



Directorate for Education

Centre for Educational Research and Innovation (CERI), OECD

Innovative Learning Environments (ILE)

INVENTORY CASE STUDY

Instituto Escuela Jacint Verdaguer (Sant Sadurní d'Anoia, Catalonia, Spain)

Spain

Students (age 3 to 16) can smoothly progress through all parts of their compulsory education in this integrated pre-primary, primary and secondary school. In this environment, the teacher, rather than providing answers, raises questions. Learning objectives emphasize student autonomy, responsibility and learning skills, in order to enable students to have an active role during inquiry-based learning, cooperative project work on authentic problems, and individual work. Music, drama, yoga, kinesiology and other activities are used to develop students' self-control, self-expression and social skills. In accordance with this methodological approach, there is a new organization of the curriculum as something open and arranged in three areas: instrumental areas, knowledge areas and expression areas (inner knowledge). The school created wide, open learning spaces to facilitate mobility and cooperation among students and teachers. The school makes use of extensive ICT resources, including a virtual learning environment, digital boards, student laptops, a robotics classroom, etc.

This Innovative Learning Environment case study has been prepared specifically for the OECD/ILE project. Research has been undertaken by Natalia Bernabeu Moron, Ana Turrado López and Jorge A. Fernández de los Ríos (intern) under the supervision of Alejandro García Cuadra from the Ministry of Education/Institute for Teacher Professional Development, Educational Research and Innovation, following the research guidelines of the ILE project.

© OECD/ Ministry of Education, 2012.

TABLE OF CONTENTS

1. Introduction.....	3
2. The <i>Jacint Verdaguer</i> school: history of transformation into an ILE and main objectives.....	5
3. Organisation and characteristics of the learning environment.....	7
New role of teachers	
New organisation of the curriculum in accordance with the methodological foundations	
New approach to the use of space and the organisation of the timetable	
New learning instruments for the new types of learning	
The challenge of evaluation	
4. Nature and quality of learning	26
5. Impact and effectiveness	27
6. Conclusions	31
Bibliography and Internet Documents	33

1. INTRODUCTION

This report forms part of Spain's contribution to the international study on Innovative Learning Environments (ILE), carried out by the Centre for Educational Research and Innovation (CERI) of the Organization for Economic Cooperation and Development (OECD). The Institute for Teacher Training and Educational Research and Innovation of the Ministry of Education coordinates Spanish participation in this project.

The following sections present the transformation of the *Instituto Escuela Jacint Verdaguer* (pre-primary/primary and secondary school) into an innovative learning environment and the key factors that have contributed to turn this educational institution located in a small town called Sant Saturní D'Anoia into a school of the 21st century.

First of all, in order to help contextualise the school, the following paragraphs provide a brief description of the Spanish education system.

The Spanish Constitution of 1978 stipulates that Spain is a state under social and democratic rule of law. It also establishes the 'State of Autonomies', which acknowledges and guarantees the right to self-government of the different regions making up the country and solidarity among them. Thus, there has been a gradual transformation of the State organisation through the establishment of 17 Autonomous Communities and two Autonomous Cities, with the resulting redistribution of political and administrative power between central and regional authorities.

This decentralisation also affects the Education Administration and the corresponding transfer of certain powers and functions of the State General Administration, through the Ministry of Education, to the Autonomous Communities, which have their own Departments for Education. This implies that the 'uniformity' of the education system is broken (but not the unity, which is maintained).

Another important aspect established by the Constitution is the teaching of (and in) the languages of the Autonomous Communities with another language apart from Spanish.

The *Jacint Verdaguer* school is located in the Autonomous Community of Catalonia. Like all other regions, Catalonia has developed state regulations on education and regulated non-central aspects of the education system.

Catalonia is one of the Autonomous Communities with its own language, Catalan, which is the language of instruction in the school. In addition, all students are taught both Spanish and English.

Regarding the organisation of mainstream education, at national level, the structure is the following:

- **Pre-primary education.** Divided into two cycles: the first one, 0-3 years old; the second, 3-6 years old. This stage is non-compulsory.
- **Primary education.** Organised into three cycles: the first one, 6-8 years old; the second, 8-10 years old; and the third, 10-12 years old. It is the first compulsory stage.
- **Compulsory secondary education.** Comprising four years, between the ages of 12 and 16.
- **Vocational training.** It offers a range of training provision that furnishes students with the necessary skills to undertake any one of the various trades, have access to the labour market and actively participate in the social, cultural and economic life. Students must have completed compulsory secondary

education or be over 17 and having passed an entrance examination. There are intermediate and advanced vocational training cycles.

- **General upper secondary education.** Divided into two years, between the ages of 16 and 18. It is a post-secondary and non-compulsory stage.
- **University.** Organised into three cycles (Bachelor's, Master's and Doctorate), with a variable duration and a minimum number of ECTS credits.

The *Jacint Verdaguer* school offers education from the second stage of pre-primary education to compulsory secondary education.

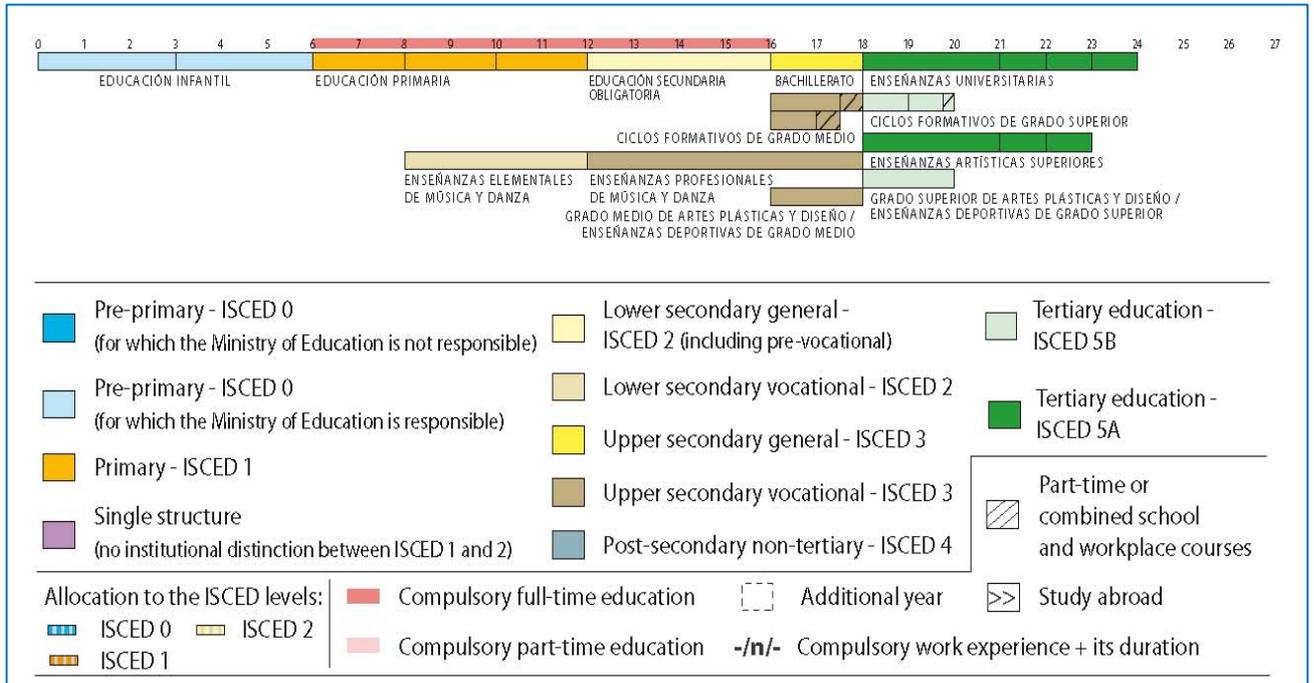


Figure 1. Current structure of the Spanish education system. Education Act (May 2006). Source: EURYDICE, CEDEFOP and ETF.

2. THE JACINT VERDAGUER INTEGRATED SCHOOL: HISTORY OF TRANSFORMATION INTO AN ILE AND MAIN OBJECTIVES

The *Jacint Verdaguer* is a pioneering school regarding the integration of information and communication technologies (ICT) into the teaching-learning process in Spain. The school has made the most of its possibilities in order to make a profound change in the way of teaching, committing to innovative methodologies and a new role of teachers, students and families.

All current members of the teaching team bear in mind that the reality students and schools face nowadays differs enormously from the reality schools lived some years ago, which was a response to the needs of a post-industrial society. As the introduction to the school's educational project mentions:

'the school the students of today, children and young people of the 21st century, deserve is not the school where most of us studied. The school of the 21st century must provide a response to today's and tomorrow's reality, complex and changeable. A reality and a world which require a certain mastery of ICT, knowledge of languages and, what is more important, the ability to adapt to changes and to understand and be understood by others.'

The school has an innovative tradition which goes back to the beginning of the nineties. At that time, it was not an integrated pre-primary, primary and secondary school, but only offered primary education ('basic general education' then) for children between 6 and 14, and, after the change in the Spanish education system at the end of the nineties, for children between the ages of 6 and 12. The school did not have a good social image in those days: it was the last option for families as compared to the three private schools of the town.

