

Transforming Education

07.

## Redesigning Educational Spaces

*35 Scenarios to Outline Educational Change*

## **Transforming Education**

Collection directed by Xavier Aragay

Book

**07**

Title

**Redesigning Educational Spaces. 35 Scenarios to Outline Educational Change**

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Transforming Education

# 07. **Redesigning Educational Spaces**

*35 Scenarios to Outline Educational Change*

# Authors

The team that authored this collection is composed of:



## **Xavier Aragay**

is an economist and, since 2009, the General Director of Jesuïtes Educació. With his broad professional and life experience and his calling to service, he is at the head of the *Horitzó 2020* project. Those who know him personally say he is a visionary, open to dialogue, demanding and tenacious. He loves making diagrams, playing with words and enjoying nature, often climbing the most unexpected of peaks.



## **Jonquera Arnó**

is a teacher, and she joined the team in 1993. Since then, she has brought heart to the JE educational project. Trained in the humanities and with a profound spiritual life, she always works for and with others (according to her, she can't help it, since she came into this world accompanied by her twin sister). She is currently the Director of the Technical Office of Jesuïtes Educació. She is also in love with the sea.



## **Joan Blasco**

is a teacher, and since 2015 he has been the Director of the Pedagogical Model for JE. He specializes in didactics and school organization, and his mission is to settle the new pedagogical territories introduced by *Horizon 2020*. He combines his job for the network with management of the school Jesuïtes Sant Gervasi. He has been an athlete since his youth and, whenever he has the time, he takes care of the fruit trees he and his wife have in Matarranya.



## **Pere Borràs**

is a Jesuit (he will soon be celebrating the 50th anniversary of his commitment to the Society of Jesus), and is currently the JE network's Counselor. Always willing to help others, he has served as a professor, novice master, Provincial and President of the Foundation. He is an expert in Ignatian spirituality and in accompanying youth and adults. With his strong, direct personality, he enjoys life, comics and *Barça*.



## **Mauro Cavaller**

has a Licentiate in Philosophy, and is a coach specialized in writers. He is the Editor of the *Transforming Education* series, managing the collection as a whole and lending unity to the different books. As an artisan of ideas, he listens, empathizes, and brings together the different elements of the topics we discuss. He very much enjoys going to the movies.



**Daniel Iniesta**

has a degree in Labor Relations and has been the Director of Human Resources at JE since 2011. Always learning, he has served in especially delicate areas of the public sector, such as the judiciary minors, adoptions and cooperation. Passionate about everything he does, he always seeks the development of individuals. He likes swimming, jogging and reading (normally about the period 1914-1945).



**Pepe Menéndez**

has a Licentiate in Informatics, and since 2009 has been Assistant Director of JE. He has a broad knowledge of both the classroom and the management of educational institutions (he served as Director of the Joan XXIII school). In 2004 he helped draft the *Pacte Nacional per l'Educació*. He blogs and organizes debates in his own home, which are generally accompanied by fantastic meals that he himself prepares.



**Pol Riera**

has a degree in Business Science and is the Manager of the JE network. His long and varied experience and his ample training have bestowed him with good organizational skills and a wonderful sense of pragmatism. He enjoys working as part of a team and always does so with a great deal of optimism. He is a self-made man, and he is extremely enthusiastic about sports (he plays almost all of them) and motorcycles.



**Lluís Tarín**

has a licentiate in Pedagogy, and specializes in educational technology and executive development. At Jesuïtes Educació, he is the Adviser on Leadership and Strategy. As any good sage would, he constantly observes, reads and searches for clues to help understand the world. He always accompanies his analyses with an emotional aspect; it's safe to say he is a man of heart.



**Lluís Ylla**

is an agronomist, and at Jesuïtes Educació he dedicates himself to planning and quality systems. He organized the workings of *Horitzó 2020*, and through reflection and practice has also contributed to the development of a pedagogy of interiority. He has been the Assistant Director of JE since the Foundation was created in 2000. He is an avid reader who greatly enjoys going for walks and writing.



*The colours used in architecture must be intense, logical and fertile.*

**Antoni Gaudí**

Every second month the best verses written by the students are to be posted on the walls of the classroom to lend colour to the celebration of some special day, or the announcement of the class officers, or to some similar occasion.

***Ratio Studiorum***

*We should be able to see the relationships before the related terms.*

**Loris Malaguzzi**

*You've got to learn your instrument. Then, you practice, practice, practice. And then, when you finally get up there on the bandstand, forget all that and just wail.*

**Charlie Parker**



# Prologue

The great philosopher and educator John Dewey stated that school should not prepare students for the democratic society of the future, but create a small school republic which constitutes a parallel life, similar to the one that the students live at home or develop in their neighbourhood. That is, a community that adopts the habits, codes, rights and obligations that serve as guidelines for a democratic way of living together, as well as for sharing cultural stories and everyday experiences. Therefore, the quality of who teaches and what is being taught is as important as the scenarios themselves in terms of educational intervention.

The traditional pedagogical model of the 20<sup>th</sup> century is related to uniformity, repetition, boredom and darkness. In other words, the negation of life and students' freedom to fully develop their potential. We can all relate to the dull spaces, the black and white architecture, the dark and claustrophobic classrooms, the empty walls and the lack of space for teamwork, experiments or simply having a quiet conversation.

The innovative pedagogical model —as it has been understood by some public schools and the Jesuites Educació network— calls for a radical and systemic

transformation, thoroughly redesigning the furniture and architecture of the school. That is the reason to think of comfortable, rich, flexible and diverse spaces, according to the goals and activities that match the 21<sup>st</sup> century. Walking around some of these centres, you realize the possibilities that are offered by having bigger and multi-purpose classrooms where students can work in groups, sitting in different desks or on the bleachers, and by the cheerful environment provided by the bright colours on the walls and the glass dividers.

The scenery and decorations for multiple kinds of interactions are to make concrete what Malaguzzi defines as the hundred languages of children. To experiment and talk. There is an image stuck in my head: the agora, with a couple of children sitting down with a laptop and another group chatting on the sofa. It is a picture of a serene school, one that contributes to improving welfare, learning and to the happiness of children who learn how to live together in the school republic.

**Jaume Carbonell**

Author of *Pedagogies del segle XXI*

[*Pedagogies for the 21<sup>st</sup> Century*]



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# *Introduction*

I am writing these lines on a morning during the last days of August in 2015. I must confess that the first thing I do after the holidays when I get to the office on Llúria Street is tidy my desk. Loads of papers from last year are piled on it. I look at them slowly and I select a few.

The end-of-academic-year energy and fast pace seem so far off. Now, in silence, I should find myself again and get organized between these walls; I need my space. From desk, to drawers, to shelves. When the rest of the team gets here we will certainly fill the paper bins.

These first days are also to share the anecdotes from what we lived in August and the new places we discovered. We come back with positive feelings and more than one recommendation: “You can’t miss this town or that city!” someone says excitedly.

As a matter of fact, change is always positive. In other places and spaces we can rediscover ourselves, and this is surely the meaning of holidays. How different children seem after the summer camps! They’ve grown up a lot —imagine when they start the new academic year in September! We abandon our routine, we literally broaden our horizons.

This is what we have done with the third part of MEJE (*Model Educactiu de Jesuïtes Educació*; Jesuïtes Educació educational model). The Model for Change to Our School's Physical Space that is presented here implies a different school in order for different experiences to arise. It is not a matter of image. As we will see, it is an important consideration for the deep transformation of the education that we definitely need.

According to a recent scientific study carried out in the United Kingdom by the University of Salford, the design of a classroom can affect a child's academic progress by as much as 25%. That's right, 25%! There is no doubt that redesigning school spaces towards the new educational model must be and is indeed one of Horizon 2020's mainstays.

After the first year of the MOPI (*Model Pedagògic a l'Etapa d'Infantil*; Pedagogical Model at the Preschool Level) and NEI (*Nova Etapa Intermedària*; New Intermediate Stage), it can be said that focusing on school spaces themselves has proved successful. How could we, for instance, have been able to work in different collaborative teams but otherwise remain

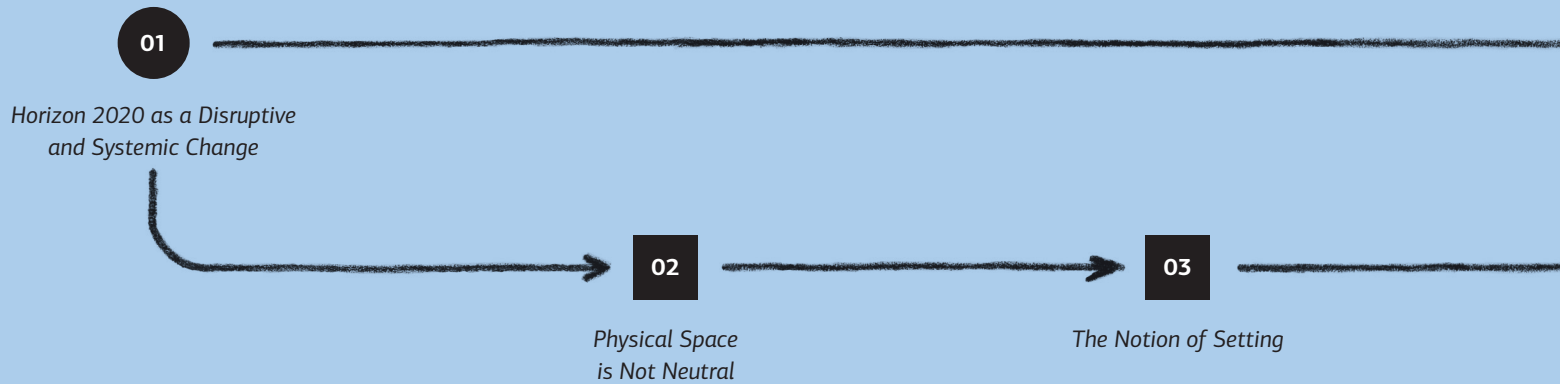
in the same room? And how could we have put learning by doing into practice in an environment that stimulates creativity and personal work without it?

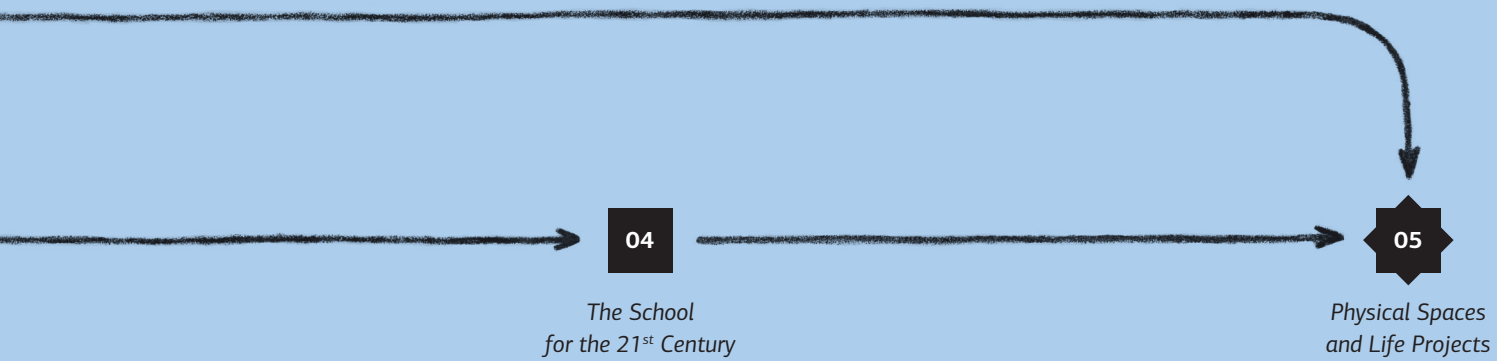
With no further ado, I invite you to read this book; it is a novelty in a field that does not have a clear tradition. We dream and make our dreams come true —welcome again to Jesuïtes Educació.

