The students redesign their school (with teachers): Heart, mind, hand

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Abstract

Through a collaborative design approach, Don Milani Institute of Higher Education attempted to re-design their own school by replacing the spatial rigidity with Readable Subject Classrooms that were assigned to teachers, having a more flexible setting and creating a campus through the connection of three existing school buildings. The action-research methodology has been used to lead this project. All teachers, students, parents and workers were provided a questionnaire to identify the problems. All teachers attended two training meetings. Afterwards, a group of teachers attended four training workshops and, with a group of students, attended three collaborative design workshops and focus groups, gathering desires and needs. The project curators proposed a renovation and reorganisation plan leveraging the stakeholders' suggestions. The first phase was developed between May 2017 and April 2018 to be completed before the construction phase scheduled for summer 2018. The collaborative design would help teachers and students to work better together and increase their identification with the school.

Keywords

PEDAGOGY AND ARCHITECTURE | OLD SCHOOL REORGANISATION | COLLABORATIVE DESIGN | FLEXIBLE LEARNING | ENVIRONMENTS | READABLE SUBJECT CLASSROOMS

Introduction

The need for innovation requires a shared methodological and pedagogical perspective among the teachers, the creation of a common language and a strong educational community that will accompany the students through their education system. In order to create an interconnected and interactive relationship between people, spaces and objects, there is the need for serious consideration about pedagogy (Limone, 2012), the way to act in the classroom and the educational environment.

Those are the two main aspects that form the basis for implementing a radical pedagogical didactic innovation at Don Milani Institute of Higher Education by introducing Readable Subject Classrooms (Kaplan, 1987; Lynch, 1960), assigned to teachers with the aim of developing active student-centered learning areas and to propose innovative ways such as cognitive flexibility (Spiro & Jehng, 1990), EAS (Situated Learning Episodes) (Rivoltella, 2013) or other possible didactic and methodological approaches.

The learning environments have some basic epistemological principles: learning is developed through a conscious and active path, in which the student is at the centre of this process and the teacher is called to play the role of facilitator (Perkins, 1991), because learning is no longer transmissive, but intentional and reflective (Jonassen & Land, 2012; Lippman, 2010). A further aspect that made it necessary to rethink the school organisation, concerns the lack of classrooms and the reduced size of some of them. This required an architectural design with spaces being demolished and reconstructed.

Context

The Don Milani Institute of Higher Education in Montichiari (Brescia-Italy) is attended by about 1,700 students and 200 teachers. The areas of study are: Science; Language; Sport Science, Cinema, Environment, Human Sciences; Technical Administration, Finance and Marketing (day and evening) and Business Information Systems; Professional Commercial Services and Technical Assistance. Don Milani consists of three buildings (another one will be built soon). Two are contiguous and are built in a common garden. One of them is very recent, while the other is an historical building and the first to have been built. The last building, occupied by the professional institutes, is separated from the other two by a road, and is a rather degraded prefabricated structure. Don Milani was built according to the traditional "box-like" logic "containing many smaller boxes lined up in various rows, in a series of superimposed levels" (Bruner, 1961, p. 157), with classrooms not suitable to the needs of new teaching methods.

One of the priorities for which the reorganisation of the school is important to overcoming the physical and psychological separation between the three buildings in order to create a campus and a community, as well as making it more beautiful and innovative. To do this, it is necessary, in addition to an overall reorganisation of spaces and equipment with a specific pedagogical model, to have economic resources which are not always present. For this reason, the headteacher has involved many local institutions in a fundraising campaign: Municipality of Montichiari in?The Province of Brescia, all of its citizens and Credito Cooperativo del Garda Bank which has issued "BCCinclasse" Solidarity Deposit Certificates.

Figure 1. The atrium before and after reorganisation. (Source: Authors).

Research design

A rethinking of the classroom settings and a reflection on all the common areas, halls, corridors, outdoor spaces and environments that could be readapted for alternative ways of "doing lessons", has become necessary to overcome the current rigidly consolidated setup. The task of the school is to help each student in a process where everyone shapes himself in order to become a person (Maritain, 1943). That is to say every student must be recognized by the teachers in his or her originality, unrepeatability and uniqueness (Bertagna, 2006). This is for the integral growth of the student (Bertagna, 2006) and that the basic right to schooling and education is recognized for everyone (Mounier, 1935). An educational community needs to have professional tools that allow translation of their established values into teaching practices. The practices are supported by environments that have an educational intention to develop relational aspects, "we learn together, not alone" (Górkiewicz, 2016, p. 7).