The first key moment took place in 1992, when a new management team started leading the school and considered the objective of having the whole school organised in accordance with an innovative methodology which, at the time, promoted an education based on autonomous 'learning corners', project work or flexible grouping. As they remark: *'it was not easy at all. There were serious discussions at that moment, but, in the end and little by little, good sense prevailed. Some did not want to continue in this project and left. Those of us who stayed worked very hard, day after day, also with parents, explaining them that a better education was possible.'*

These first changes were a success and served as a motivation and boost for the school to continue innovating with the arrival of the first computers and Internet. The foundations of what today is a school of the new century were being laid. This first triumph is acknowledged with the 'School of the Month' award by the European Schoolnet (EUN) network and the Department for Education of the Government of Catalonia. During this same period, the school also received the first awards for its work on the website.

The poor social image of this innovative school was already history; time had confirmed they were right: students were learning and attended school happily, teachers were working hard, motivated and enthusiastic, and becoming immersed in a continuing training process, families were getting involved...

All this led to the second key moment in the history of this innovative learning environment: in 2005, the Teachers' Assembly of the pre-primary and primary school decided by majority, and with the support of the Parents' Association, to give continuity to the school's educational project by becoming an integrated school for children between the ages of 3 and 16; that is, all the years of compulsory schooling in Spain and the second cycle of pre-primary education (non-compulsory). They therefore

become one of the few public integrated schools of the country: the *Instituto Escuela Jacint Verdaguer* had been born.

In most Spanish public schools, primary and secondary education are provided in two different schools. Although they are normally located in the same geographical area, they tend to be independent both physically and methodologically. Children who complete primary education —aged 12— start the following cycle in the new school, whose organisation, teaching methodology, etc. they do not know. This 'gap' requires a period of adaptation and some students end up losing their motivation towards learning and the new environment where it is developed. This does not occur in the *Jacint Verdaguer* school: having become an integrated school, the same teaching approach and methodology are shared, teachers of both stages talk to each other, the two headteachers work jointly, etc., apart from the physical connection between the two buildings. This coherence in the learning environment results in students who begin a new stage knowing what to expect, they way work is carried out, what is expected from them, etc.

In addition, a second event which was necessary for the transformation of the school took place that same year: the school autonomy project. Participation in this project, organised by the Department for Education of Catalonia, was a boost for the school regarding two main aspects. On one hand, the financial assistance to draw up and develop the project; on the other, the period of reflection and organisation of the work carried out in the school to systematise it as a unitary project, monitor it, prepare reports, etc.

Thanks to these two decisions —becoming an integrated school and conceiving a school autonomy project — and to the extraordinary work, involvement and enthusiasm of all the educational community, the school was able to start working in order to achieve its main aim: to become a learning environment training people and preparing students not only for today's society but, above all, for tomorrow's.

This ultimate aim can be translated into a series of general objectives which guide the organisation of learning that it will be seen later on. The objectives are the following:

1. Develop students' autonomy and responsibility in their learning process.
2. Have participative, collaborative and cooperative students throughout their social and learning process.
3. Develop the qualities of empathy, personal self-control and positive critical sense.
4. Prepare children and young people to live and live with others in the present world as well as to find solutions to new problems.
5. Prepare students to 'learn to learn' throughout their lives.
6. Develop reflection, scientific thinking and the challenge to generate new knowledge.

3. ORGANISATION AND CHARACTERISTICS OF THE LEARNING ENVIRONMENT

If the school is seen as a learning environment which prepares for life, it is evident that this objective is not going to be achieved with a school based on content learning and devoted almost exclusively to the transmission of information. Nowadays, as the educational team mentions in the school's project, *'the Internet network or the search engine Google do that better'*.

The *Jacint Verdaguer* school knew that a reform in education was absolutely necessary: *'the school cannot stand apart from each moment's reality and, curiously enough, it is schools that have not changed much since the 19th century'* (headteacher of the primary school). In a society like today's, a society with challenges that had never existed before, in an environment which offers a massive quantity of information, where technologies are a natural part of everyday's life and changes take place in such a rapid way that it is not possible to predict the way tomorrow's society will be, there is no place for a traditional type of education. A school that has their students passively sat at their tables, so that they listen to their teachers, hour after hour, looking for the only possible solution to problems which have been systematically presented after the introduction of each new concept, would be unable to motivate and prepare today's students—learners of the 21st century, citizens of the unpredictable knowledge society—for life.

The teaching team that leaded the transformation process, and that is still being trained and learning with the same initial enthusiasm, always knew that the school they wanted was *'a privileged place for learning and personal growth'* and that, in order to have that, *'it is essential that students get involved in their learning process. We will only have them motivated, feeling like studying and making an effort to learn new things if the school lets them play an active role and develop their creativity at the same time that their interests are met'*.

Talking about a new school implies talking about **the new role of students**: an active role which turns them into 'learners' who play a leading role regarding their own learning process, who are autonomous and motivated to work individually and in group, who are creative and innovative and who can find solutions but also look for questions, who can learn concepts but also put them into practice in real life.

These objectives, already seen in more detail in the previous section, involve a new way of organising learning. The teaching team has based change on five basic areas which are interrelated with each other:

1. The role of teachers.
2. The structuring of the curriculum.
3. The use of space and time.
4. Learning instruments.
5. Evaluation.

New role of teachers

'Today it is possible to generate knowledge without the teacher being the only source of information and (s)he can devote part of the time (s)he was using to explain in order to guide students in the learning process (...) by creating the necessary learning environments, which go beyond the conventional classroom and beyond traditional resources. The teacher, rather than providing answers, raises questions' (2011 School's educational project).

If students become learners who play a leading role, the traditional figure of the teacher cannot be maintained: a professional who is a specialist in a subject and who transmits information, amassed during his/her university education, through an oral speech supported by a textbook, either sat at his/her table or standing in front of a blackboard.

Teachers have a global vision of the school and not limited to the classroom. They understand the school as a learning community and not as a physical space. In the educational environment created, they do not exclusively limit themselves to the transmission of information, but they become educators; they are facilitators of learning in the pursuit of unfolding each's person talent to the full.

In this school, textbooks are not used (except for the instrumental areas, where learning is rather linear). It is the facilitators of learning who design and prepare any materials used, activities, etc., mainly by means of the school's Moodle platform. It is also teachers who look for the best available resources which are meaningful for learning: software, web pages, educational games, videos, simulations... It is noteworthy that they do not only draw up materials for children but also for their families, this way, they promote and facilitate their participation and the learning environment reaches students' homes.

A key element in this environment is "sharing"; teachers are familiar with cooperative work too: the individual work (working plans) assigned to each learner is different for everyone, it is drawn-up for every teacher who works with him or her as a team, in order to offer each learner the most fulfilling activities; there is also a learning/teaching network where Jacint Verdaguer's teachers can share information, resources, experiences... in order not only to facilitate their everyday tasks but also to enrich their work and themselves. Besides, "sharing" is one of the tools they have developed to face the instability of teachers, as it will be explained later.

Educators have a strong grasp of information and communication technologies (ICT) and their didactic application. They try to be up to date regarding new computer applications, instruments, etc. and they are trained when necessary; although catching up with technologies is a hard work it pays back: this "high technology environment" brings them closer to the 21st century and *digital natives*.

This way of working has inspired the teaching team the metaphor of the teacher as a cook: teachers are cooks who, using the kitchen utensils (space, ADSL broadband, computers...) and the necessary ingredients (materials and resources, digital and non-digital), provide a daily meal (the same for everybody) and a menu (search for excellence and attention to diversity).

This change in the role of teachers would not be possible if there were not people with a genuine passion for education behind; facilitators of learning with a real interest in their students, in knowing them, in giving them confidence to get the best out of them; with empathy, self-control and the ability to adapt to changes; who like and who can work in team; participative, collaborative and always wanting to learn more and to improve.

These two dimensions, the professional and the human, are reflected in the 'Letter of commitment of the educator's role', which is always present in any of the directions of the teaching team.

One of the big challenges the school is facing has to do with the teacher recruitment process of the Spanish education system and the way teachers are seen in the school: learning guides and creators of resources, opportunities and questions.

In Spain, the different Autonomous Communities announce public positions for teachers and professionals from the whole country are eligible. Those passing the qualifying examinations, either because they obtain a position or because they are temporarily employed during the year, can be sent to any public school in the Autonomous Community where they took the examination:

'...teachers who come to the school do not know where they are going or how to work in our school. The first thing that surprises them is that there are not textbooks but plenty of technological resources they have never used before or do not know how to use them for didactic purposes, which we have to face' (Josep Maria and Robert, headteachers).

The way they deal with the instability of teachers involves the implementation of, mainly, three measures:

- Internal training. During the first term, school teachers provide specific training to the new teachers who have joined the school.
- Tutoring. New teachers get into pairs with more experienced teachers, who supervise and guide them.
- 'Pedagogical meetings'. Discussion on the school methodology is promoted with the aim of improving and understanding each other.

These measures represent an additional effort for the school teachers, who carry out this leadership work. In the last years, this situation has become worse since the change of teachers has been a constant in the school. However, they are still enthusiastic about the project and hope that *'a new act favours the stability of teachers and a recruitment process which suits the needs of each specific school'* (Josep Maria and Robert, headteachers).



Figure 2. This small ‘living room’ is the staff room. Sofas, a fridge, a microwave... They spend many extra hours at school and have created a nice and comfortable place to talk in a relaxed way and enjoy their free time.



Figure 3. In the same room, this is the space used for joint work, debates, organisation, training, etc.

