promotion and in community building.

BUSINESS DEPARTMENT <https://www.facebook.com/departamentfol>



PERSONAL IMAGE DEPARTMENT <https://www.facebook.com/institutcallipolis.imatgepersonal/>

PHARMACY DEPARTMENT

<https://www.facebook.com/CFGM-Farm%C3%A0cia-i-Parafarm%C3%A0cia-Institut-Call%C3%ADpolis-448256142016641/?ref=hl>

DIETETICS DEPARTMENT <https://www.facebook.com/calipolisdietetica>.

We have no active institutional accounts of FACEBOOK, TWITTER OR GOOGLE+.

To be explored

Hardware

Computers available in our premisses	Number of PCs	Number of students in Institute Cal·lípolis: 1350
6 Computer classrooms	121	
Classroom with PC and projector	69	
Interactive boards	2	
Library PCs	6	
Administration	17	
PCs used by students in their classrooms	196	

Departments + Teachers Rooms	31	Ratio Student/PC: 6,9
PCs and laptops used by teachers and administration	48	
Total number of PCs available	244	

Repairs and maintenance

Technical service is contracted for security and server management.

3 teachers dedicate 8 hours/week each- 24 h/week They solved more than 500 IT incidents during the last academic year. System communication organized with Google Drive	24 hours/week
Administrator coordinates and buys equipment	2 hours/week
Professional technician provided by Ministry of Education	2,5 hours/week

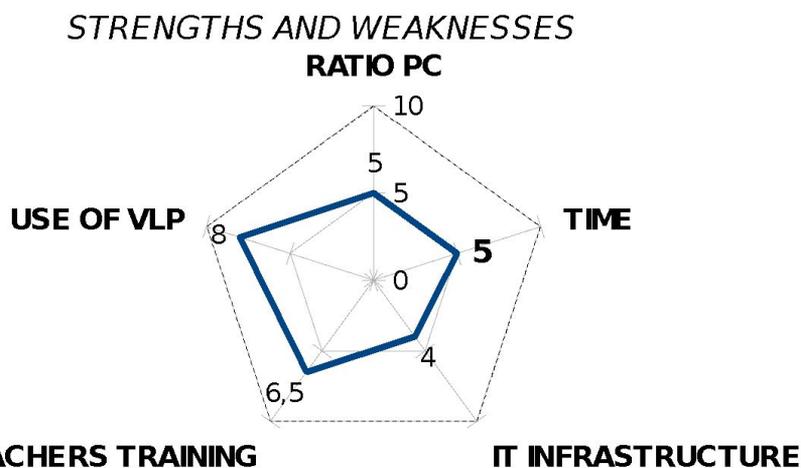
Web 2.0 Context

It seems unavoidable that we need a methodological change in our classrooms as students connect with the world and learn differently and come to post-compulsory schools with skills which need to be focused more in the new technologies and less in contents. So ICT must help our students to have more chances of getting a better long-term employability. For this reason, the Institute carries out these initiatives:

Success in our HS	Reasons	Goals and targets
VLP Moodle use	Well-implanted and managed; poli-use; free	Widen useability and percentage of users.
Use of social networks and website	Increase enrollments, close to students, easy	More contents published, reach more visitors.
Use of technical software	Improve management and specificity	Renew versions, add simulators
Repair service	Staffs	Invest more money and resources; improve planning and mechanics
Performance	Teacher's hard work	Increase free dedication time and resources
Blended learning	Widden offer,	Increase number students

Failures in our HS	Reasons	Goals and targets
Lack of ICT training	Dep.'s budget cuts	Recover at least on internal IT course. Motivate teachers' application for on-line Dep. Courses.
Elaboration of TAC Plan	No need	An ITC Plan is in elaboration right now; an ITC Commission will be created in the following weeks.
Wifi Network obsolete	Open access to Internet is required*	Waiting for Dep. investment on Educational Complex.
High ratio	Budget	Training in methodology and use personal devices. Investment both hard- and software.