**Xavier Aragay**

*Director of the Transforming Education series  
and Director General at Jesuïtes Educació*

## I. Project Proposal





**07. Redesigning Educational Spaces.** 35 Scenarios to Outline Educational Change

# 01.

## *Horizon 2020 as a Disruptive and Systemic Change*

It has been stated from the beginning, from the very first book: the educational change that our present time asks for is systemic and disruptive.

Systemic, since it has an effect on all the elements in the school and education in general. If we only introduce new technologies or a new method to the maths lesson—to give a couple of examples—we will not make it.

And disruptive, because we must take a discontinuous and resolute leap forward, toward building the educational future we are aiming for now. If we aim only at maintaining the existing school and transforming it by gradually introducing changes, we will not succeed.

Horizon 2020 is our project, our convictions, reflections and actions for a school that adapts to a new, changing society. We are doing it body and soul, without limiting our efforts or leaving any challenge unattended.

And so we have also visited the classrooms, corridors and common spaces, the chapel,

and the cafeteria with architects and experts to refurbish them and in so doing to shape a new way of living at school.

Let us now analyse some facets of the reasons for these essential interventions. In the second part of the volume, the genesis of the model will be explained and, in the third one, its fulfilment in the schools. The fourth and last part will be devoted to recapitulating and summing up our vision.

## 02.

### *Physical Space Is Not Neutral*

First of all, it must be noted that any space has an impact on our experience in that space; it frames life with a context that makes it develop in certain ways and not others.

There is no such thing as a neutral, blank or empty space. As in physics, such a space has only an abstract dimension. Therefore, learning happens always in a specific present moment and place which —whether we like it or not— is fixed within specific boundaries.

In the vein of the way we are all able to identify what we could call common spaces for love, adventure or horror stories, we should also wonder about the spaces that promote life development for students and therefore education.

It is in the way rural schools take advantage of the natural environment that surrounds them to boost certain aspects of learning, or the way vegetable gardens have become a project that incorporates many cross-curricular and interdisciplinary elements.

If we all consider our own memories, we are able to remember not only significant moments in our

learning but also when and where they took place. It is difficult to quantify the contribution of spaces to these experiences. However, we may all agree that these spaces played an important role.

Design, space, and furniture arrangement in education determine the methodological possibilities and fix the behaviours and daily approaches of the users to their materials.

And today, this is not just an intuition or just an opinion. The interesting study by the University of Salford (to which we referred in the introduction and which will be further analysed in the third part of this book, chapters 31 and 32) shows that spaces have a direct impact on the learning process.

## 03.

### *The Notion of Setting*

Abstract space is an undetermined continuum. The real space in which we live is, however, a series of more or less fixed settings. Here is where events happen, where the great theatre of the world takes place.

There are settings that go unnoticed and others that are perfectly visible and purposefully organized. As an example for the latter, all we need to do is observe any parliament or presidential cabinet and its semicircular shape with the chairs or benches in it for the other members of the government.

Anyway, a setting encompasses the play that belongs to it. Therefore, we can state that within the urban landscape, the school building stands out as a setting for education and training.

We should also state that being on stage (those of you who have can relate to the feeling) has a special magic... On the day of the first performance, actors put forth all their talent, supported by the context that awaits them onstage.

Society has changed a lot over the last few years. It makes no sense to run a play with unmotivated

actors and empty seats. We are writing a brand new script together now; we should take the *mise en scène* into account as well.

So which stage design do we want? How are the different physical elements arranged to allow us to move from our current low spirits to a lively and truthful experience?

## 04.

### *The School for the 21<sup>st</sup> Century*

Despite technological advances and the different attempts to change our methodology over the past few years, we must admit that classrooms and the school building itself have been left out of the discussion.

These spaces have only undergone minor changes in the last decades. While our society is rapidly changing, school in general and the classrooms in particular remain as they were in the 20<sup>th</sup> century (and some as they were in the 19<sup>th</sup> century).

If we compare photographs of classrooms in two different eras, we may find some differences in the way students dress or in the materials of the chairs and tables. However —if we look closely— no major changes can be seen.

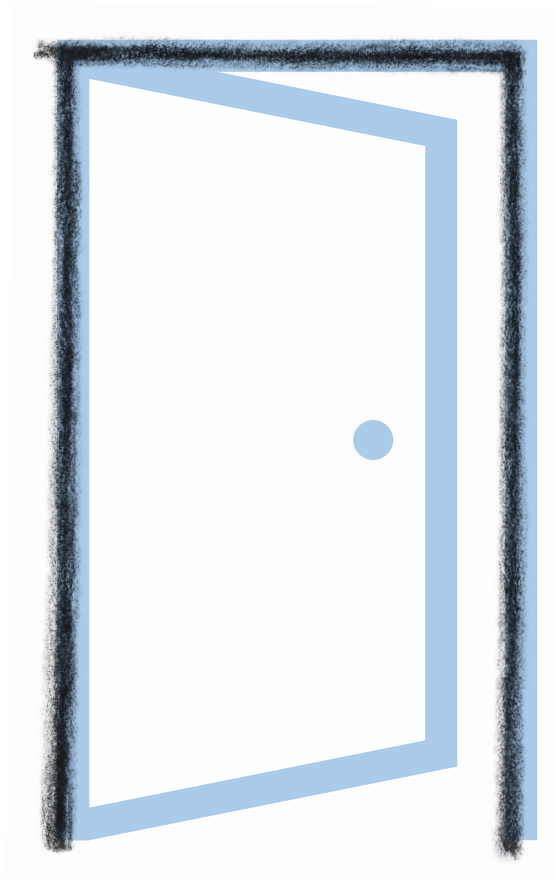
The first thing we should ask ourselves is related to classroom distribution: Where is the stage? Answer: At one end of the rectangle, under the blackboard and, sometimes, elevated with a platform.

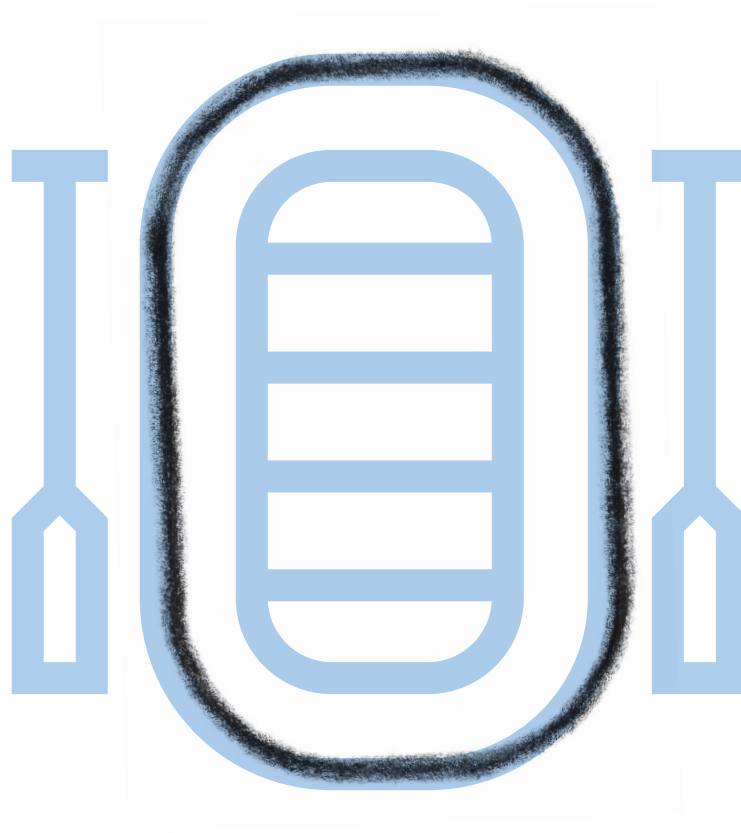
The second question is related to the main character of our play: In this model, who stands on the stage? Answer: The teacher or professor.

School is, thus, teacher-centred in regards to its fundamental design. That is to say, it is based on a learning and teaching process that revolves around the lecturer.

Put another way, “teach” is the most-used verb in a 20<sup>th</sup> century school, so the setting promotes and enables a rigid and one-way model.

But if we move to an educational model that has the student in the centre and is based on learning by doing, how will the classrooms have to be redesigned? Omitting physical spaces in this change would be like having a discussion while only one person held the microphone.





## 05.

# *Physical Spaces and Life Projects*

In this first part of the book, we have seen that changing a physical space is of great help when transforming an educational model. The school that we want focuses on the students and their learning. We must turn teaching centres into learning centres, and this includes the physical space.

Our main goal is to enable this activity. Learning, we should add, is an activity that no one can do for us. The step from ignorance to knowledge must be taken by every individual through actions that are motivated by personal interests.

This is what leads us to the core concept of Horizon 2020: the life project. The schools that are part of Jesuïtes Educació strive to help develop our students' callings.

This new school has to open doors to active learning and the richness of life; that is, open students to surprise, success, commitment, adventure, flexibility, challenges, empowerment and leadership in a cheerful environment.

We should remember what we've seen before, how settings shape our experiences and learning.

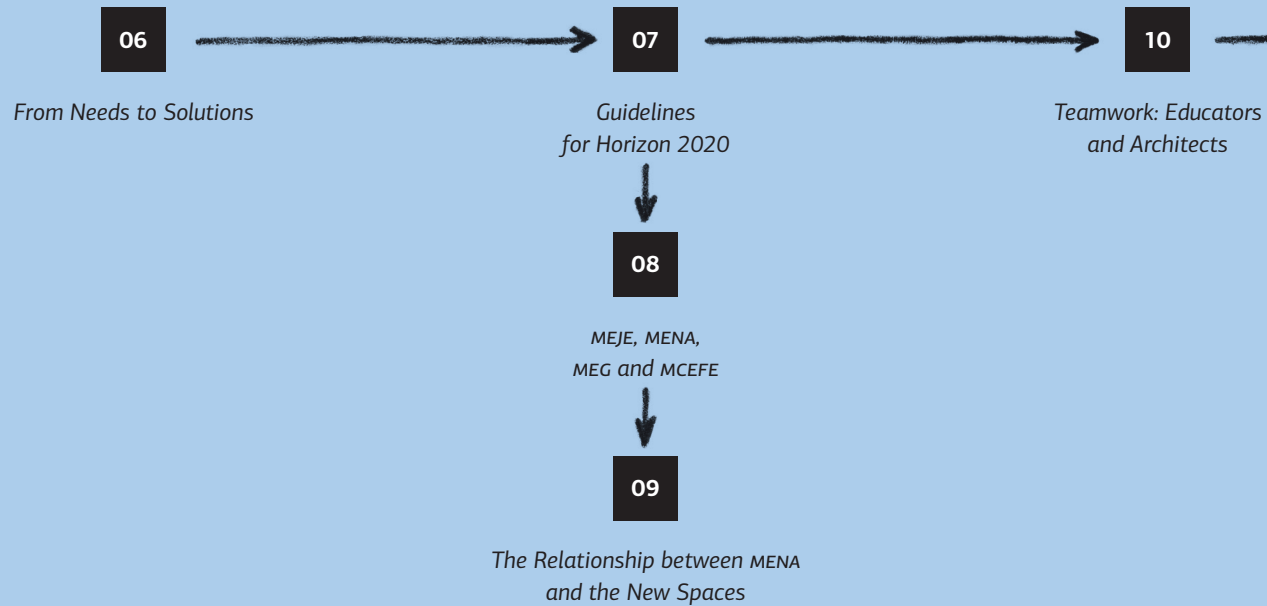
Berini's talent designed Saint Peter's square in the Vatican for a specific reason, right?