New organisation of the curriculum in accordance with the methodological foundations

In the search for the new school of the 21st century, the team who led, and leads, the transformation of the *Jacint Verdaguer* school —based on authors such as Piaget, Decroly and Montessori, Dewey and Kilpatrick, Bruner and Vigostky, Feldman—, established a pedagogical basis built upon four pillars:

- Students’ autonomy: individual constructivism.
- Cooperation among the group: social constructivism.
- The use of intellectual work resources in order to develop knowledge: the use of information and communication technologies.
- A methodology based on cooperation and discovering rather than on the accumulation of contents.

The referent which shaped the structure those pillars would support is the 1996 report by Jacques Delors, where the author mentions the four big challenges of education for the 21st century: learning to know, learning to do, learning to live together and learning to be.

Finally, the roof of this new construction and organisation of the curriculum is the following ‘learning pyramid’, which represents different student retention rates according to the methodology used and whose source is the survey conducted by the National Training Laboratories Institute (Bethel, Maine, USA).

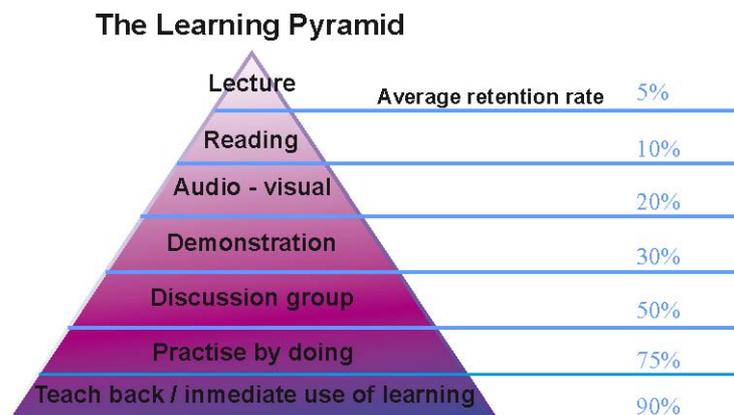
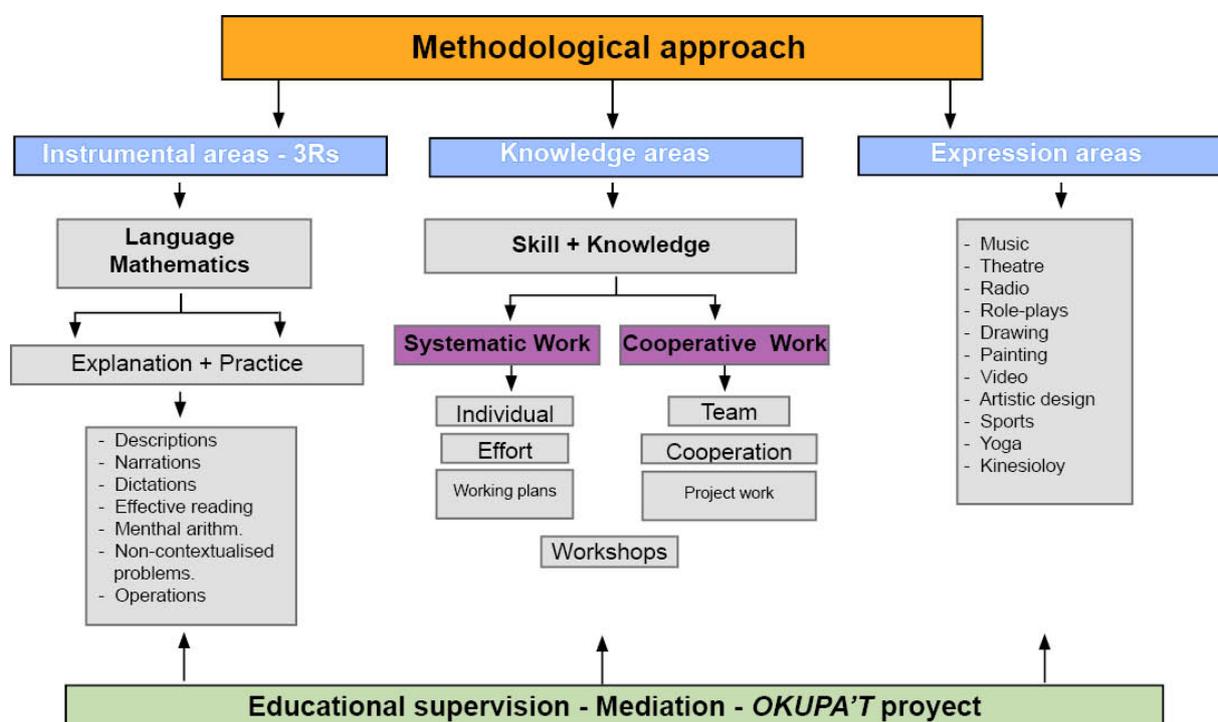


Figure 4. Source: National Training Laboratories Institute (Bethel, Maine, USA).

This pedagogical reflection led the team to see the curriculum as something open and organised around three areas: instrumental areas, knowledge areas and expression areas (inner knowledge). A fourth area would be educational supervision and the social skill.



1. Instrumental areas: the '3Rs' (Reading, wRiting and aRithmetic)

Definition: What students would not be able to discover by themselves or in a short space of time.

The two main areas are Language and Mathematics. They include:

- 1) Language: reading, the taste for reading and writing, oral and written expression, literary creations, spelling. The three languages which are studied in the school are Catalan, Spanish and English. A second foreign language is optional.
- 2) Mathematics: numbering, arithmetic and operations, the recognition of space, problem solving.

Regarding these three instrumental areas (reading, writing and arithmetic), teachers are the best source of information for learners; it is one of the few moments where they still perform that knowledge transmission to learners in order to introduce those concepts students would not be able to discover by themselves or in a short period of time. Only new contents which have not been acquired or introduced before are seen; their presentation has to be coherent with the timing of work in each area and they must be acquired before they are put into practice in a real context.

The school offers different ways of assimilating these basic contents:

- visual explanations with resources such as the digital blackboard, computers, games, etc.;
- interaction with learners;
- simulation of real situations to reinforce the content;
- techniques such as effective reading, dictations, literary creation, silent reading, mental arithmetic or help from classmates.

These strategies can be implemented thanks to resources which are mostly designed and created by teachers themselves to meet the specific needs of their students.

Concerning work with the '3Rs', it is not only contents that are taken into account, but also values such as effort, attention and cooperation.

2. Knowledge areas: the acquisition of knowledge based on the 'Problem-Based Learning' (PBL) methodology

Definition: Work that is carried out in an interdisciplinary way and that always looks for the practical sense of contents; these are implicit in a specific context aimed at motivating learners. All the work is planned as a team and based on the PBL methodology, understanding problems as activities that have to be completed by finding the best strategy to do so. Activities are carried out individually or cooperatively.

The curricular areas are Natural Sciences, Social Sciences and Technology. It is students themselves who build their own learning, either individually or in group; teachers no longer transmit information (no instrumental content of the '3Rs' which has not been previously consolidated is seen) but become guides who give clues, make questions, etc.

Work is based on the PBL methodology and activities developing skills: it consists of 'doing' and 'solving' by giving learning some meaning. From the 5th year of primary education, questions are raised in a Moodle platform (designed by teachers), where learners also have access to essential sources of information to consult, proposals of activities to choose and self-evaluation activities.

The organisation of spaces, the timetable, activities, trips, workshops, etc. are based on this methodology.

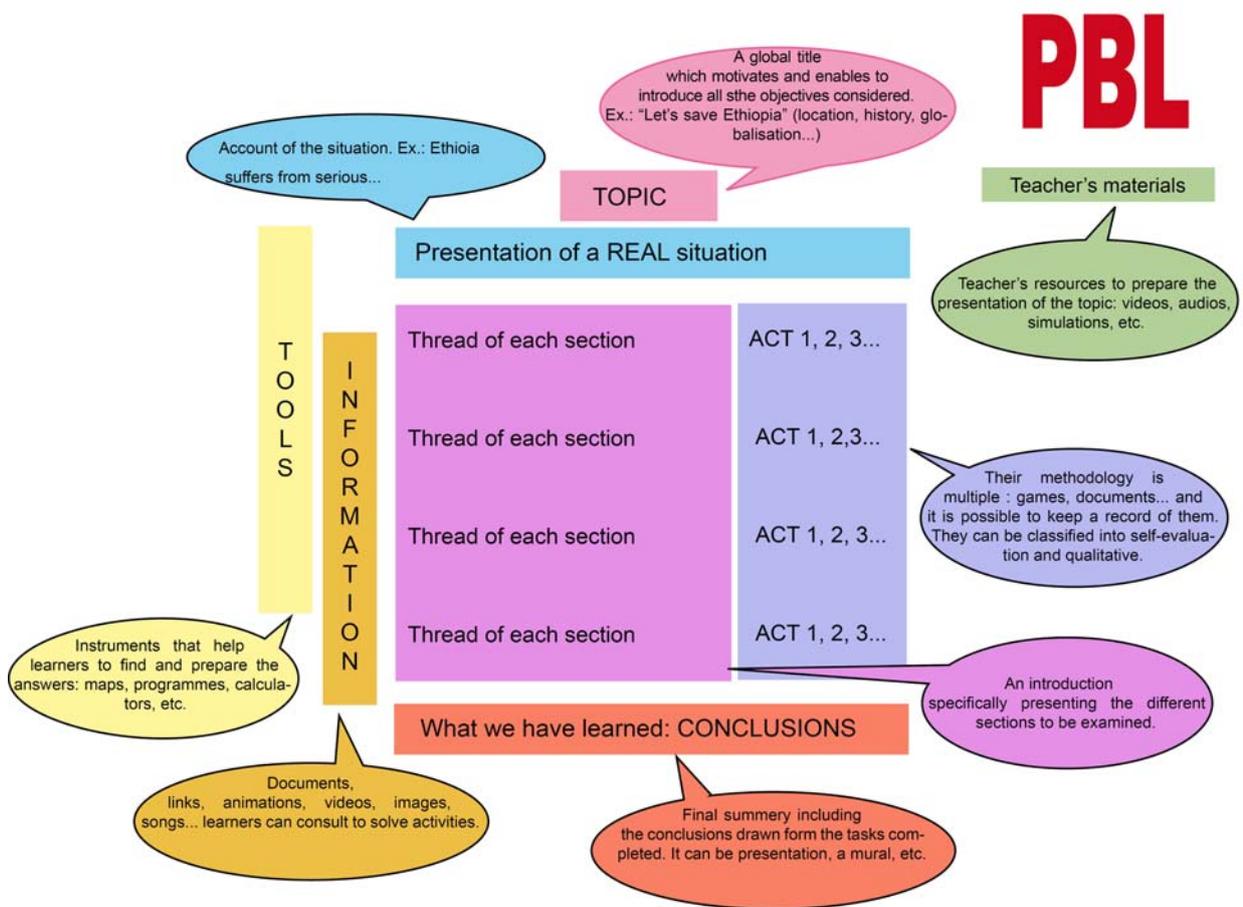
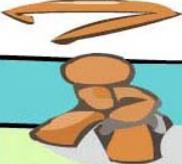