Figure 2. The corridors before and after reorganisation. 2018. (Source: Authors).

To do this, it is necessary to develop a shared path, not only between teachers and students, but also between parents and all the school staff, in which they are all participants and protagonists through the design and improvement of space and all the activities to be carried out (Parnell, 2015).

The principal prepared the teachers for the change through the communication of the new didactic-methodological needs, the creation of "a sense of urgency" (Kotter, 1996, p. 35), the need to have the necessary knowledge, skills and competencies to cope with the change collectively (Armenakis, Harris & Mossholder, 1993) and with a shared project (McKay, Kuntz & Naswall, 2013), through a training course on Didactics for Skills (Sandrone, 2013) and on EAS (Rivoltella, 2016).

However, the organisational and methodological change requires great effort and places strain on the part of teachers, who are often immersed in the tradition of "single cells" (Osborne, 2016, p. 37). It is a very difficult transition because teachers do not always manage to break away from well-established consolidated practices. The transition to modern learning environments represents an adaptive and transformative change that requires "establishing agreement on the purposes of schooling and the proposed changes, along with a truly shared vision of possibilities" (Waters, Marzano & McNulty, 2003, p. 8). The transition is also a break from the past that sometimes clashes with the prevailing values and requires new knowledge and skills for the use of technological tools and new methodologies (Heifetz & Laurie, 1977; Waters, Marzano & McNulty, 2003).

A further complication for change is the sense of threat that teachers can feel because the skills and competencies they use may not be as appropriate (Heifetz, Grashow & Linsky, 2009). For this reason, the "transition" from frontal and transmissive didactics to a new didactics methodology should be shared by all the protagonists (Imms, 2016). In communities, the connection between people for a common purpose is not based on contracts, but on everyone's commitment (Sergiovanni, 1994) and is bounded by interdependencies for the construction of an idea (Blau & Scott, 1962). Creating a community means building a 'centre of value' in which the meaning of "us" is realised (Sergiovanni, 1994).

These changes can lead to improvement in learning (Barret, Zhang, Davies & Barrett, 2015) and also a greater involvement of students in a more empathetic school where there is widespread physical and mental well-being (Washburne, 1957). It is important, however, to work with teachers to develop an awareness of the influence that learning environments have on making better and more reflective use of space (Dudek, 2000).

For this reason, a collaborative planning path was chosen to encourage teachers, students, parents and all the school staff to develop a sense of belonging (Woolner, 2015), through "heart, mind and hand" in a vision that recalls the pedagogy of Pestalozzi (1946). In the collaborative design activity each one has their own role in

"the place where everyone works" (Sandrone, 2008, p. 189) and this allows balance to be found, unity and spirit of family intimacy (heart), putting in the field reflection, imagination, creativity (mind) to be carried out in laboratory activities (hand).

Methodology

This project adopts the action-research methodology guide. The first phase lasted approximately one year, from May 2017 until April 2018. The first phase ended with an event in which the innovation project was presented to all the representatives of the school, the mayor of Montichiari and the mayors of other neighbouring municipalities, local institutions, and journalists and representatives of the Credito Cooperativo del Garda Bank. From May 2018 the actual operational phase started (which is still under way) and involves a space reorganisation, a new pedagogical approach and an architectural restructuring intervention.

The course has developed in three directions: teacher training, collaborative design for teachers and students and involvement of parents and school staff through questionnaires. The training of teachers involved two applications: the EAS with meetings held by Professor Rivoltella that took place throughout the school year and the Didactics for Skills with theoretical and workshop meetings held by Professor Sandrone with the following articulation:

- **First part theoretical**: 2 meetings of 3 hours each dedicated to all teachers during which the normative and pedagogical reasons for which Italian (and European) schools have to review their educational action was discussed and set up paths aimed at promoting the development of skills through the disciplinary knowledge of each course of study;
- **Second part workshop**: 4 meetings of 3 hours each addressed to a group of 25-30 interested teachers, during which they used the teaching methods that can promote the development of skills and optimise a spatial organisation based on the classrooms.

The collaborative design was carried out through 3 workshops of 4 hours each: one with the teachers, one with the students and one with both teachers and students working together.