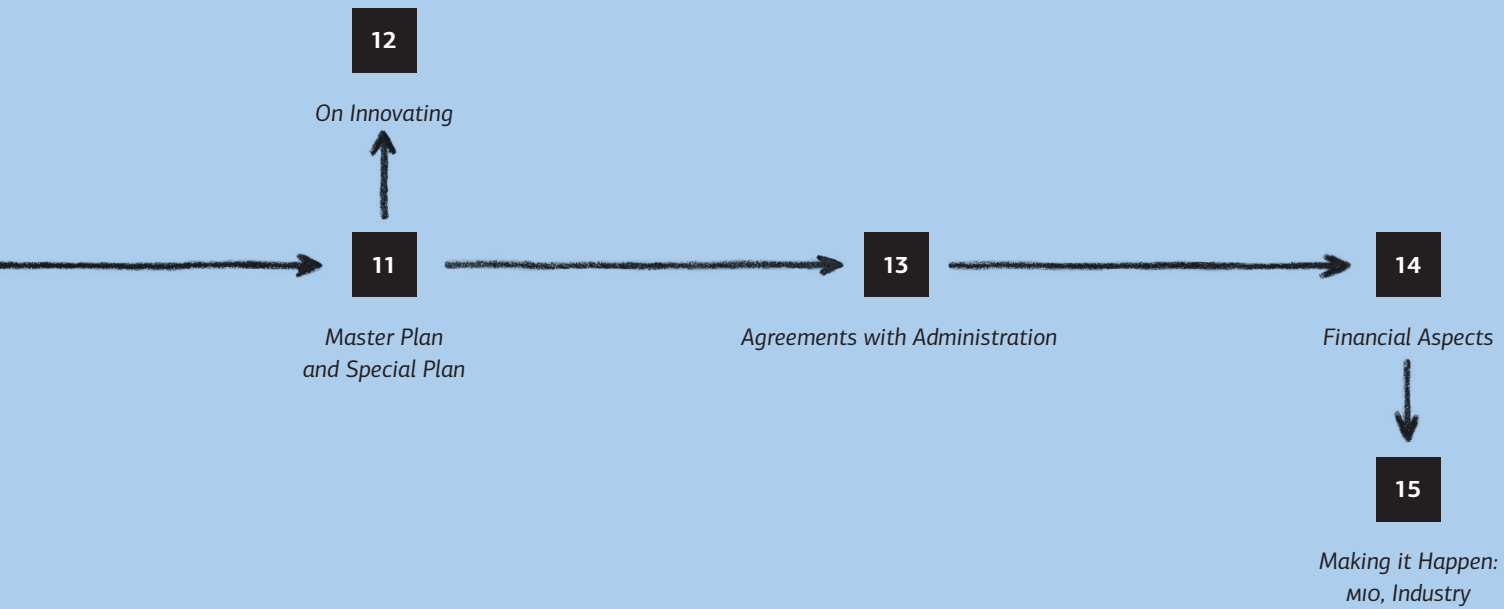
Yes, we are sure that we can transform our schools into learning and life entrepreneurship centres. And we truly believe it because there are other ways to live the school; because, among other things, we are not scared—for example—to allow students to move from their chairs and to passionately share what they are discovering.

Learning takes place when there are emotions and challenges and our reality has become fluid. What should be mapped out to make learning flow in schools as a fast-flowing river does in a canyon? What should the classrooms look like to enable the multiple facets and directions of this new learning?

All this is possible because in the school that we are already building, we define ourselves as a learning community. In NEI and MOPI, students and educators have different roles, of course, but it is also true that we all learn from each other. We are all on the same boat, rowing through rapids with the speed of a changing world.

## II. Project





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## 06.

### *From Needs to Solutions*

There is always something to revise in any given work. Our objectives are clear and the requirements of the administration are as well. We don't need to improve the existing but to take a much more ambitious leap forward; that is, we need to redesign the school we have from top to bottom the school in order to build the school we need for a different kind of education.

We take the future into account; a future that we wish would come true here and now. Throughout the Horizon 2020 process we must dream first of all, then determine what, and then move to how.

There will certainly be all sorts of difficulties on our way. Some related to the legislation, building, and funding, as well as to the educational culture that educators, students and families carry with us more or less consciously.

We could say that in developing this aspect of Horizon 2020 we make a definite bet. Transforming the physical dimensions of the school is a decision with clear and rather irreversible consequences.

We are positive that the results will help us make visible everything we have been promoting for months. The solutions lie right in front of us, waiting for us to bring them down to earth so that the whole community —everyone who is rowing toward educational change— can experience them.

This is a wide and attractive challenge, a complex equation that needs solving so that we are able to say “Yes, the school of the future is here.” It is said that if you look after something, it grows. We focus on the solutions at every step we take, every day. Let's move forward, let's plan.

## 07. *Guidelines for Horizon 2020*

The participative project which lead us to define Horizon 2020 during the 2012-2013 academic year (see book 03 in this series) brought us very clear signals about the spaces in the school.

In the 120 Basic Participation Units, we established a place to reflect on educational spaces. Of the different suggestions we received, we would like to highlight a few here:

Large, multi-purpose, comfortable rooms, with more light and colour, rooms that are soundproof and thermally insulated. Also, more cheerful corridors decorated with the students' work, quieter cafeterias, greener playing areas and with vegetable gardens, comfortable and flexible furniture, different spaces to think, work, act, play music or practice sports.

Some of the ideas that were gathered after the 414 Activities for Students' Participation matched the ones suggested by the UBP (*Unitat Bàsica de Participació*; Basic Participation Unit) while others were very innovative. We would like to highlight a few of those:

Rooms with sofas, playing rooms with table tennis table and a Wii; classrooms that are organized like the Google offices and are octagonal in shape with the teacher in the centre; gardens with benches, water fountains and animals, where outdoors lessons could take place; bigger tables and ergonomic wheeled chairs; lockers in the corridors; more space for the library and more books.

Putting the details aside, the students said it loud and clear: They don't want angry teachers or grey and depressing schools. This diagnosis is truly shocking...

Furthermore, they shouted out that they want a cheerful, open, colourful school, where life is not kidnapped by seriousness; where games, challenges and passion are the path to life learning.

A school full of life where one can live —this is the dream that we received from the eight schools in the Jesuïtes Educació network. And these are not outlandish ideas; we have seen them in other educational initiatives in Europe. They are very specific demands on a more human, life-based and more accessible school.



## 08.

### *MEJE, MENA, MEG and MCEFE*

In the two previous books, there was a detailed overview on the other way to express of Horizon 2020. However, there were the almost 57,000 ideas gathered during the participation process and the work done by the ecosystem of seminars that generate the Educational Model of Jesuïtes Educació (MEJE) and its submodels.

The Learning and Teaching Model (MEN A) and the Strategic Management Model (MEG) are two vertices in a triangle, and the third vertex is the Model for Change to Our School's Physical Space (MCEFE).

The inheritance of the 19<sup>th</sup> century's industrial model—which became more popular in the 20<sup>th</sup> century—is a specific kind of time and space management. Barracks, prisons, hospitals and schools seem to follow the same pattern: uniformity and discipline to increase efficiency.

So thoroughly transforming the school is not just changing the setting for learning. It shows a true revolution in the way we understand education for life and for society in general.

MEJE, MENA, MEG and MCEFE do not aim at producing anything in the future; on the contrary, they work together to embrace and boost the present, the life development of everybody in the school right now.

We are turning the school we want into a complete experience in and of itself; it is becoming an institution for the 21<sup>st</sup> century, with ecological relationships and end goals accessible to its members.

The times when going to school was just the step to ensure a better future have come to an end; as well as also going to work only to have a salary, holidays and, sometimes, a retirement pension.

Sacrificing the current moment, jeopardizing it for a supposedly secure future is a way to ignore our responsibility to ourselves. Horizon 2020 is therefore understood as a call to fill every day with consciousness, competence, commitment, compassion and creativity.

Let us now list the reasons to modify the physical space of the schools:

1. It was a requirement made by the educational community through the participation process for Horizon 2020.
2. MEJE and MENA cannot be fully developed without a change in the physical space of the school.
3. Intuition and experience have already told us that this aspect was essential for a deep transformation. Now, moreover, we have two experiences that confirm it: our own —from the ongoing pilot experiences— and the scientific study by the University of Salford, which shows that the classroom environment can affect a child's academic progress over a year by as much as 25%.

All in all, we understand the impact of the environment on human development. This is why we are looking for coherence between the school architecture, equipment, and our pedagogical model. These new spaces promote taking action, interacting and living together.

## 09.

### *The Relationship between MENA and the New Spaces*

Whereas MEJE provides us with the framework, MENA allows us to put it into practice: we must find a suitable setting for this new way of understanding and shaping the school.

First of all, there are no lost spaces. We understand that all the spaces in the school need to invite a certain experience or relationship with oneself and with others. By changing the colours or the desks and chairs, we are not only making the corridors and classrooms look more welcoming but also promoting certain behaviours and values.

The starting point to reflect upon and define the school we want is that the student, and the learning and teaching process are the centre. For example, we are betting on transparency. In the school we are aiming at, classroom boundaries are not traditional walls but glass walls instead.

A whole new concept of school and of people arises from this detail. At Jesuïtes Educació we would like to leave behind what we call “individualist opacity” and engage with the responsibility

of collaborative work. We have said it in many different ways and we have put it into practice in many different ways, but it has never been as clear as with transparent classrooms.

MOPI and the NEI ask for a specific number of students per classroom in order to attain different groupings and varied dynamics and methodologies. It is clear that the project-based learning, competency development and evaluation that draw from MENA need new spaces.

MENA and its manifestations in MOPI and NEI require a qualitative jump, moving from the traditional classroom to a new space-atmosphere. This new space would be multi-purpose, stimulating, fun, safe and comfortable; it would offer students and educators many essential possibilities for working, interacting and living together, all of which are bound to our model.

The needs of mena regarding space are as follows:

1. It must be easily adaptable to individual or group work, to reference topics or in project groups, etc.
2. It must be convertible to a library, workshop, mini-lab or game area.
3. It must be convertible to a stage or exhibit room.
4. It is a privileged display of learning processes.
5. It is a forum for dialogue and evaluation.
6. It is a space for praying or reflection.
7. It includes a permanent area for tutorials and for feedback as well as offering the possibility of subspaces for greater privacy.
8. It includes a centre for planning, for clinical sessions and for teaching team evaluation.

Let us now have a look at how we have worked as a team (section 10) and how we plan to undertake these actions (sections 11-15) to then analyse how these changes are carried out in the third part of this book (sections 16-27).

# 10.

## *Teamwork: Educators and Architects*

We continue to move towards the transformation of school spaces. In order to bring the project forward, we formed a committee with teachers, professors, managers and directors in the JE network. The goal is —as we have just seen— creating spaces for MOPI and NEI as according to MENA.

Once more, we look at the way Horizon 2020 works: it is the school itself which leads the change with the collaboration of the experts, both obviously and especially in this case.

Among the three architecture studios that we interviewed in 2012, we are most attuned with F2M. We quickly reached an agreement regarding the sense and scope of the project, and with Carles Francesch de Herralde, Esther Flavià and Araceli Manzano we defined our general priorities and specific executions. They are immediately excited about the project of change.

It should be noted that in this interdisciplinary work —apart from students, families, pedagogues, teachers, professors, directors, managers

and now architects— interior designers, technical architects, engineers, contractors and construction workers are also involved in the plan.

All of us contributing with passion to make the dream come true. What an important topic, for example, to define the height of desks and chairs! The architects together with specialists in this matter suggest a plan and then an interesting discussion on this plan and how to overcome its challenges is held by the educators.

We have always looked for a partners rather than technical service providers in this alliance. We need to merge, build a team and welcome the changes that come from outside the educational field. We should revise our organizational culture and leave inertia aside. Therefore, now that we have seen that they work well, we have moved away from our initial doubts about the tables and chairs, lighting and colours, blackboards and projectors, lockers and steps and now firmly defend these innovations.