Figure 5. Outline of the organisation of the PBL method.

You must read each chapter and overcome a series of activities of basic skills in all areas. Some activities have one thing: you do 20 activities well done so that you leave a key (password) that you submit to your teacher. But be careful if you do more than 3 wrong counter to zero and will have to start again. In other activities have to find the latest information and you should make browser.



La gran pregunta x 3

En acabar hauràs de contestar:

1. Quines semblances i diferències hi ha entre la nostra societat i la de l'antic Egipte?.
2. Com es tractava la mort en l'antic Egipte faraònic?
3. Quins elements de l'art Egipci són presents en la nostra societat?

2



1a. etapa

Els antics egípcis momificaven algun dels seus morts esperant que tinguessin una bona vida en el més-enllà. Milers d'anys després, s'han trobat algunes d'aquelles mòmies. Seria interessant conversar amb alguna d'aquelles mòmies oi? Edgar Allan Poe ho va fer amb el conte que llegiràs.

Read the first chapter in the story "conversation with a Mummy" and do the activities you propose the director of the museum ..

La momificació a l'antic Egipte



Clica per saber-ne més

[El dia anterior](#)

Figure 6. These two images are part of one of the Moodle activities created by teachers. This activity is called "Conversations with a mummy". It consists in ten stages; throughout them students learn about Egypt. Each of these slides leads to different links where students find information and/or tools to answer some questions, read hieroglyphic writing, use algorithms, interview a mummy, write a letter to a museum director about the discovery, organize an exhibition on Egypt...

Although most of the Moodle activities are restricted to the Jacint Verdaguer's school community, some of them are public. The activity "Conversations with a mummy" can be consulted by clicking on <http://www.jverdaguer.org/aula/course/view.php?id=24>

In this knowledge acquisition area, and based on the PBL method, there are two main ways of working: working plans (systematic-individual) and project work (cooperative).

- **Working plans.** They are an interdisciplinary proposal which focuses on skills rather than on contents. Learners are asked a series of questions they have to solve in order to answer the main question raised. They are included in a dossier that has to be completed every two weeks.

This systematic and individual work —learning is systematised but not contents— promotes two important habits: the study habit and the reinforcement of already acquired contents. They include problem and mystery solving, silent reading, digital working plans, study and memorisation or literary creation.

Since it is a systematic way of working, sometimes two different groups are joined so that they work together.

Teachers monitor the different tasks completed by learners, even through e-mail when necessary.

Up to the 2nd year of primary education, the '**learning corners**' methodology is used with children. Each student has a series of weekly tasks to be completed in different spaces of the classroom. This allows them to develop strategies for the organisation of time and space, as they need to efficiently manage both of them in order to have all tasks finished by Friday. The different tasks are presented so that children have enough time to complete them and there is still some time for them to carry out their favourite activities.



Figure 7. Two different 'corners' in a primary education classroom.

- **Project work.** *'It is the emblem of the school. Where students create their knowledge'* (Josep María, headteacher of the pre-primary/primary school)

The project begins with the choice of the topic, which, in most of the cases, is chosen by students themselves. The following step is the sharing of all their ideas on what they already know and would like to know about the topic, the formulation of the hypotheses to be verified, etc. Working groups are then organised in a cooperative way. In these groups, the team distributes responsibilities to get the project done and a system of peer tutors is established for certain tasks so that each member can do his/her best. Once the project has been completed, the group can prepare a digital presentation

to show their classmates what they have learned, create a mural summarising the project or a dossier so that families can see it and add their comments.

From the 5th year of primary education, students have a Moodle environment for the organisation and distribution of tasks.

The way groups are formed is such a determining factor for students' learning and personal development that the school embarked on a project with the University of Barcelona to produce sociograms. Once data have been analysed, university experts suggest ways of organising the groups so that results are optimised and students can develop all their abilities.

But grouping is not always based on these analyses; methods normally vary with each activity. Sometimes it is learners themselves who choose the group, some other times it depends on teachers, on other occasions the 'jigsaw technique' is used, etc.

Based on the PBL method, there is another activity: **workshops**. They are organised for both working plans (individual-systematic) and project work (collective) from the 4th year of primary education and take place five times per week. Each level is divided into five small groups —twelve students maximum— and activities that could not be carried out with a bigger group (the average number of students per class is 20-25) are performed: television, radio, robotics, theatre, photography, animation, etc. Each term students rotate in order to participate in the different workshops planned for the year.

In the upper years, research workshops are also organised, where laboratories and 'assembly classrooms' are used to experiment, deduce, create or build.



Figure 8. Students do not participate in the same workshops at the same time, but a programme establishes which ones are organised each year so that there is some progress in students' abilities. The robotics workshop we see in the picture gets more complex every year: students first need to know how technology works in order to design and create their own projects later on.

3. Expression areas: inner knowledge

Definition: It is the knowledge that makes feel, express feelings, fully develop as an individual, learn about the body and its possibilities, concentrate. It consists of promoting the different arts and developing sensitivity towards them, as well as self-control and self-expression through movement.

The curricular areas are Music, Physical Education and Visual and Plastic Education and the values developed are self-control, respect, conflict resolution, empathy, artistic expression, play.

Once again, the teacher becomes a guide who gives clues, makes questions, etc.

The activities carried out aim at situating learners in a context where they can express themselves —or overcome the shame they feel— by either acting, playing, doing exercise, listening to music, expressing themselves in a plastic way or creating. Situations to develop self-confidence and self-esteem are also created.

This search of contexts to develop self-knowledge is achieved with the following organisation of activities:

— Audiovisual work:

The aim is that students understand what happens behind television cameras or a film and that they learn to differentiate reality from fiction.

In the upper cycle of primary education and in compulsory secondary education, between the ages of 10 and 16, they do some audiovisual editing in different formats: video, animation (frame by frame) or design (drawing each frame).



Figure 9. Digital blackboards are used as a resource for students to do the storyboard of their films in digital format. Once all the scenes are thought out and designed, they start recording.

— Artistic education:

The school has a music classroom where students can find all kind of instruments, a computer and a MIDI keyboard for every two students. 26 of the students are members of the school orchestra.

The theatre workshop lasts for seven weeks. During this time, students learn their part, rehearse, create the sets, decide upon costumes and

characterisation, etc. The last day of the workshop is the premiere of the play, which is performed for the whole school.

Students' artistic pieces of work bring colour to the school: classrooms, corridors, walls, etc. are covered with their creations.

Thanks to the cultural offer of Sant Sadurní D'Anoia and other nearby towns, all students annually attend a performance of each artistic discipline —music, dance and theatre—, visit exhibitions, etc.

— The 'book of life':

In primary education, students have a notebook that is their 'book of life'. Year after year, they fill it up with notes, drawings, pictures, etc. of their most important experiences during their passage through the school.

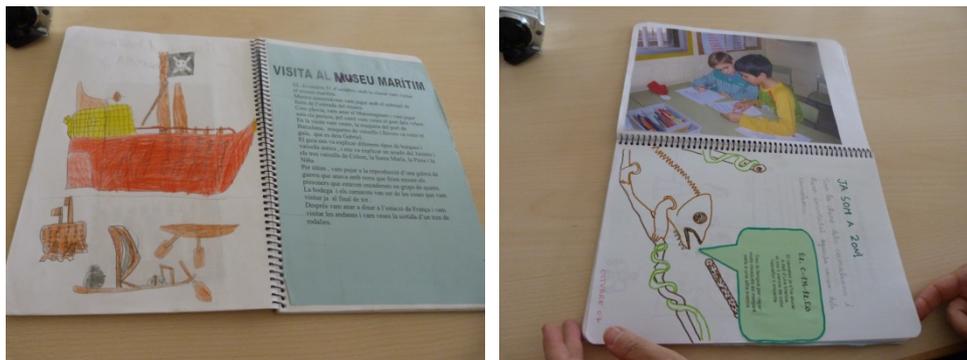


Figure 10. Thanks to the cultural offer of Sant Sadurní D'Anoia and other nearby towns, all students annually attend a performance of each artistic discipline —music, dance and theatre—, visit exhibitions, etc. It is so meaningful an event for some of them that they even keep a record in their "book of life".