*Perhaps we should talk about EMR health issues and what to do if some students can afford to smart phones and flat rates and to access to the Internet. Also about Management and security of an open WIFI network.



Source: Cal-Iipolis' own data

Case studies

We are considering to offer some of these case studies. Some of them have been tested for a long time and some require implentation or futher developing.

- Virtual Safety Tools on Outdoors
- Make-up simulators for Health and Beauty
- Digital Port-folio
- Treasure hunting and webquests
- JClic (Exemple of Gamification)

- 3D printers
- Conceptual trees and Mind mapping

7. Acronyms

VETHS: Vocational and educational high school

INE: National Institute of Statistics (Spanish)

IDESCAT: Catalan Institut of Statistics

GAPMINDER: Dr. Hans Rosling free statistics software. <http://www.gapminder.org/>

ADSL: Asymmetric Digital Subscriber Line

EMR: electromagnetic radiations

8. Siteography

(1) http://www.ine.es/prodyser/espa_cifras/2015/files/assets/common/downloads/page0010.pdf

(2) Municipal census. <http://www.idescat.cat/pub/?id=pmh>

(3) (4) Data of private and public students.

<http://ensenyament.gencat.cat/ca/departament/estadistiques/dades-curs-actual/fp/>.

(5) Adapted from

http://queestudiar.gencat.cat/web/.content/home/estudis/destacats/documents/sistema_educatiu.pdf

(6) <http://www.idescat.cat/pub/?id=aec&n=14&lang=en>

(7) INE: Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares. Año 2014. <http://www.ine.es/prensa/np864.pdf>

(8) Idescat, based in the INE survey of equipment and use of information and communication technologies at homes. <http://www.idescat.cat/pub/?id=ticll15&lang=en>

(9) Statistical Society Information on Schools of academic

<http://ensenyament.gencat.cat/web/.content/home/departament/estadistiques/altres-estadistiques/societat-informacio/Estadistica-de-la-Societat-de-la-Info-2014-2015.pdf>