# 11.

## *Master Plan and Special Plan*

We map out thinking about solutions, about everything we need in order to transform the school into a place for learning, relationships and shared life. And we do so by working as a team, with educators and professionals in architecture, guided by the structures of Horizon 2020 and its models.

What is the first thing we generate? The master plan for each school. We rethink spaces thoroughly while seeking and ensuring sense and cohesion in our interventions within the network.

Once these basic lines are established, we define—if it suits the planned interventions in the centre—a special urban plan. We are looking for a dialogue between the school building, or buildings, and their environment to redefine their relationship and better integrate them into each other.

Therefore, we are able to rearrange the spaces and to reach agreements with the city councils—as we will see in section 13. A special urban plan allows us to get to elements that

are not fixed in the school, such as the wall or the school grounds. We thus reach a complete approach and action.

As in our Horizon 2020 dream, it is very important to focus on what we want without any prior limitations. If we look at the regulations or restrictions, we will only get halfway.

We need a dream, a prejudice-free approach that gives us the power to solve the problem and then adapt to the conditions of any context that—as we will see— must be overcome with flexibility and determination.

We must add that the master plan and —when necessary— the special urban plan are planned taking into account two aspects; that is, according to the calendar of pilot experiences and their ongoing implementation as an integral action in school.

## 12. *On Innovating*

We consider it important to refer to the importance of innovating. To carry out a disruptive transformation means to jump towards what we want, leaving stability behind.

Therefore, the boundaries of the map must be crossed to step on new territories. It is important that the school we want is not only thought of according to the parameters of tradition, but also in terms of the current outlines which must be overcome.

We are aware that educators—even though they know the needs and the daily work in the classroom—are also too used to well-known references. We have said it many times: innovation in the school will come from the students—if we listen to them—and from the outside. We should, therefore, be permeable and open.

We state that *this will only be possible if we work together*, and this *together* includes professionals from different fields, not just education. This is the real teamwork, where we are working together with heterogeneous professionals towards a shared goal.

The creativity of Carles Francesch de Herralde's study was in the key element of innovation, going beyond and daring to design from scratch. A bold, different, new approach.

We also learned that innovation is, by definition, something alive; it is being constantly renewed. That is to say, we do not leave an outdated school to one side to move on to a new, finished and unchangeable school.

We learn by doing, and with every step we take, with every change in the architecture and furniture, we keep moving forward and finding new solutions; we are improving the model and its manifestations for a reality that is also changing. We incorporate constant adaptation into the flow of our present.

# 13.

## *Agreements with Administration*

As with any architectural work —and especially with such a large project— our proposal needs both educational and urban administration approval.

Our project is exciting to us and this excitement is what we convey to the Ministry of Education of the Generalitat de Catalunya [The Catalan Government] and to the Departments of Urbanism of the Barcelona, Hospitalet and Lleida-Raimat city councils.

They are long and intense conversations —each of which are a few sessions long— and we must say that the results have always been satisfactory. We reach agreements that, indeed, allow innovation.

Regarding the agorae that we mentioned before, for example, they make up the support classrooms (from 22 to 25m<sup>2</sup>) that all centres are obliged to have. As previously mentioned, we have grouped them in an open and multi-purpose space.

Regarding NEI classrooms, on the other hand, we must state that they have two entrances according to health and safety standards (fire exits) and also —due to the requirements by the Department

of Urbanism— a portable door to divide the classroom space in two, if need be.

To justify these measures of reconversion, these are all drawn on a map (the agorae also have their corresponding rooms sketched in) to justify these reconversion measures. With clear ideas in mind regarding the architectural changes, we have reached an agreement with the Ministry by discussing them and negotiating.

The response by the majority of officers in Generalitat has generally been very positive. We have had their support to carry out the changes we really need. We could say that while we have contributed with suggestions and transparency, they have reached the boundary of the rules to enable a new educational model.

In this book, we would like to thank once again all the educational administrations for their predisposition and the effort to make Horizon 2020 possible. Thank you very much to everyone who has helped and is helping us from their public offices and in all of their responsibilities.

# 14.

## *Financial Aspects*

Another constraint to bear in mind in planning this transformation process of the physical space of the schools is its cost. In current discussions, we have heard the same comment a few times: “What you’re doing is very expensive and not everybody can do it.”

Yes and no. Don’t we paint or refurbish our schools periodically? But let’s start from the beginning. First of all, we should say that school and education are like a bottomless pit: the more money we had, the more we would spend.

We must know what our priorities are; we should all row in the same direction and have a reason to save money. Dreaming up the school we want is what moves us on the financial aspect as it is the same excitement, for example, as of a family who wants to travel to a special place the next summer. In this way, saving money is possible.

In the JE network, we have been saving since 2009 to carry out these works. We knew from the very beginning that disruptive innovation would need economic support to hurdle the obstacles along the way.

Since Jesuïtes Educació is a nonprofit organization, the profit margin we have been able to maintain throughout these years has enabled us to make this dream come true and allowed us to invest in the future.

We define the project by placing an order and we seek a balance between actions, costs and results at all times. The investment is analysed and the price per square meter has been established to serve us as a guide. Here the structural actions are also taken into account and made affordable.

So, in the summer of 2014 the works started and in September the pilot experiences started for three levels in seven schools (P3 in Gràcia, Lleida, Casp and Poble Sec; 5<sup>th</sup> Primary in Lleida, Sant Gervasi and El Clot). During the second year, we intend to expand them to the three subsequent grades in the same seven schools.

If we count them now, as of the 2015-2016 year over 1,700 students have been provided with schooling in NEI and MOPI. This is the main challenge we have

taken on together. The investment is feasible in this because we anticipate, focus and gradually carry on works in a reasonable manner.

Here follows a synthetic summary of the keys of what could be called the virtuous circle of funding:

1. Everyday maintenance is oriented towards the change.
2. Professional management streamlines and improves the investment and expenses to increase the profit margin.
3. The margin is reinvested in the project as we are a nonprofit organization.
4. The all-around and network management allows cutting down on the expenses of the works and furniture.
5. The dream (the most important thing!) moves us and promotes savings that can be invested in this educational future.

## 15.

### *Making it Happen: MIO, Industry and Construction Management*

Before going through the elements of the new JE schools, we consider it relevant to write down the way we are carrying out these works.

First of all, we must state that in Jesuïtes Educació we have created MIO (the Maintenance of Work service in the network), which is in charge of hiring and coordinating the contractors.

This means that in the last years we have changed our organization and we have moved from having maintenance and building services in practically each school to planning these services as a network.

Relevant to that previous point, we must highlight that taking these tasks on ourselves has implied an important drop in expenses. Between the project, the F2M measurements and the work of the builders, there is no building contractor per se but an integral team of professionals, and this also cuts down expenses.

The building works are lead by a team of architects and the MIO board of directors, and all organizational levels are involved: architects, maintenance, building staff, and contractors.

One of the peculiarities of this undertaking is the time constraints. We often say that Horizon 2020 is like changing the wheels of a vehicle while in motion, and this metaphor also perfectly suits the building works.

Summer holidays (from the 24<sup>th</sup> of June to the 15<sup>th</sup> of September; that is, two and a half months) are the period we have to carry the building works out. We work against the clock and with a clear deadline that cannot be extended.

Therefore, prefabricated structures are present in the project but with imaginative and feasible solutions. A clear example of this is the rebuilding of the flooring. Instead of removing the existing floors, a resin dough has been applied on the old ones to build them up into new ones.

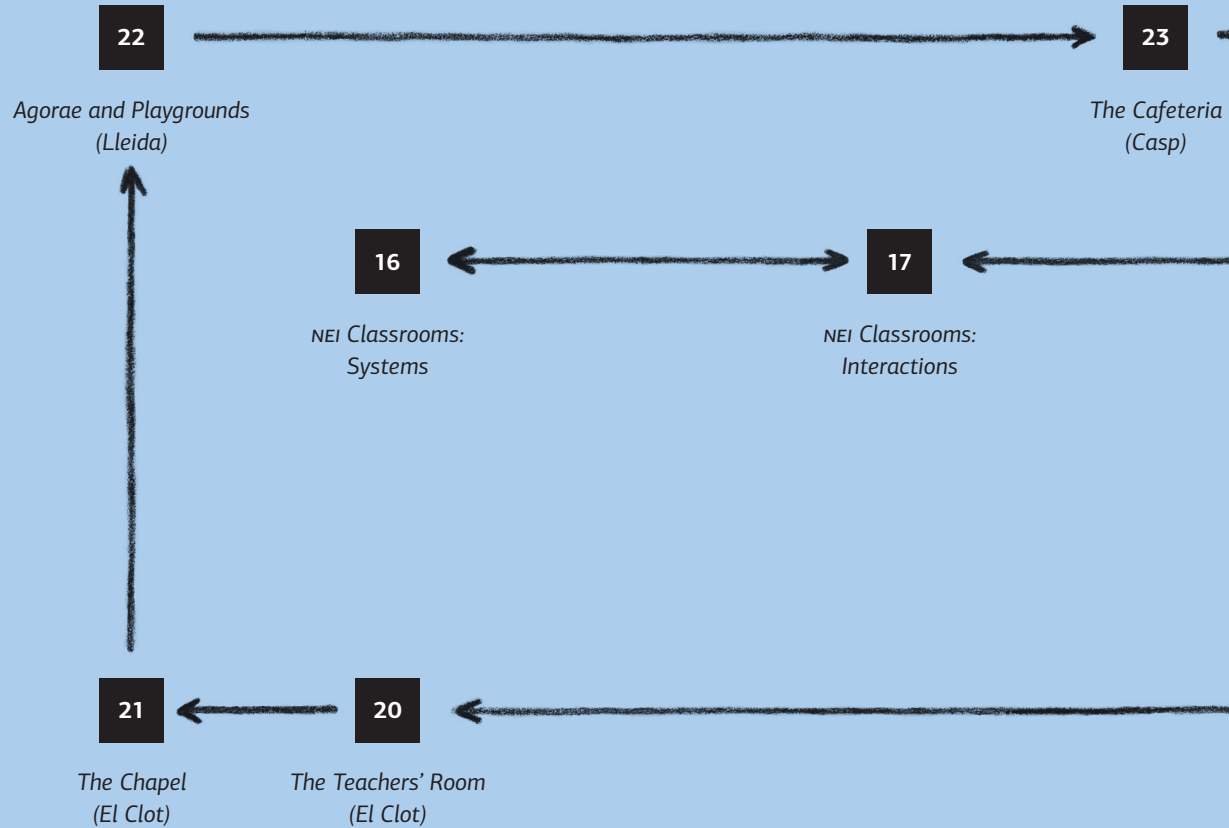
This modular or dry architecture is also present in the lockers, partitions, doors and fixed furniture. Standardization and working in different schools at the same time allows for a quick and easy installation (the work is done in the workshop and the elements are later installed at the work site) and also an important