— Virtual environment to express their opinion:

All students have a personal blog to experiment, propose activities, upload news, express their opinion... The idea is to motivate them to transmit their ideas.

In the school, they believe that, for students to be motivated to read or write, they actually have to do it and, for them to play a leading role regarding their own learning, they need to get their own voice heard. Blogs are public to be read and commented by their peers, teachers and families and at the request of authors themselves, a blog entry can become part of the school magazine *Ets i Tuts*.



— Decoration of the school:

The school is decorated with all type of **Figure 11.** Decoration of a classroom entrance. materials produced by students: pictures, paintings, sculptures, puppets, drawings, papier-mâché...

All the walls, doors, etc. are painted in colours, something that is not very common in Spanish schools.

— Kinesiology and emotional education:

One term per year, students do kinesiology activities an hour and a half per week. The aim is to help students concentrate, relax and gain more self-control. Yoga activities are also organised with the same purpose.

From the age of 12, students learn to recognise their emotions through games: the way they feel before the game, completion of a questionnaire on emotions, what kind of emotions each game elicits, etc.

4. Educational supervision plan and the social skill

Through this plan, aspects such as self-esteem, conflict resolution, empathy, multiple intelligences, etc. are developed, although they are also cross-curricularly covered in the three previous areas, especially in the expression area —kinesiology, art as a way of expressing emotions, etc.

Within the plan, the school has drawn up the *OKUPA'T* programme, through an agreement with companies of the town and other public secondary schools, for students of the 3rd and 4th years of secondary education —aged 14 and 16. Thanks to the programme, students with learning difficulties do placements with small companies (hairdressing, mechanics, gardening, etc.) —although it would be interesting to extend this programme to every student interested in taking part, it would mean a complete reorganization of the current education system. There is a contract between companies and students and families also have a commitment. At the end of the year, the Town Hall publicly acknowledges the companies that have participated and students are awarded a diploma. In the last four years, the number of companies has increased from 5 to 30. Students also attend lessons, with the relevant curricular adaptations, and their teachers monitor their practice.

The students, families, teachers and companies that take part in *OKUPA'T* are very pleased with the programme, especially students, who, thanks to it, feel they have a place where they are important. Their self-esteem, motivation, etc. increases as they discover they can also learn beyond the classroom.



Figure 12. Students put some of the things they learn through the *OKUPA'T* programme into practice in the school. In the picture, flowers and part of the garden in the secondary schoolyard, which is looked after for some of the students who do gardening.

There is also a mentoring system among students. At the beginning of every school year, the pedagogic team sets the mentoring partners which change every year. It is a way of bringing together groups and students who, otherwise, would not have contact with others. Mentoring contributes to enhance coexistence in the school; as each student is the mentor of another, it is possible to carry out activities that create a favourable climate in the school: they help each other (for example, older students read stories to the youngest), share their artistic creations, send Christmas cards, visit each other, etc. A very special bond grows between mentor and mentee throughout the year, inside and outside the school, and the ties continue even after the partnership is *officially over*: during the activities that the two schools organise in common, former mentors still visit their former mentees to see how they do.

In addition to this mentoring system among students from different groups and grades, there is a similar way of pairing learners inside each class when the activity that is being carried out allows teachers do to so, for instance paired reading, problem resolution or cooperative work: a more skilled learner becomes mentor of a learner who has more difficulties in an specific area; this partnership depends on their skills and sometimes someone is a mentor in one area or task and a mentee in a different area or task.

As it was mention ealier (see “new role of teachers”) a third mentoring system takes place among teachers themselves: a more experienced teacher, who has been in the school for years, tutors a teacher who is new in this school, to help him or her to get the grasp of the school project, to answer their questions...

To finish this section, and with the aim of giving an overview of the organisation of the curriculum and the methodologies used, a table-summary is provided:

	Instrumental areas	Knowledge areas		Expression areas
		Individual	Group	
Areas	Mathematics, Languages (Catalan, Spanish, English), second foreign language	Social Sciences, Natural Sciences (Physics, Biology and Chemistry) and Technology	Social Sciences, Natural Sciences (Physics, Biology and Chemistry) and Technology	Music and Visual and Plastic Education. Educational supervision, kinesiology, yoga
Values	Attention	Effort	Collaboration	Sensitivity
Role of the teacher	Instructs and motivates. Interacts	Motivates, guides, advises and gives clues (never answers), source of information		Motivates and encourages, is sensitive and expert
Management of groups	Big groups, individual, help in couples, flexible grouping	Individual work (they can help each other without giving each other the solution to the problem)	Work in teams	Mostly individual work but also in teams
Types of activities	Practice: Mental arithmetic Effective reading Reading in couples Summaries Outlines Conceptual maps Explanation and participation	Working plan	Project work	Very varied: Listening, practice, cooperative games, plastic creation, audiovisual creation, exhibitions
Methodology	Expositive, systematisation of content, participative in big groups	'Problem-Based Learning' (PBL)		Create, listen and practice
		Individual work, self-evaluation, decision-making and multiple ways of solving	Cooperative and collaborative. 'Jigsaw' or what we know, want to know...	

Figure 13. Outline of the organisation of the curriculum.

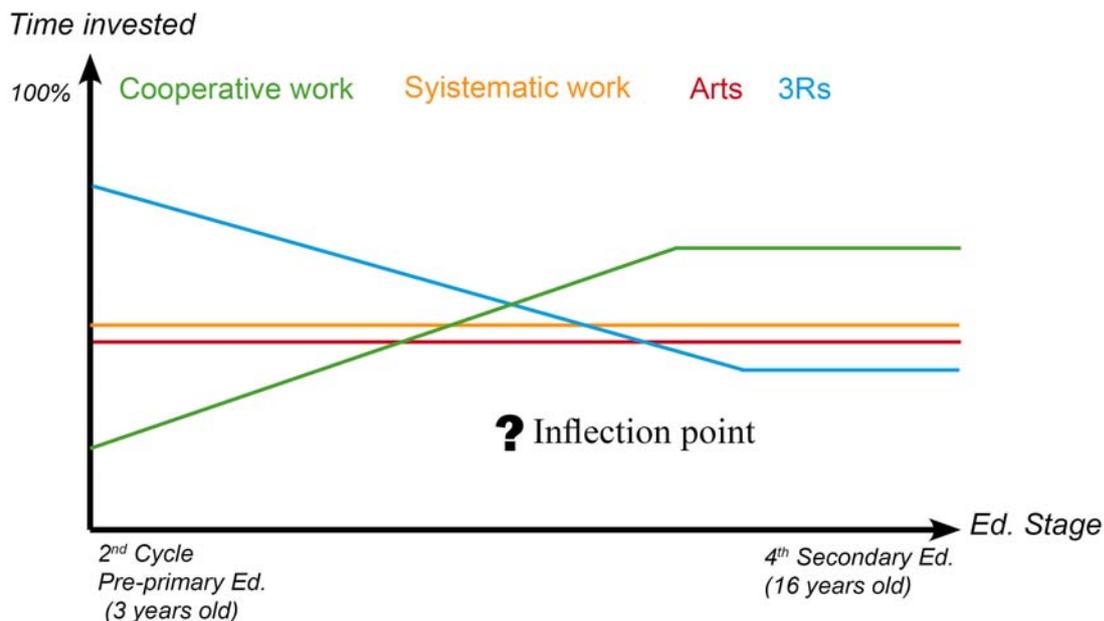


Figure 14. Timing of the methodological approaches developed during the educational stages provided by the *Jacint Verdaguer* school (2nd cycle of pre-primary education – compulsory secondary education).

New approach to the use of space and the organisation of the timetable

The way the school organises learning and implements teaching methodologies also implies a change in the traditional organisation of space and time in Spanish classrooms: individual or pairs of tables in rows looking towards the teacher.

On one hand, so that students can contribute to their own learning process and work both cooperatively and individually; and, on the other, to overcome the idea of the teacher explaining contents from his/her table. The **space** has to facilitate mobility and cooperation, so that teachers can approach students and guide their work:

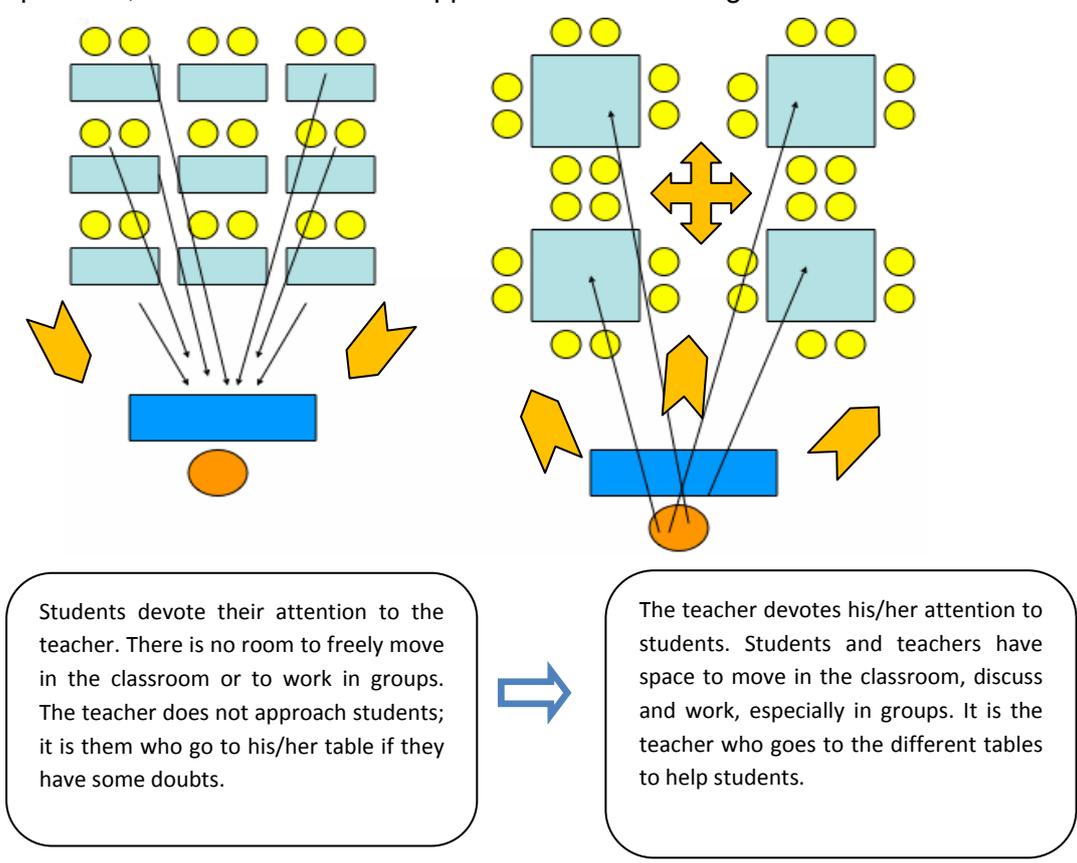




Figure15. Both in pre-primary/primary and secondary education classrooms, the distribution of tables promotes group work. The picture in the right (secondary education) shows the electrical system built over the tables so that all students can plug in their laptops at the same time during lessons. The problem of having to buy the very expensive computer batteries every two years was thus solved.

The change in the distribution of tables and chairs in the classroom is only one of the first changes introduced in the physical environment. Little by little, the teaching team has reformulated the spaces of the pre-primary/primary school building: walls have been removed to create more common and open spaces and others have been constructed to make wide corridors look smaller and create more educational spaces.



Figure16. This space, created as a working area and shared between two classes, was an empty and neutral space before.



Figure 17. A wall was erected in this wide corridor in order to create a new space.

Regarding the secondary school building, since it has been recently built, the teaching team asked the designers to create wide, open and flexible spaces, more windows and windowpanes for the light to come through, etc. However, despite the directions, once built, the school was not as satisfactory as they expected, so, as it is also the case with the pre-primary/primary school, they continue doing their best so that it suits their needs.

The way **time** is organised in Spanish schools is based on subjects. Thus, normally, there is an hour for Mathematics, another for Language, another for History, etc.

In this school, the timetable is not based on contents/subjects, but on methodology. The three areas into which the curriculum is organised are reflected in students' timetables and the 'learning pyramid' previously seen is also taken into account. In accordance with this approach, approximately, a 25% of the time is devoted to instrumental areas, a 25% to personal work and autonomy, a 40% to cooperative work and the remaining 10% to intrapersonal work.

In order to make the most of heterogeneity and the exchange of ideas during time devoted to cooperative work, there are two teachers in the classroom who help, guide and supervise the different groups.

New learning instruments for the new types of learning

The school has made two important bets: the elimination of textbooks and the introduction of information and communication technologies (ICT).

As the school has reorganised the curriculum so that it adapts to the methodology of the learning environment, most 'standard' textbooks —used for the '3Rs', where learning is rather linear— have been replaced by **materials created by teachers themselves**, which are adapted to the new organisation of learning and to students' preferences: *'this is an exhausting part, since all materials have to be produced by our team. In this sense, it is a bet for the future and most materials are prepared in digital format'* (Josep María, headteacher of the pre-primary/primary school).

The individual work for each student is also jointly decided, designed and created by teachers.

With teachers creating their own materials and learners playing a leading role regarding their own learning, **ICT** take a key role in this learning environment:

'the school cannot be unaware of the development of society. It has to be able to take the positive aspects of society and make the most of them in order to provide a good intellectual and human education' (...)
'It is not necessary to say that, if we want to prepare them to live in their society, we have to train them with their tools, the most modern, the ones they will have to use, so we make all the necessary resources available inside the classroom, which are also instruments for intellectual work' (Josep María, headteacher of the pre-primary/primary school).

ICT have always been one of the biggest bets made by the school, even before practice and training had shown all their possibilities in education. The school has recently developed a whole system based on the new technologies of education. This does not mean that they have left ink and paper aside; they continue being the first option when a virtual environment does not make a significant change to learning.

The main instrument designed by teachers for the preparation of teaching units and materials as well as for communication and student monitoring is *AULA*: a virtual space in a Moodle environment which is modified and increased so that teaching units and activities can be improved thanks to good practices.

Its structure is based on the organisation of learning of the school, so *AULA* contents are classified, according to their typology, into the '3Rs', systematic work or cooperative work. Activities include project work, working plans, webquests, treasure hunts, lessons, readings, systematic homework, evaluations, etc.

Apart from the versatility of the activities and the possibility of adapting them to each student and the organisation of the school, other advantages are: large data storage capacity; teachers learn from each other since activities are shared; new teachers can easily consult, change and carry out the activities; students' work is registered, which facilitates its monitoring and evaluation; finally, it is a common way of working throughout compulsory education —*AULA* is introduced in the 2nd cycle of primary education, at the age of 8— that gives coherence to both the learning process and the pedagogical approach of the school, as all facilitators of learning follow the same pattern and there are not methodological changes from one teacher or cycle to another.

But it is not only teachers who produce materials in the school: students have their own spaces (Wikipedia and blogs) to prepare materials and consult what other classmates have done. They include the following materials: stories and poems, sayings and proverbs, historical events, traditional festivals, descriptions of paintings seen in Arts, pieces of news with comments, opinions, etc.

'New technologies', beyond the computer screen, can be found in the classrooms of robotics, music or psychomotor education, the radio, the laboratories, audiovisual materials, digital blackboards, manipulative or discovery games, tools for data collection or the observation of natural phenomena, etc.

In order to make this learning environment possible, since 2001, the school invests an important part of its budget in new technologies; not being enough, families also make donations through the Parents' Association. As a result, there is a computer for every two students up to the 4th year of primary education and each student has a laptop from the 5th year of primary education to the end of compulsory secondary education. All classrooms have a digital blackboard, a printer, a webcam and six computers. They are all part of daily school life and constitute another learning instrument, a useful tool which is perfectly integrated with the teaching methodologies and the school objectives and which is always available.

As already mentioned, learners do not only work with computers or in a digital environment. The school has more traditional resources and makes the most of the available **resources of the environment**. The town library is not an unknown place to students but an important resource centre for their projects, as it even lends them all its bibliography on a specific topic whenever the school needs so. The public sport facilities of the town, opposite the school, are also used when necessary. Finally, they also take advantage of the cultural offer of the town by attending performances of the different arts, going to exhibitions, etc.

But not all resources are material. Another learning tool, which is also essential to succeed in today's knowledge or any other society that might exist in the future, is the so-called '**sweet technology**': recognition and expression of feelings, self-esteem, respect and knowledge of the other, happiness, joy, affection, etc.

The challenge of evaluation

For the *Jacint Verdaguer*, evaluation is one of their most valuable learning instruments.

In the two schools, evaluation does not consist of periodic and final exams teachers hide so that nobody knows what they are going to be asked about. Their way of evaluating is not based on contents, but on skills as the basis for individual and collective learning. Results are not a number showing students' acquisition of knowledge—as compared to the rest of the class or the standards agreed by teachers for the subject—, but each evaluation considers each specific student and reflects his/her progress over the weeks; there is not a single evaluation for everybody.

They establish the following key aspects for an adequate evaluation:

- clear objectives in order to observe the processes
- process indicators
- useful skills to be developed
- propose similar situations where students can extrapolate what has been learned
- inform students about what they are going to be asked in the evaluation

However, the way of evaluating of public administration —external— is not yet so much based on skills, on processes, and it is then that conflict arises. Still, as it will be seen later on, the results of the school are satisfactory and over the average —as compared to other public schools.

4. NATURE AND QUALITY OF LEARNING

‘The Jacint Verdaguer would not be what it is without the work of all the people behind the school, without the contribution of all those who, day after day, make it possible that the school is a reality full of life and future projects’ (Josep María, headteacher of the pre-primary/primary school). And that is precisely the feeling when coming through the doors of both schools, seeing what happens there and talking to the people involved.

This school is more than a school. And that is thanks to the pedagogical leadership of the two schoolteachers and the most veteran teachers, who have succeeded in sharing their passion for learning to the rest of teachers, students and families. They also managed to transmit this passion to the team of researchers who visited the school.

The first striking thing in this learning environment is the care over its decoration and the organisation of the space both inside and outside the classrooms. There is not a single wall that has not been painted or that has not a piece of work created by present or former students; there is no space that has not been conceived to maximise its possibilities. When going inside the primary school building, one can find a snail farm in the corridor, a penguin getting out of a classroom, changes in the floor tiles because walls have been removed to make a more open room, wooden walls creating new meeting places, glass walls visually connecting two classrooms... In the secondary school building, walls are also coloured, there are shelves for laptops where there should be shelves for textbooks, tables with planks over them to make them bigger, transparent walls... A great many details which show that those who are inside these buildings do care about turning them into a nice and special place where one feels like spending time and doing things.