(10) <http://www.idescat.cat/pub/?id=aec&n=744>

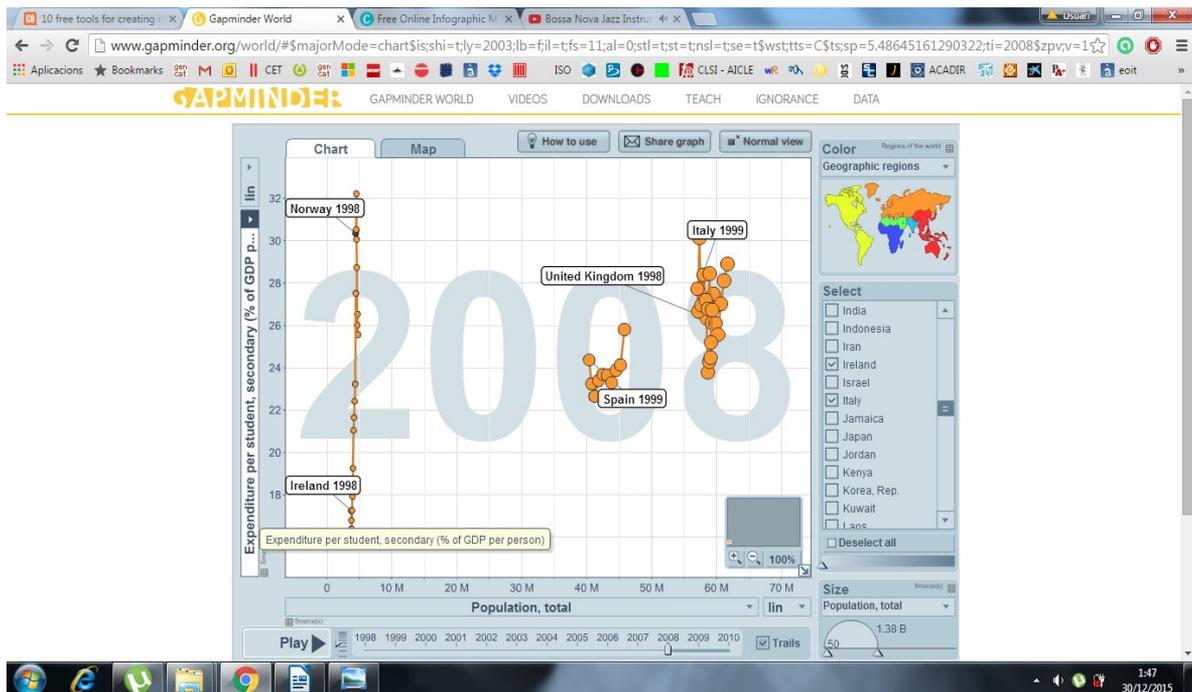
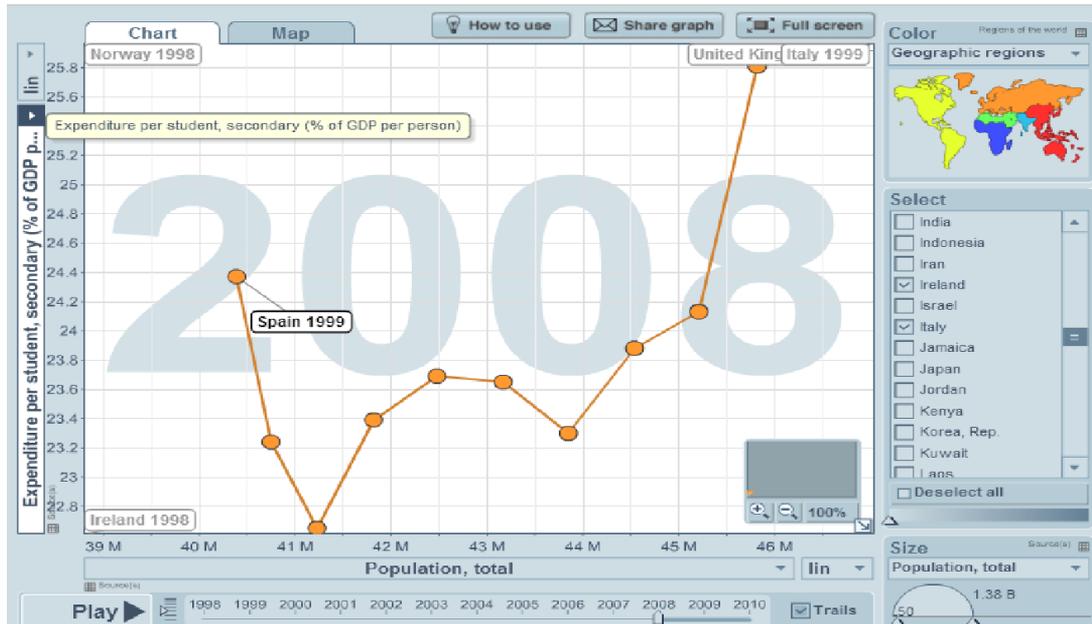
(11) Internal data stats Cal·límpolis School.

ANNEXS

10. Gapminder partner's comparison.

Gapminder is a free software that helps to understand and use statistics and allow us to compare data even at global level. Even though there is not many data about Education, it should be a way to compare us and furthermore.