The workshops with teachers and students were structured as six stages in different settings:

- **Setting: frontal**. Greetings and introduction to the workshop with a short presentation of the activities;
- **Setting: circle time**. Who are you, where do you come from and what is your idea of school? Each teacher/ student was invited to fill in the form expressing their idea of school, then do a group presentation;
- **Setting: in pairs**. What is a classroom made of? 1) diamond ranking: each pair of teachers/students must have nine images, which refer to the classroom space, in order of importance: 2) pin-up: each pair pins up the completed template and argues their own choices;
- **Setting: individual**. How is my classroom? 1) physical model construction: each teacher/student must build a model of his own ideal classroom; 2) presentation: each teacher/student relates his or her project;
- **Setting: Group work**. Is teaching possible outside the classroom? Each group must include teachers/ students of all the locations. 1) Identification of common areas 2) Identification of areas useful for the development of didactic or informal activities; 3) Identification of the functions that these spaces can have;
- **Setting: Debate and circle time**. Considerations on the work: questions, perplexities, suggestions and reflections. Conclusions and greetings.

The workshop with students and teachers working together was centred around the use of corridors or other spaces. It ended up with a focus group which highlighted aspects which required great focus:

- the areas to be added to the campus, and
- the critical issues presented by the separation between the buildings.

The focus group also highlighted operative suggestions that were put forward to be taken into account during the design phase involving the local administration. Parallel to the design process, questionnaires were given: (1) two questionnaires to teachers, one in May 2017 before the Teachers' Board, where they decided to undertake a course of didactic and methodological change and one in November before another Teachers' Board during which the design path was presented; (2) one to students, parents and all the staff of the school. The results and the images of learning environments before and after the reorganisation and renovations were presented in the meeting with all teachers and school representatives (parents, students, school staff) in November 2017 and also at a public event in April 2018.

Final considerations

In the questionnaires, some considerations emerged in relation to the vision that each stakeholder had of the school and their expectations. Basically, depending on the building in which they were located, they saw the school as a prison (professional building), hospital (historic building) or aggregation centre (new building). Most of the students, teachers, parents and school staff would like the school as a centre of aggregation or as their home (Volpicelli, 1964): an empathetic place (Mallgrave, 2015), familiar, beautiful, bright, quiet, open, welcoming and a place that encourages positive well-being.

Regarding the introduction of the Readable Subject Classrooms, teachers were very supportive of this innovation because they were convinced that these classrooms allow great flexibility and the possibility to use different teaching methodologies in order to meet the different ways of learning of each student. Moreover, 'owning' a classroom, although shared with a colleague, allows all material to be readily available and allows greater collaboration with colleagues of the same discipline.

Figure 3. Historical building classrooms before and after reorganisation. 2018.
(Source: Authors).

The opinion of the students varied, however, depending on the building they attended: students in the historical and professional buildings were generally more favourable than those in the new building. About half of the parents did not fully understand the importance of the classrooms, even if they did consider the possibility of having flexible spaces with innovative methodologies to be important.

The majority of teachers and students believe that changing the classroom was positive. It allows a "decompression" pause in order to increase the threshold of attention; open the mind to change because the organisation of space reflects the organisation of the mind (open-closed); facilitates concentration with greater emotional involvement; overcomes the idea of disciplines as closed spaces; overcomes the separation between theory and practice; and finally, there is less mind saturation and less boredom. Students saw the possibility of socialising with students of other classes and to take possession of all the spaces of the school.

Figure 4. Professional building classrooms before and after reorganisation. 2018.
(Source: Authors).

The majority of the responses of the school staff were appreciative because they thought there would be fewer problems with the arrangement of classrooms since the teachers managed the spaces. The parents were less convinced because they thought time was wasted in the transfer from one classroom to another.

In the focus group, teachers and students recognised the leadership skills of the principal who was able to motivate and create the right conditions to accompany teachers, students and school staff towards a difficult and demanding transition. This was achieved with the approval of the majority of parents.

The students expressed their pleasant surprise in discovering that the design work carried out with the teachers allowed them to feel closer to the teachers and to overcome the distance that they often perceived due to the rigidity of the classroom situation. The collaborative planning path allows stakeholders, as Hertzberger (2008) suggests, to appropriate spaces, changing their role as "users" to "inhabitants".

The idea of a school, that has emerged from all the questionnaires and the observations captured in the various meetings, can be summarised as follows: a familiar and welcoming environment where: (1) students, teachers and all the staff feel at ease to carry out their work in serenity and in respect of others; (2) students can find teachers ready to listen and who transmit their passion for discovery and the pleasure of learning with a fruitful collaboration; and (3) where there is a shared goal both between colleagues and between teachers and students; which enable the exchange of experiences, ideas and different visions of the world.

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