Once inside the classrooms, this creative environment continues. In the classrooms of pre-primary and the 1st cycle of primary education, students are arranged in different groups of tables, but work is not only carried out in groups and at these tables. The research team attended a lesson where some students were sat at their tables working in group and collaborating, while others were doing some computer activities in a different place in the classroom, others were fertilising the class plants with the teacher’s help, etc. There were students who were standing, others who were sat, there was noise... With such a cheerful decoration of the space, rather than a class of students ‘learning’ in the school, it looked like a game room where they were equally learning through action.

In the 2nd cycle of primary education, the team attended the individual presentation of a working plan. With the aid of the digital blackboard, a student was doing a PowerPoint presentation on the topic she had done her research. All students were very attentive and, once she had finished her presentation, after the applause, there was some time to comment on the aspects she should improve and the ones she had already improved since her last presentation.

In secondary education, the researchers observed they way a teacher introduced a new topic with a presentation on the digital blackboard, looking at all times for the participation of the group. This is one of the moments where the role of the teacher is more traditional, transmitting information, but, still, the whole class was paying attention, asking questions and making comments freely. They were taking notes on their laptops and, although, as mentioned by their teacher, *‘from time to time they use Facebook’*, they make a good use of technologies in general.

The other secondary education class the team of researchers attended was enjoying a radically different moment: students were not sitting at their tables, but standing, laughing and learning how to tie one's tie.

The research team could also observe that information and communication technologies existed side by side with 'sweet technologies', creating a nice global and modern atmosphere of exchange. A place where one feels like learning and confident to express himself/herself, make mistakes and show the way he/she is. Every single person who is part of the school is appreciated for being special and unique, his/her individual talent and potential and his/her ability to be part of a bigger group in order to do even more important things.

The teachers the team talked to are aware of the opportunities of the environment and the potential students and teachers themselves have. The most veteran teachers talked about the transformation of the school into a different place, better, where their effort is rewarded and they are proud of when, years later, they meet former students in town.

5. IMPACT AND EFFECTIVENESS

'It is not possible to philosophise, change things, and not getting better results. This is why it is the school's duty to monitor both the tasks completed and the knowledge acquired by our students' (Josep María, headteacher of the pre-primary/primary school).

Among the schools in Catalonia, the *Jacint Verdaguer* is known as one of the most advanced and best equipped regarding information and communication technologies (ICT). So much that, during the previous year (2009/10), the school was visited by 90 education professionals who wanted to learn about the way they work, ask questions, etc.

It is not only professionals of the educational world, but families are also aware that this school is different, that it is working to create an innovative and creative environment which motivates their children, improves their abilities, creates new ones and prepares them for the challenges of an unknown future. The teaching team has also shown families the way their involvement is essential for the intellectual and human development of their children, as it is necessary that the whole learning environment is coherent regarding objectives and methodologies. Thus, there are monthly meetings for the coordination of the management team and Parents' Association, the so-called 'recipes to educate', where both families and teachers think about the education of their children, the participation of families in the school workshops, trips, traditional festivals or festivals organised by families themselves, the 'information sheet' to inform about good attitudes, or the appointment of fathers and/or mothers as class representatives to improve relationships and mediate.

Both the involvement of families and the commitment of the basic triangle school-students-families are specified in a contract signed by the three parties at the beginning of each year. The contract includes the commitments assumed with the signing of the document, as well as the internal rules establishing the appropriate disciplinary measures the commission for coexistence might take.

In the words of Robert, the headteacher of the secondary school: *'there is still a long way to go, but we know where we want to go'*. This certainty in the final objective, as well as the effort and enthusiasm when looking for the way to take, give the pedagogical leadership of the two headteachers a great strength and confidence, which is passed on to the rest of the educational community: they all row in the same direction.

Thanks to this motivation in finding the best possible way to achieve a school which prepares students for the 21st century in an innovative and creative environment, the educational team has always been willing to change, try new methods, introduce ICT and be up to date, change again, be trained, exchange knowledge and experiences, work extra hours for which they are not getting paid, read about new discoveries in education, create materials, travel to learn about new ways of organising learning, change again, supervise new teachers, etc. *'Cooperative work starts with them'* and the result is obvious: teachers of the different levels who feel motivated, who enjoy their work, who are proud when showing the way they work, talking about their school or their students...

This positive attitude and common work might be one of the key elements of this successful learning environment. The educational team becomes a model of doing and seeing things which is transmitted to students and families. In addition, the joy and passion of doing what one does is also contagious.

Concerning the main protagonists, learners, the team of researchers was surprised by the atmosphere of the classes, especially in secondary education: sometimes students were silent, listening to the teacher and making relevant comments, whereas, some other times, they were capable of working autonomously or in group, in a responsible way and trying to make the most of each experience. In the case of primary education, they were surprised by the respect and attention paid to the work of their classmates when doing presentations, completing class tasks, etc.

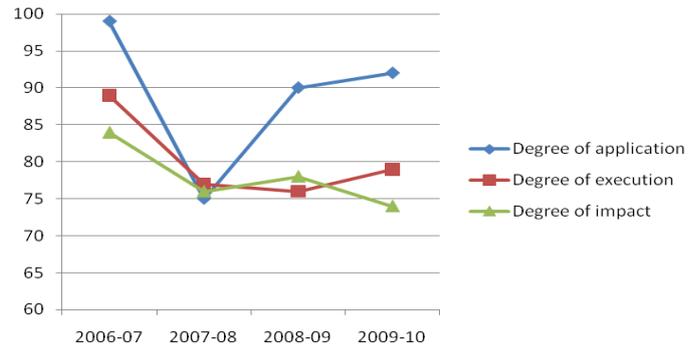
The diversity of tasks, the variety of methodologies, the possibility of attending classes without having to spend five hours sitting in the same chair listening, knowing that they can make mistakes because everybody knows that those mistakes precisely help to improve, feeling appreciated, important, discovering one own's abilities and their possibilities, relying on the support of teachers, peers, mentors and families when necessary, knowing that there will be something more than a grade at the end of the year... All this is reflected in the attitude and ideas of students, who see the school as something else than the place where one passes, fails or spends the day; they consider it as the place where one grows, experiments and learns about everything: adding, subtracting, reading, expressing feelings, building a minirobot or making a short film. In the secondary school, there are no absenteeism problems, attendance is almost 100% and the percentage of students who abandon their studies is very low.

From a qualitative point of view, the following graphs show the results of the internal evaluation of the strategies and activities of the objectives set for the school autonomy plan: improving educational results, improving social cohesion, having students who are responsible of their learning process and consolidating the integrated school (pre-primary/primary and secondary school). In order to monitor the plan, evaluation is broken down as follows:

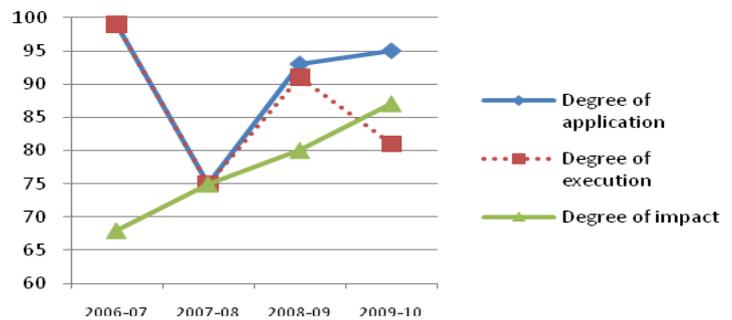
- each objective is clarified with a descriptor
- who is responsible is established
- the strategies to achieve it are specified
- strategies are described in terms of activities
- activities are planned considering a series of aspects such as the person who is responsible, target students, areas of application, timing, space, resources, methodology, degree of application, quality of execution, degree of impact, etc.
- degrees of application, execution and impact are graded —nothing (0); little (25); enough (50); much (75); very much (100)— and registered by a computer programme

- this programme makes a calculation and establishes a system of functions from which results are extracted

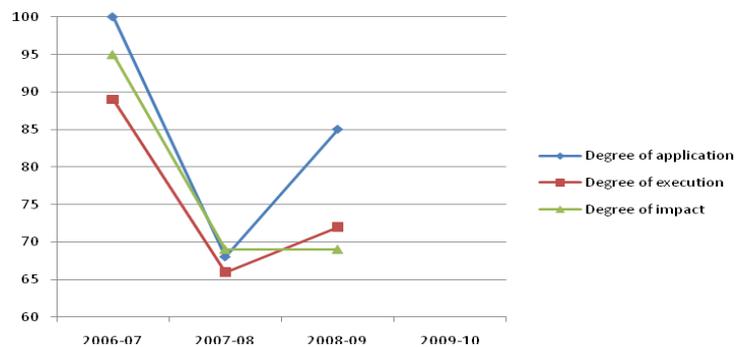
	Improvement of educational results (45%)		
	Degree of application	Degree of execution	Degree of impact
2006/07	99	89	84
2007/08	75	77	76
2008/09	90	76	78
2009/10	92	79	74