[http://www.gapminder.org/world/#\\$majorMode=chart&sis=sh;t;lv=2003;lb=f;il=t;fs=11;al=30;stl=t;st=t;nsi=t;se=t\\$wst;tts=C\\$ts;sp=5.59290322580644;ti=2013\\$zpv=v=0\\$inc_x;mmid=XCOORDS;iid=phAwcNAVuyj1iiMAkml1iMg;by=ind\\$inc_v;mmid=YCOORDS;iid=phAwcNAVuyj2iPLxKvvnNPA;by=ind\\$inc_s;uniValue=8.21;iid=phAwcNAVuyj0XOoBL_n5tAQ;by=ind\\$inc_c;uniValue=255;gid=CATID0;by=grp\\$map_x;scale=log;dataMin=194;dataMax=96846\\$map_y;scale=lin;dataMin=23;dataMax=86\\$map_s;sma=49;smi=2.65\\$cd;bd=0\\$inds;example=75](http://www.gapminder.org/world/#$majorMode=chart&sis=sh;t;lv=2003;lb=f;il=t;fs=11;al=30;stl=t;st=t;nsi=t;se=t$wst;tts=C$ts;sp=5.59290322580644;ti=2013$zpv=v=0$inc_x;mmid=XCOORDS;iid=phAwcNAVuyj1iiMAkml1iMg;by=ind$inc_v;mmid=YCOORDS;iid=phAwcNAVuyj2iPLxKvvnNPA;by=ind$inc_s;uniValue=8.21;iid=phAwcNAVuyj0XOoBL_n5tAQ;by=ind$inc_c;uniValue=255;gid=CATID0;by=grp$map_x;scale=log;dataMin=194;dataMax=96846$map_y;scale=lin;dataMin=23;dataMax=86$map_s;sma=49;smi=2.65$cd;bd=0$inds;example=75)