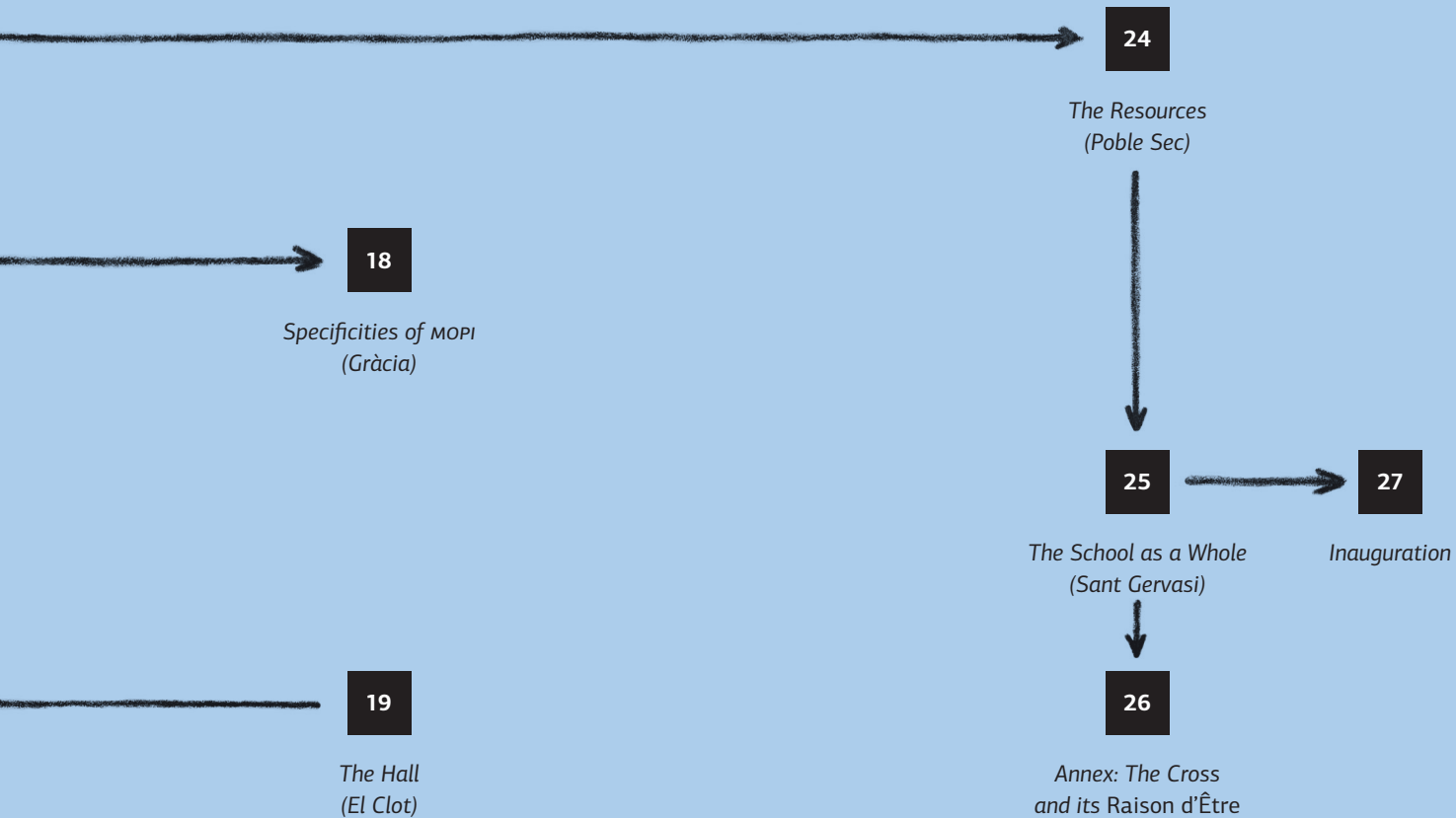
financial savings (a single large order rather than several customized orders).

Numbers speak for themselves. The transformed square footage was 720 m<sup>2</sup> in the summer of 2013, 5,800 m<sup>2</sup> in the summer of 2014 and 7,004 m<sup>2</sup> in the summer of 2015. Once more: the success of this adventure has been due to professionalism, integration of different professionals into the project, networking and a great deal of passion!



### III. Construction





# 16.

## *NEI Classrooms: Systems*

The most significant and important transformation of the physical spaces has been in the classrooms. In this first chapter, we will have a look at some shared resources in the school environment:

1. **Colour.** It is one of the main requests of the students. Now the school and the classroom shine with different colours. It is one of the most striking elements to our visitors or the people who see photos that have been published elsewhere. Each classroom has two colours that make it special (in addition to white).
2. **Lighting.** Our intention was very specific; the more natural light, the better. We have opened windows as much as we could; with regards to artificial light, we have used LEDs that use an intelligent sensor to self-adjust in order to have the same amount of light inside as outside.
3. **Air.** This is another essential aspect to comfort. The heaters constantly warm and renew the air through to a system of fans and probes that lead CO<sub>2</sub> to the roof. This system—as with the lighting—is self-governing and works with intelligent sensors.
4. **Water.** All of the classrooms have a sink and a tap. Learning, as we have constantly

stated, is not only intellectual. We take action, we design projects, we build, we experiment. We need, therefore, a water point for arts and crafts, science experiments, and also a way to drink and wash our hands without having to leave the classroom (bear in mind that this means the usual breaks between lessons disappear).

5. Sound. Having almost twice the number of children in a classroom as before and being in bigger rooms poses challenges when managing and reducing noise levels. The false plasterboard ceilings and the resin-based flooring provide the rooms with better soundwave absorption to improve acoustics.
6. Technology. Needless to say, the classrooms have WiFi, speakers, microphones, a projector and a wireless screen. Students use laptops, smartphones and tablets when needed. With this technology, it seems obvious that plugs are installed on all the walls as normal infrastructure.

7. Boards. Large magnet and glass boards (that spread over almost the whole wall) which allow for easier and more flexible interactions. Since they are white, these boards are almost invisible. It is possible to use a wide range of colour markers and to stick papers or other elements on the magnet boards.
8. Enclosures. We have already mentioned it, but the doors are —whenever it is possible— made of glass. We gain space and we lose individualistic habits. At Jesuïtes Sant Gervasi, we even changed out a load-bearing wall for metal pillars in a complex intervention in order to reach this goal.

# 17.

## *NEI Classrooms: Interactions*

If resources improve the quality of the classroom experience, the furniture and the arrangement of the space helps the experience itself. Therefore, we can outline five important elements in this new way to interact in the classroom:

1. Chairs. Students spend long hours sitting in their chairs. They should, therefore, be ergonomic and fit students' needs at different ages. The flexible and curved back satisfies the first need and the spacious, armless seat is also comfortable if we want to sit sideways. The rubber stoppers fix them to the floor while avoiding noise and, due to their metal legs, they can be put on the table easily and without having to turn them around.
2. Tables. The desk is no longer the basic unit (one chair, one desk, one student), and we now must take into account the room needed for two students. At each of these tables there is room for two computers facing each other. Apart from this basic unit, there are also rectangular and polygonal tables (half hexagons) which can be gathered in many different ways (circles for twelve students, for example). All of them have two of their legs with wheels. We must note that —like the chairs— the height of the

tables is also specific to every year, and they are slightly shorter than the traditional ones (they look like dining tables rather than desks) so that they are more comfortable and enable cooperative work.

3. Bleachers. These are brand new in the classrooms. The two or three levels that shape the inner part of the stands are lockers for the students. Colourful and bright, they are an essential feature of group work in a truly innovative way. How different it is to give an oral presentation with the classmates sitting on their chairs around the classroom as opposed to giving it in front of two or three amphitheatre rows. This architectural resource, moreover, refers us to one of the traditional spaces of relationship between youths: the steps in town squares.
4. Poufs. Each of the tables has some malleable poufs. In line with the way we have designed the spaces, these elements are the clearest indication of breaking with the stiffness

of the past. Why can't we also learn on these big coloured cushions? Playing takes place in the classroom. We must say that poufs are particularly useful as main elements in the agorae, where there are no chairs.

5. Study rooms. Classrooms are learning spaces that allow for multiple interactions, including the interactions between tutors and the ones that require a certain level of calm among the students. For these reasons we have also included two small study rooms in the room which are multi-purpose, soundproofed and with glass doors. One is used as an office for the three teachers that share the classroom and the other functions as a place to work, share and chat in small groups.

## 18.

### *Specificities of MOPI (Gràcia)*

This description of the classrooms deserves a specific point when we refer to MOPI. Here, we introduce the example of Jesuïtes Gràcia, where the four existing rooms have become one.

Can you imagine turning four classrooms for twenty-five students each into a single large one for three-year-old children? Yes, the transformation is so significant that we no longer refer to it as a classroom (even though we have installed two sliding doors to be able to divide the space, if need be, at specific times of the day).

We have proved that the children like the size of the new classroom. And they like it very much. So much so that a child asked his father why he could not go to school on Saturdays. Truthfully, since when we do not refer to classrooms anymore, we cannot refer to simply to students, either.

We have a big room to carry out activities. How lucky we are! And the young ones can try out and visit different corners in turns. Therefore, we have a auditorium or theatre with a stage and a projector.

We also have a space for arts and crafts, one for reading and —finally— another one devoted to games.

At these ages, we should stimulate learning and take care of the children's emotional development. The relationship between children and peer learning becomes a key aspect of our project.

When thinking about the spaces for the youngest ones, we do not only take safety into account but we also use all our physical resources to promote discovery and experimentation: touching, tasting, playing, sharing, learning.

What is a playground house with a slide doing in the middle of the room in Lleida? Here the colours are brighter than in NEI and everything can be discovered through play, even the lighting. In other words: we have installed a 45-metre long winding light tube in the false ceiling in Bellvitge to this end.

Can you imagine the potential effect of switching off the rest of the lights and keeping only these bright changing colours on to tell stories? Children lay on the floor; it is all so quiet:

“Once upon a time, on a far away planet, there was a rocket...”

Having proved the importance of the space itself and its atmosphere, especially in early stages, we need to express our will for the young ones: to be able to enjoy an educational space with a cheerful, pleasant, stimulating, safe and autonomy-promoting environment.

We offer children a great educational space where they can express themselves, observe, manipulate, build, communicate, feel, celebrate, interact, experiment, play. Following in the footsteps of the pedagogue Loris Malaguzzi, we offer a space where things take place and where people live; that is, a space and the atmosphere to help children learn and grow with others: a space to live.

# 19.

## *The Hall* *(El Clot)*

A long time ago, the leisure and entertainment industry had it perfectly understood: the show starts at the same moment that we enter the venue or even before that, such as when we see a colourful big top.

As we mentioned in section 10, there are no useless spaces in the new school. Everything is the school and therefore education. We are not talking about turning the school into a theme park, but this example can be used as a reference regarding the use of the space as a tool to work toward an overall educational experience.

If each stage creates certain stimuli that promote certain emotions and/or actions, we cannot leave any of the spaces unattended. In this sense, the school entrance appears as one prominent point in the restructuring we strive toward now. In this particular space we cannot have a soulless environment.

We must say that in Jesuïtes El Clot, intervention in the main hall is part of a master project with a broad scope. We aim at transforming the cold appearance of the centre into a warm and comfortable space inside and outside that invites learning and life development.

We often choose restaurants in cities we do not know by the way they make us feel when passing by. What do we want to transmit with the entrance of the school? For those who have been there, do you remember the magic of the helicoidal ramp at Cosmocaixa in Barcelona?

The interior design of the entrance must be attractive from the very first moment and also contain a message. Here, mainly wood and glass are used. We have a modern and cosy reception area with showcases and integrated screens, a space that welcomes us, that does not rush us, that hosts us.

## 20.

### *The Teachers' Room (El Clot)*

When we design a master plan, we rethink the school. The students are in the centre but the scope of action reaches other spaces in order to transform the overall organizational culture.

Teamwork requires broadening the consciousness of life, sharing and feeling as a team —this also applies to the teachers in a centre that is oriented towards change.

A prior example of the new teachers' room in Jesuïtes El Clot can be found in the Jesuïtes Educació office on the seventh floor at number 15, Roger de Llúria street in Barcelona. The board of directors works in a wide and open room with three rows of tables that fit four people each. Only the Director General has his own office (closed off, but also with transparent glass).

On this floor there is also a room for working, one for meetings, a breakfast room and a bathroom. This is a clear statement of intent about the way we promote working as a team, collaborating, carrying out interdisciplinary work; it is an office adapted to the modern times.

Therefore, the teachers' room in El Clot reminds us of a working area in a library. The brown and white colours are juxtaposed to provide us with the calm and quiet needed for working. Tables, chairs, shelves, lockers and sofas are available and shared.