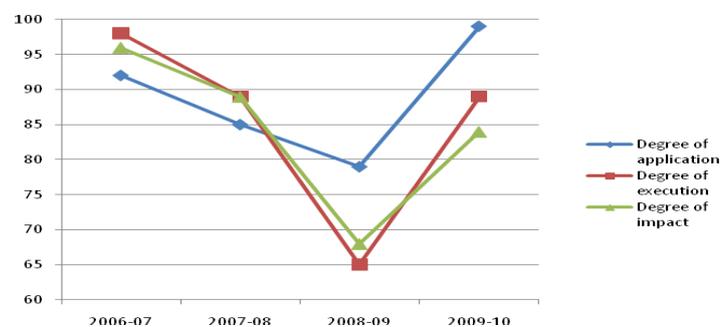
	Improvement of social cohesion (25%)		
	Degree of application	Degree of execution	Degree of impact
2006/07	99	99	68
2007/08	75	75	75
2008/09	93	91	80
2009/10	95	81	87



	Students being responsible of their learning process (20%)		
	Degree of application	Degree of execution	Degree of impact
2006/07	100	89	95
2007/08	68	66	69
2008/09	85	72	69
2009/10			



	Consolidation of the integrated school (10%)		
	Degree of application	Degree of execution	Degree of impact
2006/07	92	98	96
2007/08	85	89	89
2008/09	79	65	68
2009/10	99	89	84



Regarding the evaluation of basic skills conducted by the Department for Education of Catalonia, the results of the *Jacint Verdaguer* in 2010 were better than the results of other schools of the same Autonomous Community. They are shown in the following table:

Students who do not pass the evaluation	<i>Jacint Verdaguer</i>	Average of schools in Catalonia
Catalan	16%	28.40%
Spanish	12%	29.80%
English	26%	35.50%
Mathematics	4%	23.40%

Figure 18. Percentage of students who do not pass the evaluation of basic skills conducted by the Department for Education of the Autonomous Community of Catalonia.

The results of this external evaluation are very satisfactory for the school. However, they do feel there is a conflict between the form of the external evaluation and the internal way of working. External evaluation instruments are not yet designed to assess a way of working which is based on tasks and skills, and not on contents.

Finally, the most significant awards achieved by the school in the last years are worth mentioning: Education Award of the *Fundació Cercle d'Economia* (2009) to exemplary initiatives, *Baldiri Reixac* Award (2009) to the educational and linguistic projects of Catalan schools; *Cataluña de Educación* Award (2008), the national *Marta Marta* Award to quality in education (2007) and the international Video Award (2006).

We conclude this section with the words of the headteacher of the pre-primary/primary school:

'The results of the last years have been very positive and above the average in Catalonia. But the way is still long. From now on, it is necessary to verify at the long term if the ICT integrated into our educational project actually help to improve the result. So far, we have verified that the change is positive and that students do improve, but we cannot be specific about the importance of ICT in this process.

We would also like to say that there are no magic formulas in education, so there are years or groups where, making the same effort, results are not always the same. There is also diversity regarding this aspect.

What we can confirm is that groups that had certain difficulties, with cooperative work and the ICT resources we provide, have improved their motivation and results and, in some cases, have reached the objectives initially set, but not always'.

6. CONCLUSIONS AND REPLICABILITY

Based on the analysis of the characteristics of the *Jacint Verdaguer* school, this final section includes some aspects we regard as key to replicability of this innovative learning environment. This section might also help to answer the main question raised by the Innovative Learning Environments Project: *'How can today's schools be transformed so as to become environments of teaching and learning that make individuals lifelong learners and prepare them for the 21st century?'*

- **Key n°1: pedagogical leadership.**

A key figure to promote innovation in a learning environment is a pedagogical leader—or leaders. This person acts not only as a referent for the rest of the teaching team, students, families and other people involved in the learning environment but also a source of confidence, motivation and enthusiasm. In order to achieve this, he/she is to spend a great deal of his/her time looking for the best possible resources—either pedagogical, material or human—and listening to his/her community and other experts in education. He/she must believe in what he/she does and transmit it so that everybody rows in the same direction.

- **Key n°2: involvement of families and the community.**

Regarding the involvement of families and other education agents of the environment it is important to promote the existing information and communication channels and furthermore, to build new ways of collaboration to make an explicit commitment possible.

- **Key n°3: clear objectives and monitoring of the process.**

It is essential to clearly define the objectives and their indicators of success; the specific strategies and tasks as well as who are the people responsible for them are also to be established. Otherwise, it would not be possible to properly monitor the learning environment and more important, to detect needs and plan any changes required to fulfil the objectives.

- **Key n°4: students who are responsible of the learning process.**

The pedagogical team must work towards making learners play an active role in their learning process. Learners have to look for information and manage it, have initiative, make decisions on what aspects and how to work, negotiate with their classmates and help each other, manage their time, inform about what they have learned, self-evaluate, develop critical thinking...

- **Key n°5: cooperative work.**

Cooperative work promotes a type of learning based on values which are fundamental for the knowledge society: autonomy, cooperation and collaboration, shared responsibility, exchange of information and skills, communication... This way of working must be promoted not only among students but also among teachers.

- **Key n°6: preparation of their own materials and information and communication technologies (ICT).**

Teachers should use and design pedagogical materials to suit the class as a whole and the specific student when doing individual work. Likewise, the

educational use of ICT has demonstrated itself as a tool capable of providing the flexibility a dynamic and creative learning environment needs.

- **Key n°7: opening up to change.**

Every participant involved in a learning environment which is to become innovative and creative should be open to change and have a flexible attitude throughout this process characterized by renewal and transformation so that all creativity and innovation features become a constant throughout the years.

- **Key n°8: continuing teacher training.**

A teacher who facilitates learning in an innovative environment must get involved in continuing training in order to face any challenges arising in the school and enhance the opportunities offered by the environment.

- **Key n°9: role of teachers: advice, motivation and guide.**

Teachers must limit their role as transmitters of information to become guides who are able to understand learners and motivate them in order to develop their potential to the full.

- **Key n°10: stability of the teaching team.**

Learning environments should count on the stability of a teaching team that shares and believes in an innovative and creative educational approach and that constantly works for that purpose in an atmosphere of confidence and exchange. Thoroughly understanding the objectives of a learning environment, the strategies, the ways of acting and interacting with others, the challenges, etc. is a process that takes time and effort and that never ends. An unstable teaching staff means that, every year, an important number of teachers start from scratch.

- **Key n°11: adaptation of the curriculum to students' characteristics.**

Although the education authorities establish a specific curriculum at the national or regional level, in a creative and innovative learning environment it is the management team and teachers in every class the ones who must decide how to structure those compulsory contents and, above all, the way to develop the relevant skills in students.

- **Key n°12: formative evaluation, as a means and not as an end.**

Evaluation is to be conceived, by both teachers and students, as a tool to monitor the learning process. It must be an open evaluation where learners know what they are going to be asked about and are also capable of self-evaluation. Moreover, it is essential not to evaluate results but rather focus on processes and evaluate the skills.

- **Key n°13: flexible use of spaces.**

Creative and innovative learning environments should transform every space into an open and flexible one so that the use of space becomes coherent with the learning methodology and facilitates autonomous and group work. Certain elements such as colours, use of forms, construction materials, use of the light... have an influence on the feelings and behaviour of the people who are part of that space and, at the same time, they should also be able to influence space and transform it in order to feel comfortable. In addition, new technologies and the infrastructures they require to work correctly cannot be ignored: sockets, ventilation, storage, safe wiring, etc.

BIBLIOGRAPHY

- AUBERT, A; DUQUE, E.; FISAS, M.; VALLS, R. (2004). *Dialogar y transformar. Pedagogía crítica del siglo XXI*. Barcelona: Graó.
- *Decreto 102/2010, de 3 de agosto, de autonomía de los centros educativos*. Diario Oficial de la Generalitat de Catalunya (No.5686 – 5.8.2010)
- EURYDICE; CEDEFOP; ETF (2009): *Structures of Education and Training Systems in Europe. Spain*. Madrid: Spanish Eurydice Unit.
- *Ley Orgánica 2/2006, de 3 de mayo, de Educación*.
- MINISTERIO DE EDUCACIÓN, POLÍTICA SOCIAL Y DEPORTE (2008). *Premios Marta Mata a la calidad de los centros educativos. Año 2007*. Secretaría de Estado de Educación y Formación Profesional. Madrid: Secretaría General Técnica.
- MINISTERIO DE EDUCACIÓN-IFIIE (2009). *Informe del sistema educativo español 2009. Volumen I*. Madrid: Secretaría General Técnica.
- School autonomy plan. (Internal document of the school)
- School's educational project. (Internal document of the school)
- ICT strategic plan. (Internal document of the school)

INTERNET DOCUMENTS

Videos (in Catalan)

- School promotional video:
<http://www.youtube.com/watch?v=AzsESP528lo>
- Video explaining the different projects carried out:
<http://xtecmedia.blip.tv/#1804203>
- Video on the life of Dalí awarded a prize during the 'year of Dalí':
<http://www.youtube.com/watch?v=ABvxMyWfzRs>
- Video on cooperative work:
<http://www.youtube.com/watch?v=LzXCKQ4Wo-o>
- Different videos produced by students:
<http://www.iverdaquer.org/blocs/85-general/3805-videos.html>
<http://www.xtec.net/~aalas/talleranimacio/talleranimacio.html>

Digital materials prepared by the school (in Catalan):

<http://jverdager.org/jsmedia/cdweb/>

Documents (in Catalan):

— School's educational project:

<http://www.slideshare.net/jesteveg/pec-7357302>

— *Marta Mata* Award:

<http://www.slideshare.net/jesteveg/martamata-castell>

— *Cataluña de Educación* Award:

<http://www.slideshare.net/jesteveg/premi-catalunya-educacio>

— Educating in the knowledge society:

<http://www.slideshare.net/jesteveg/senado-7357550>