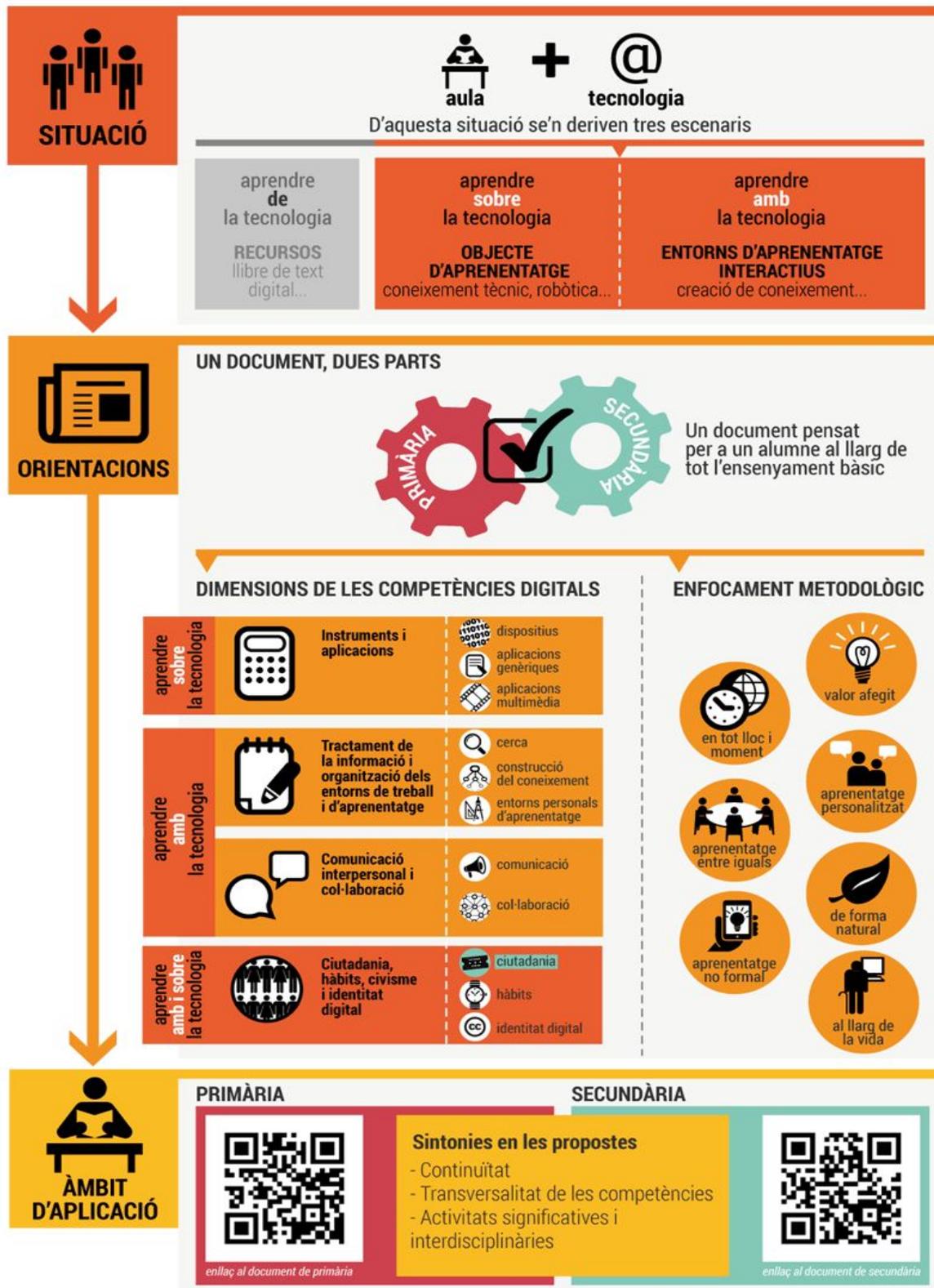


11. Pla TAC

<http://xtec.gencat.cat/ca/curriculum/competenciesbasiques/ambitdigital/infografia/index.html>

(last access 8/12/15)

COMPETÈNCIES BÀSIQUES DE L'ÀMBIT DIGITAL



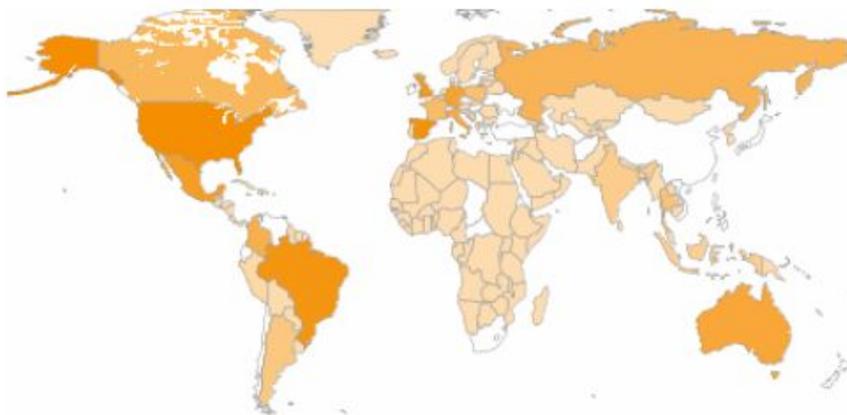
12. moodle

1.- Top 10 countries by registration (Moodle Platform)

Nowadays Moodle is used in 224 countries; the grid shows us the top 10 of those countries as a number of registrations is concerned.

Country	Registrations
Estats Units (EUA)	9,753
Espanya	6,245
Brasil	4,014
Regne Unit	3,294
Mèxic	2,691
Alemanya	2,254
Austràlia	1,893
Itàlia	1,881
Colòmbia	1,791
Rússia	1,615

2.-The World map shows the Moodle spread use.



3.- Moodle Mobile (app)

The official Moodle Mobile application was launched in 2013, with the last year seeing some significant development from the mobile team with a large amount of new features and downloads by Moodle users. The app is available for iOS, Android and Windows.

350 000 downloads

753 sites using Mobile notifications

125 000 mobile notifications sent

23 languages

14 versions released

4.- Sources

- <https://moodle.net/stats/?lang=ca>
- <https://moodle.com/2015/01/29/moodle-2014-overview-by-numbers/>