We must add that the teachers' room also employs a closed working space for ten people that can be booked beforehand, and an area with a sink and a coffee machine.

We have gone from small, enclosed spaces in the building to a room that spreads over the area once occupied by four of the former rooms. We add on, collaborate, leave behind the closed dividers; we all offer the best in ourselves to promote learning among the students. We are all part of the network and we work for it.

## 21.

### *The Chapel (El Clot)*

We have also built a brand new chapel in El Clot. In line with the aim of designing a more coherent school, we have moved it to the ground floor and moved the welding workshops for the Cicles Formatius (Higher Education) to a previously unused warehouse. The space of the old chapel has been used as the new place for the agora for Batxillerat (A-levels) and for two other rooms.

In terms of the new chapel in the school we should highlight the height, which invites to spiritual elevation. The arrangement of the benches around the altar, which symbolizes the centrality of Jesus (the altar is the middle of the room) and the perimeter lighting reinforce the communion of parishioners.

The communion of people is a clear way of facing the fragmentation of today's lifestyle. The fraternity between all the members of the community —everyone sitting down and taking part in the celebration around the altar— shapes us as a compact unit to state our faith and offer ourselves to serve others.

We must also underline the central location of the altar, which is in tune with the New Evangelizing

Strategy (see section 08 in book 04). The experience of the God of Jesus Christ is closely related to the task of defining our own life projects.

Jesus of Nazareth is a most excellent example of Christian and human life. This project gives our everyday acts meaning and, at the same time, lays the foundations of the plan which we all build with our own existences.

The experience of Jesus gives us the opportunity to completely live our lives and it helps us expand all our dimensions: body, intelligence, emotional nature, inner being, sociability and spirituality.

On one hand, this architectural intervention has allowed us to finally have a direct entrance from the street, which is useful since it enables the Christian community with whom we share the chapel to access it directly from the street on the weekends.

On the other hand, we must add that this new space has an altar for catechesis, a meeting room and space for leisure activities. Moreover, flexibility in the furniture allows for a multi-purpose use of the room. With easy movement of the elements, any kind of meeting can be held there.

## 22.

### *Agorae and Playgrounds (Lleida)*

In this overview of the different schools in the pilot experiences and the different actuations produced from meje, we must highlight that Jesuïtes Lleida is the only centre in the network that has introduced MOPI and NEI simultaneously.

Let us now have a look at two different spaces in the classroom that are very important to the students' life project development: the agorae and playgrounds, their squares and meeting points.

In this renewed way of understanding the space and the learning that takes place there, these open spaces allow the students to have even more dynamic interactions. We stated it at the beginning of this book when we talked about rural schools and the natural environment.

Here we do not have an organized space, either. Empty space shows its genuine possibility. Agorae are, therefore, spaces for working and talking, or for individual or group play shared with others. The modular poufs, on another note, invite creativity; they help us look at things from another point

of view (you cannot imagine how many ways the students play with them).

In terms of playgrounds, we must mention that we have started a project in Lleida to rethink and revalue them. We do not want to use the playground only during the breaks; we want to broaden the games that take place on the playground and fully include it as another educational space.

With regards to this idea, let us add that over the 2014-2015 academic year we have carried out observational studies and distributed questionnaires to start a participative process. We want to promote collaboration between the different members of the educational community, and we want to be able to design the playground in a way that takes into account both morphological and pedagogical possibilities.

## 23. *The Cafeteria (Casp)*

Lunchtime is also an educational moment and presents a great challenge to the schools if lots of students stay in for lunch. If —as we were asked to by the students— we consider the way they work and organize themselves at Google, we can also be inspired by the way they have lunch.

Therefore, the cafeteria —and lunch time in general— becomes a new, truly educational space.

In the Jesuites Casp school, we have built a bigger and completely different cafeteria. The kinds of tables, chairs and colours used in the pilot experiences are introduced in the cafeteria as well, and we can identify some continuity there.

Within this transformation, let us highlight the youth cafeteria for Secondary education. The students in Secondary serve the food themselves. They have this new self-service system as well as higher tables and stools.

Apart from the new kitchen and furniture, we must say that introducing this option has required some extra effort. It was necessary, firstly, to find a solution to a crowded space by increasing the cafeteria's area.

Secondly, we had to build an exit door to the outside from the basement where the cafeteria is located.

There was a high degree of technical complexity to this modification. We added square metres by digging down through the basketball court in the playground and, for a few weeks, part of the building was cantilevered; that is, it had no true foundation and was held up by provisional structures.

Today, the cafeteria in Casp is at once more functional and safer. Monitors and students feel more comfortable there; they have lunch in a less stressful, brighter, wider and more colourful environment.

Moreover, we have programmed activities in indoor spaces during lunchtime which have been very successful.

All of the above is mentioned within MENOF, or the *Model d'Educació No Formal* (Non-Curricular Education Model). This model helps us plan and move forward beyond the old curricular educational spaces in promoting the improvement of the students' life projects. As it has been clearly shown, Horizon 2020 has an organic growth pattern.

## 24.

### *The Resources (Poble Sec)*

Let's move back to the financial aspects covered in section 14. We will now have a look at a specific case —Jesuites Poble Sec— one of the four centres that started MOPI during the 2014-2015 academic year.

Firstly, we must highlight that it is a small school (from pre-school to 6<sup>th</sup> Primary); regarding its socio-economic aspects, this is the centre with the greatest financial difficulty in the network. Moreover, the building is affected by *aluminosi* (a structural problem caused by the degradation of the poor quality concrete of the buildings), so we have to decide if it will be knocked down and rebuilt or not.

In this context, we must ask ourselves if a large investment is meaningful. Space is very important, but we also have to take into account that if the educational project is strong enough it can be carried out without having the facilities at full strength.

And that is not all. In the JE network, one of the places where innovation first took place

was in this school. Educational needs brought the board of directors to start the 2012-2013 academic year with a reorganization of spaces.

To that end, over the summer a partition wall was removed to join two rooms together so the groups in 1<sup>st</sup> and 2<sup>nd</sup> grade in primary education could learn together; it worked very well.

Collaborative work and the beginning and end-of-the-day activities —to name a couple examples— have given us many clues which help the ecosystem of seminars to continue innovating.

We note how the resources and the reorganization of the physical space are important, of course, but they can never constitute a reason not to start implementing change towards the school we want (and that we certainly need).

In other words, the transformation of education is easier if we change the space and furniture, but it is also possible without a thorough intervention.

## 25.

### *The School as a Whole (Sant Gervasi)*

The transformation of physical spaces must lead us to live school differently. This is because—as we said before—all the settings are essential.

In Jesuïtes Sant Gervasi (for example, as in the La Salut building in the former Cormar school, which is now part of Jesuïtes Gràcia) we are carrying out a global cultural transformation with our progressive works. Even though we might not realize it, years go by and the darkness of the past—if action is not taken—is perpetuated.

Schools like Jesuïtes Casp or Jesuïtes Sarrià have looked at this fact closely and a few years ago these schools were transformed. A good example of this is the space for worship in Casp, where the Sant Francesc Xavier chapel won the 2006 FAD Opinion Award.

As seen in this book, with MCEFE we also take into account the classrooms, the halls, the cafeteria, the playground. We do not have a compartmentalised approach.

Therefore, even though in Jesuïtes Sant Gervasi the old and new spaces are now combined our approach to the change is both holistic and systemic.

We have started with new classrooms for NEI and in September of 2015 we have also inaugurated the new cafeteria which—as was the one in Casp—has been welcomed with enthusiasm by the students and their families. If we aim at making the whole school educational, on the new Horizon 2020 path we will have to transform the school as a whole.

## 26.

### *Annex: The Cross and its Raison d'Être*

From general to specific. Following the same descriptive line as in the previous section, we would like to mention —before concluding this third part of the book— a small detail in our classrooms, one which is still quite important to us.

We are referring to the cross on the walls. It is a small, simple, sober and wooden element; we focus only on the essentials.

Even though it is a cross without Christ (as with the Jerusalem cross, among others), its aim is to symbolize the Christian cross, which frees many men and women who suffer. It is a sober and simple reminder of the freedom of Jesus. It is also a call to accept the crosses that we are bearing.

That humbleness is precisely what we want to transmit with our cross; we should be connected and simultaneously not self-centred. A full life is not a life of satisfied wishes but a life that has been emptied to allocate mystery to it and that keeps us in communion with the rest of the creation.

We understand existence as intensity, happiness, light, growth and essential desire. We are all called to share our lives, to climb the tree of the cross, the tree of life. It is Jesus who —through the cross— brings life to us.

Our cross is also a travelling cross, a pilgrimage cross, one like the cross that could have carried our pilgrim, Saint Ignatius. His simplicity is reflected in this cross.

In fact, pilgrimage is always an adventure; we have seen it with Saint Ignatius. While on his pilgrimage, he was ridding his being of superfluous things and was getting closer to the presence of God without any possessions.

## 27.

### *Inauguration*

All the difficulties and the long process that a project proposal, project itself and the works imply are meaningful beginning on the day the new spaces are inaugurated and used. So when our protagonists entered the classrooms for the pilot experience for the first time in September of 2014, they were astonished.

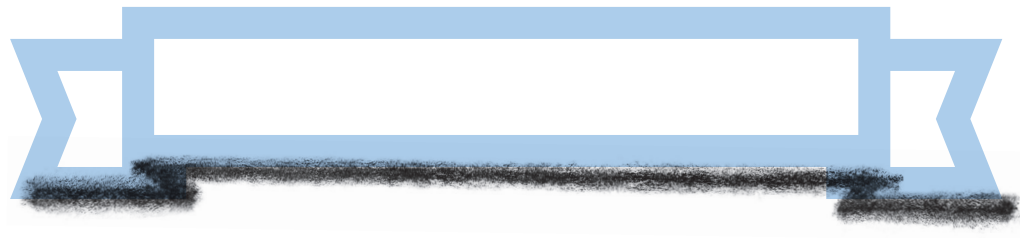
We refer to the students, of course, but also to the teachers and parents who got to know the spaces when they came for the beginning-of-the-year meetings.

It is truly amazing to see the spontaneous happiness and enthusiasm on their faces generated by the materialization of MCEJE. This is the first irrefutable proof that environment has an influence —and what an influence!— on emotions. And have we not stated in another book that emotions are essential for significant learning?

As the philosophers say, aesthetics are related to ethics. This is because shapes —through their outward appearance— express intangible ideas: values, procedures and presence.

This is exactly what the families who started MOPi with their children in Jesuïtes Gràcia could feel. The fact is that parents could share the first day of school with teachers and children and could see that instead of just students, the boys and girls were learners who played; they were part of an educational community that learns together.

Finally, we just want to add that on some of the visits —when we were about to enter the new spaces— with a smile, we said, “Welcome to the future.” After the impression that these spaces made on the visitors, somebody mentioned to us that the expression was literal.







Jesuïtes Lleida  
Claver-Raimat School





Jesuïtes Lleida  
Claver-Raimat School



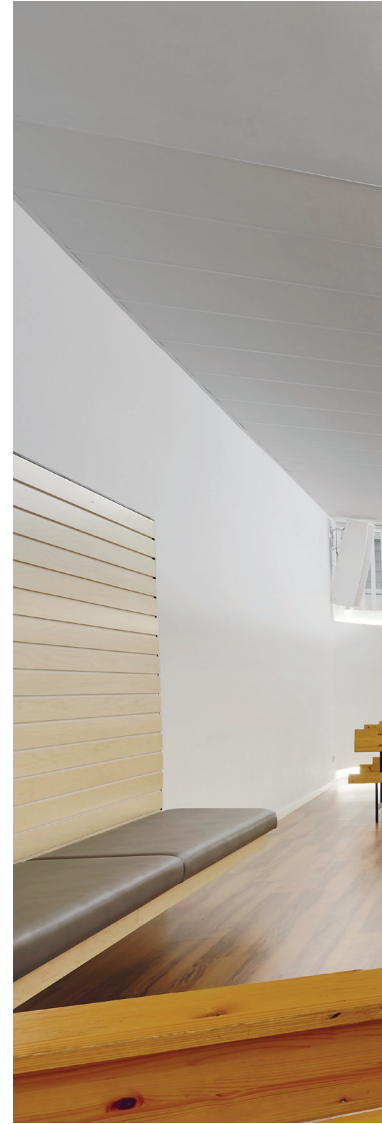


Jesuïtes Sant Gervasi  
Infant Jesús School





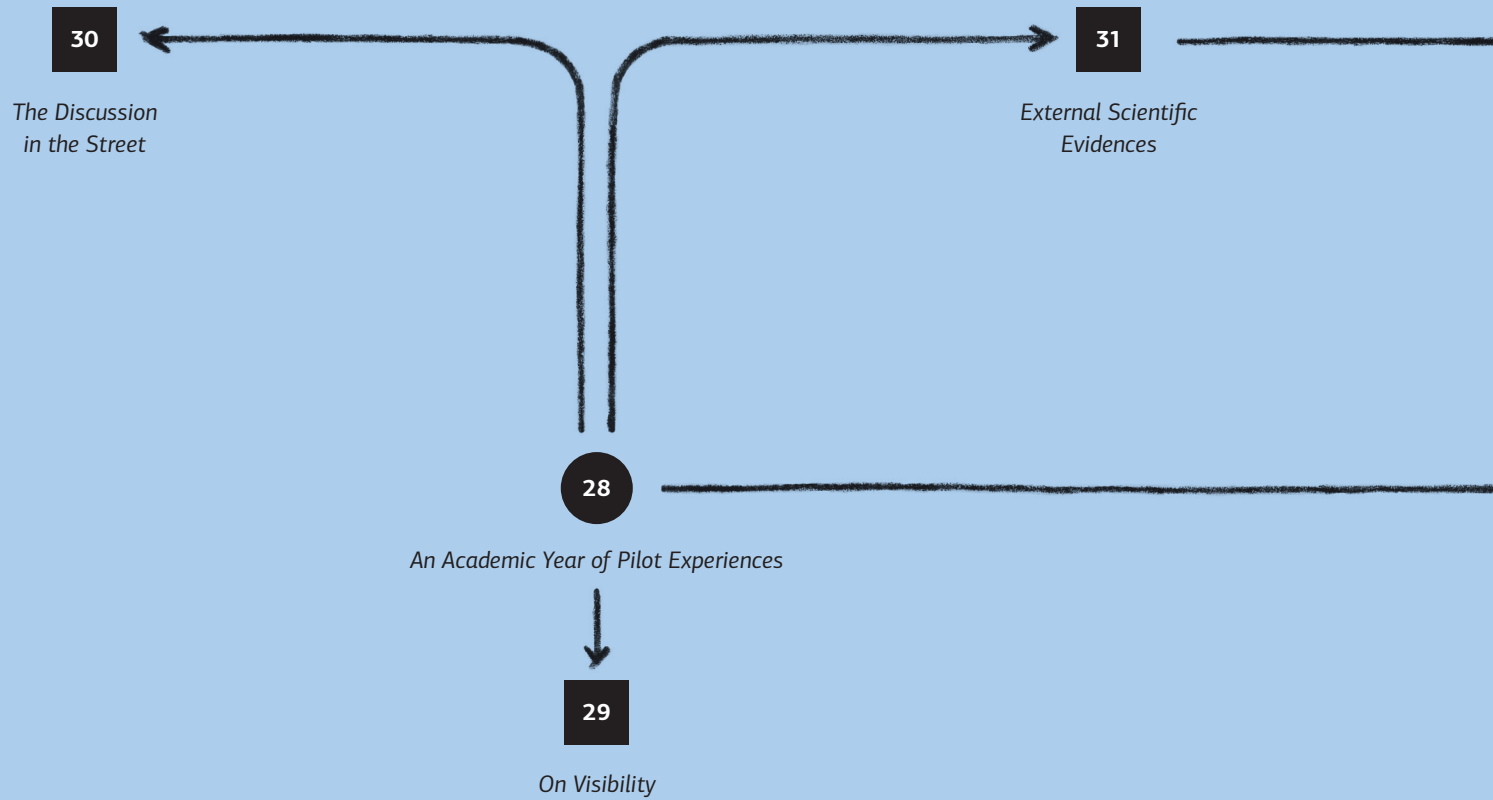
Jesuïtes El Clot  
El Clot School

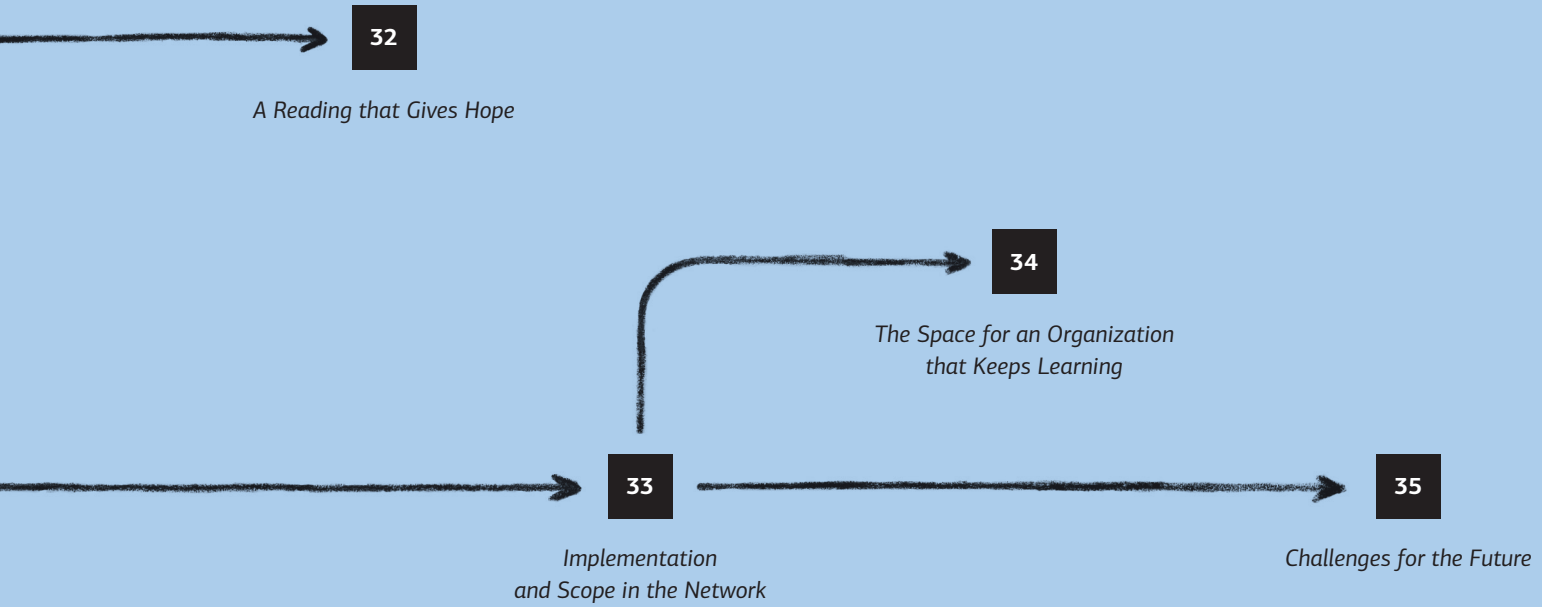




Jesuites El Clot  
El Clot School

#### IV. Maintenance







## 28.

### *An Academic Year of Pilot Experiences*

As we mentioned in the prologue, we are writing this book in the autumn of 2015. As of right now in JE, we have carried out two phases of works and an academic year plus a few months of pilot experiences (MOPI in four centres and NEI in three).

This year, the faces of the students in September were not as impressed as they were last year. The students are already familiar with the wide and colourful classrooms. Since then, only new classrooms and new spaces have been added, and we could say that enthusiasm has been normalized; the fun and colours have been maintained.

We think that this is a good sign. On one hand, the triad of MEJE submodels' functionality allows us to row towards the students' learning; things start flowing, that is, they happen naturally.

On the other hand, remodelling physical space is still part of the pilot experiences and consequently will also have to be evaluated. MCEFE was designed by analysing, discussing, mapping out and,

when the times comes—in June of 2016—it will also have to be evaluated and measured.

As with everything that we do for Horizon 2020, after the diagnosis and the formation of our dream, we have taken a determined leap even though we were aware that we did not have all the variables solved. We are aware that only by taking action and revising our actions can we reach satisfactory results; it is only by doing that we can learn and move forward.

We have not started these building works to forget about the builders themselves over the next twenty-five years. We have started them to find the most optimal arrangement to develop the students' life project and to carry out the JE educational and pedagogical model. We know that we still have a long way to go together with both the architects and builders.

We would like to add that this element of variation has also been included in the project. Nothing lasts forever; we are always moving forward and learning together.

## 29.

### *On Visibility*

When Horizon 2020 has transformed the physical space of the school, it has been shown in its entire spectrum. From the beginning, we have stated that educational change is systemic and disruptive; now, we do not only say it, but we can see it more clearly.

Innovation needs to be down-to-earth, real, questioned. The impact of the comfortable, aesthetic and leisure spaces in the schools has also been very visible. These changes are not complementary: the 21<sup>st</sup> century school needs them to become a learning centre that hosts an educational community that both shares and creates knowledge.

However, we cannot forget that the space on its own does not change anything. Neither does technology. These elements should become invisible and normal to students so they can better help them learn.

While the new features are noticed, we will still be in an early phase of the transformation. It is logical to talk about the new spaces, but it is also significant that in these books there are no references to the specific use, for example, of computers.

The debate isn't simply computers: yes or no? In the same way we do not wonder, heating: yes or no? Nowadays, being connected to the Internet is like being connected to electricity; it is a basic need.

With MENA, we add group work to the learning and teaching process (which requires specific furniture) and certain projects and problem solving (which require computers, smartphones and tablets with internet connections). This is the approach we are aiming at right now.

To sum up: we could say that the less visible the colours, lighting, tables and digital boards are the more effective and integrated they will be into the school.

## 30.

### *The Discussion in the Street*

When the media talk about a silent change, it means that transformation is here to stay. One fact: in September of 2015, two newspapers (*Ara* and *El Periódico*) each devoted a double page to school spaces. Then on Saturday the 19<sup>th</sup> of September, Paloma Arenós started the supplement *AraCriatures* by saying:

“The design of the educational space determines the students’ learning. It is a conclusion reached by different Primary and Secondary centres over the last five years in Catalonia, although this idea draws from different educational movements that started fifty years ago.”

“The Italian pedagogue Loris Malaguzzi (1920-1994) stated that children have three teachers in the school: the grown-ups, their peers and the physical environment. His counterpart and fellow countryman Francesco Tonucci (Italy, 1954) states that the school should provide them with a rich environment, where learning takes place from the very moment they enter the building. He also stated that the spaces should be arranged and decorated with the same criteria and love with which we decorate our own houses.

In his literature, this renowned pedagogy expert in very young learners points at the facts that rather than classrooms; there should be labs ‘because they invite us to take action; while desks and chairs in front of a blackboard call for a passive attitude.’ Among her remarkable precepts, the Catalan Rosa Sensat (1871-1961) supported a welcoming environment in the schools, the same as we see in a house.”

“The Catalan Jesuit with their Horizon 2020 project, the centres in the XELL (Network for Free Education), Bosc de Rubió school in Anoia, Roser Capdevila school in Polinyà or Sant Miquel school in Cornellà are some of the examples of schools that prioritize on a comfortable space, close to nature and with a warm and practical design which takes into account the needs, different rhythms and autonomy of the students.”

Due to the work of many people, the transformation of the school’s physical space and furniture has become a topic of interest for society. This is a great success and a great achievement since, unfortunately, this very important discussion had been forgotten for a very long time.

## 31.

### *External Scientific Evidences*

In book 01 we stated and we felt sorry about the lack of scientific research on the educational field (please see chapter 9). More often than not, universities are far from the hands-on teaching happening in schools and public administration rejects the experts' contributions when designing educational policies.

Bearing this scenario in mind, we were positively surprised by the study that was published in 2012 by Peter Barrett, Yufan Zhang, Joanne Moffat and Khairy Kobbacy from Salford University in the United Kingdom (we have not been able to find any other related studies).

The title is clear and very relevant to our book (*A holistic, multi-level analysis identifying the impact of classroom design on pupils' learning*), and their study tracks the improvement of each student in reading, writing and mathematics throughout the 2011-2012 academic year.

We thought it would be interesting to reproduce its abstract to be able to understand its conclusions later (our italics):

"The aim of this study was to explore if there is any evidence for demonstrable impacts of school building design on the learning rates of pupils in primary schools."

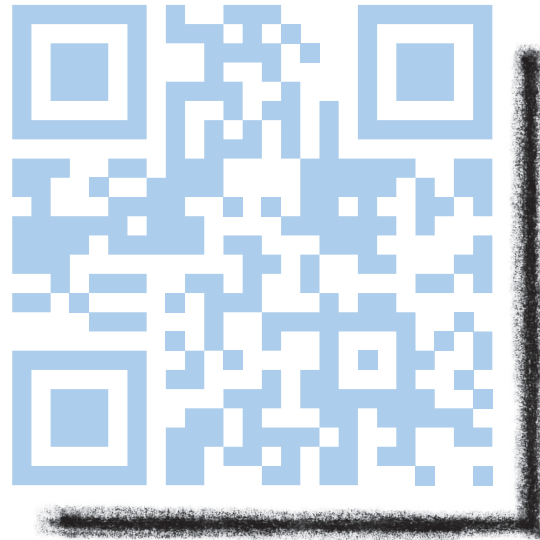
"Hypotheses as to positive impacts on learning were developed for 10 design parameters within a neuroscience framework of three design principles. These were tested using data collected on 751 pupils from 34 varied classrooms in seven different schools in the UK. The multi-level model developed explained 51% of the variability in the learning improvements of the pupils, over the course of a year. However, within this a high level of explanation (73%) was identified at the 'class' level, linked entirely to six built environment design parameters, namely: colour, choice, connection, complexity, flexibility and light."

"The model was used to predict the impact of the six design parameters on pupil's learning progression. Comparing the 'worst' and 'best' classrooms in the sample, these factors alone were found to have an impact that equates to the typical progress

of a pupil over one year. It was also possible to estimate the proportionate impact of these built environment factors on learning progression, in the context of all influences together. *This scaled at a 25% contribution on average.*"

"This clear evidence of the significant impact of the built environment on pupils' learning progression highlights the importance of this aspect for policy makers, designers and users. The wide range of factors involved in this holistic approach still leaves a significant design challenge."

Since we have seen this conclusion, are we still wondering if the classroom and the design have an influence on the students' learning? And are we still waiting to transform our educational spaces? Will we carry on building schools like the ones we had in the last century?



Download the full article by scanning this QR code.

## 32.

### *A Reading that Gives Hope*

The conclusions that have been reached in the study by Salford University point to the fact that we are working in the right direction. According to the data they gathered and analysed, the design of the environment influences up to 25% of the students' learning. We must, therefore, look at the data closely and make meaningful transformations to the 21<sup>st</sup> century school spaces.

The main elements can be summarized in three general principles and six design parameters: A. Naturalness (1. Light), B. Individualization (2. Choice; 3. Flexibility; 4. Connection) and C. Stimulation (5. Complexity; 6. Colour). Situations that were found to be positive are:

- 1.1. The classroom gets natural light from more than one angle or daylight gets in from the south.
- 1.2. The classroom has many quality electric lights.
- 1.3. The surroundings of the windows are clean, without any obstructions.
- 2.1. The classroom has good quality furniture and resources, both designed for education.

- 2.2. Interesting (in terms of colour and shape) and ergonomic tables and chairs.
- 3.1. Different zones that allow for a number of learning activities at the same time.
- 3.2. The teacher can easily change the arrangement of the space.
- 4.1. Wide corridors that make moving around easier.
- 4.2. The corridors have clear orienting tools.
- 5.1. A large building offers a number of opportunities to conduct different learning activities.
- 5.2. Regarding visual presentation and decoration, the classroom must have a quiet visual environment, which must be properly arranged and show a certain level of complexity.
- 6.1. Warm colours are suitable in the classrooms located on upper floors, and bright and fresh colours in the bottom classrooms.
- 6.2. The colours on the walls, mats, furniture and visual aids contribute to the colour scheme of the classroom. However, the colour of the classroom (walls and floor) plays the most important part.

As we have seen in this book, Jesuïtes Educació has considered these elements and they are included in the Model for Change of Our Schools' Physical Spaces. During the participative process of Horizon 2020, the students overwhelmingly told us that the schools were sad and that they did not have colour. Now, a scientific study confirms the influence of the classrooms design in the life of the students and in their education.

We would like to thank this research for all of their work that they have done and continue to do in the United Kingdom. We will certainly follow any further research they publish in this regard.

## 33.

### *Implementation and Scope in the Network*

In this book, we have explained the formulation of MCEFE and the subsequent events; that is, the period from 2009 (when this budget was set) to 2015 (the start of the second year of pilot experiences).

We are often asked, “How does the adventure continue?” By way of answer we observe that in 2020 all of the schools will have the transformation implemented for many of the grades.

Let us explain it in a different way: the new educational model —with the restructuring of the physical space that it brings about— will have reached pre-school, primary, secondary, A-levels and even professional training.

This does not imply that in 2020 the eight centres in the network will be completely remodelled. It simply means that each centre will have started restructuring a specific grade and that the network as a whole will have completed the process, which is quite an achievement.

The case of Jesuïtes Lleida is a special one, since in the 2014-2015 academic year both MOPi

and NEI began simultaneously. They also include pilot experiences for the TQE (*Tercer i Quart d'ESO*; 3<sup>rd</sup> and 4<sup>th</sup> grades in secondary) for the 2016-2017 academic year. Within the network, this will certainly be the centre which will be transformed the fastest.

## 34.

### *The Space for an Organization that Keeps Learning*

In book 06 we have seen that educational transformation pushes us to change the organization and management. We said that the 21<sup>st</sup> century school should be organized and managed differently from the way we had been doing it.

The distinguishing feature of this transformation is the idea of learning. We need an organization that gives a clear and fast answer to the needs of each moment, an inner structure and a team that are able to constantly adapt to new situations. That is to say, we need an organization that learns and moves forward.

To sum up this book, we should refer back to the first intervention under the umbrella of this project for the complete transformation of education; that is, to the offices of the board of directors of JE on Carrer Roger de Llúria, 15.

In 2009, Intermon Oxfam's move helped us access the seventh floor and, instead of divided offices, we decided to have a wide, open room, bright and accessible.

This had nothing to do with the vertical model of the last century. Where are the main directors of the big multinationals of the 20<sup>th</sup> century? On the top floor of skyscrapers, where access is only granted with a key in the elevator or with a secret code for a sole user?

And this horizontal model has taken shape in the network. We only need to have a look at the new offices of the director and the manager in Jesuïtes El Clot. Their office is on the first floor, over the entrance hall, with glass doors. As Saint Ignatius reminds us, we are here to serve and love in all situations.

How can we face future challenges? By working on our own or building a team to add on ideas, competences and effort? Endogamy leads us nowhere, and we aim at reaching the horizon...

We need new spaces for education and new spaces for an educational community that also requires learning, changing, and forward movement.

## 35.

### *Challenges for the Future*

This book is the last one in the series devoted to the three submodels of MEJE. Having analysed the learning and teaching model and the management model, here we have looked at the actual settings for educational change.

Following up on our initial metaphor, we could say that in this transformation of the school the role of the actors, directors and audience is not as clear as it was a few decades ago. However, what has been lost in definition has been won in possibility.

Our goal is to turn school in a meeting point, a community of learners open to the world and the mysteries of life. In order to get closer to our goal, we have not revised a few aspects but instead—as we have seen—reconsidered it as a whole.

By transforming the school we are turning the future into a reality: transparency and permeability with those outside our framework, moving forward to establish correspondence between the educational world and the social, economic and cultural worlds. All in all, we are constituting ourselves

not as a parallel universe but as an innovative agent, a promoter of a fairer, happier and a more complete life.

We have been able to dream and the architectural team has led us to new ideas with their creativity. We can proudly state that today many hopes of many people are being made real—yes, we have made risky decisions, but they are working well.

We continue moving forward with guidance for the 3<sup>rd</sup> and 4<sup>th</sup> grades in secondary education, professional training, and the different phases of the directing plan in each centre. We do not know how the classroom will be in twenty or thirty years' time—or even where our students will learn—but we can state that we have taken the path towards discovery.

Ours is a committed and firm bet on building the 21<sup>st</sup> century school. The challenge we are facing is vitally important. After all these considerations on the physical space, can we carry on building the school using only traditional parameters?



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All the students of the eight schools in our network, for their ideas, their spontaneity and energy; together, we're transforming reality.

All of our families, for their trust, support and participation. Only by working as a team can we move forward.

Ignatius of Loyola and the Society of Jesus which he founded, for the spirit and strength that inspire us to turn our educational task into a life serving others.



Works published in this collection:

**01.**

**Focusing on the Objective**

*40 Considerations for Educational Change*

**02.**

**Paving the Way**

*35 Keys to Bringing About Educational Change*

**03.**

**Defining the Horizon**

*37 Milestones in Dreaming up Educational Change*

**04.**

**Taking Action**

*35 Steps to Living Educational Change*

**05.**

**Defining the Pedagogical Model**

*37 Pillars to Support the Foundations of Educational Change*

**06.**

**Rethinking School Management**

*30 Strategies to Organize Educational Change*

**07.**

**Redesigning Educational Spaces**

*35 Scenarios to Outline Educational Change*

**08.**

**Tasting the Dream**

*32 Experiences to Live Educational Change*

## This Book

This seventh issue in the Transforming Education series is the last of the three basic submodels which shape the Educational Model of Jesuïtes Educació. After going through the learning and teaching processes and then the management of our schools, we are now going to look at the physical space of the school itself.

MCEFE (*Model de Canvi de l'Espai Físic de les Escoles*; the Model for Change to Our School's Physical Space) is a determined step towards a deep transformation in education. These scenarios are to serve our students' life project: light, colours, spaces, furniture, and digital resources to encourage students to feel excited about the new 21<sup>st</sup> century school.

## Our Project

In Jesuïtes Educació schools, we've been working on a project since 2009 meant to renew education on a broad scale, which we call *Horitzó 2020*. We've eagerly been working hands-on, as a team, to create a new way of understanding education in the 21<sup>st</sup> century.

## The Collection

In order to fulfill our objective, we need to take the time to stop and think, to analyze our experiences so that we can act more effectively in the future. That is the aim of this collection, which is the work of different authors under the direction of Xavier Aragay. With the Transforming Education collection, we want to consolidate our successes and share our experiences so that we can continue improving together with all of the individuals who are committed to this essential task.

This is our humble contribution, our way of helping bring about the change that's needed in education. We all need to move forward together, sharing our passion, our inspirations and our experiences.

**For more information, visit our website at <http://h2020.fje.edu>**

You'll find videos, newsletters and all of the volumes in this collection available in Catalan, Spanish and English, as well as a space for participation where you can send us your contributions. We hope to hear from you! Thanks in advance!