



Co-funded by the  
Erasmus+ Programme  
of the European Union

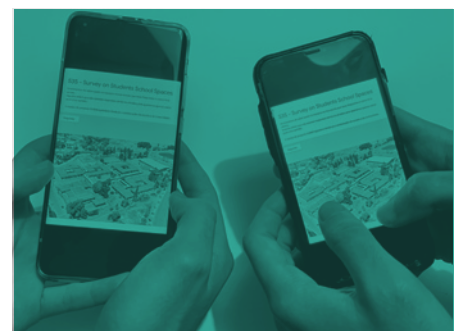
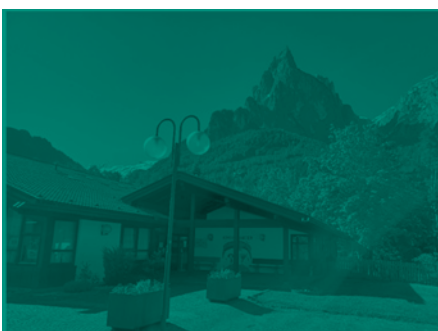
# CoReD



Collaborative  
Redesign  
with schools

## CoReD Principle 2:

Understand the intertwining of physical, organisational and social aspects of school environments





## Space matters for Education

Physical space and material resources, both what you have and how it is organised, make a significant difference to the processes and products of learning and teaching. Research conducted over the last half century in many different countries and multiple educational settings, has shown the impact of the physical learning environment (Higgins et al., 2004; Byers et al., 2018) and encourages the funders and users of educational infrastructure to try to improve their premises and resources (Blackmore et al., 2011; Duthilleul et al., 2021).



But no learning environment, however ‘innovative’, is a magic bullet. Just as was seen with developments in IT at the end of the 20<sup>th</sup> century (Cuban, 2001), equipment only gets teachers and students so far. Across all types of educational resources, both physical and digital, the key to success is achieving a match between what you have and what you want (and are able) to do with it. The fundamental importance of this relationship between design and use is the take-home message from numerous attempts at innovative school design in the past (such as ‘open plan’ schools in the 1960s and 70s) and the present (ILEs in Australia and New Zealand; building for personalised learning in Iceland; schools for the new core curriculum in Finland).

To align the design and use of educational settings, we can look to key ideas developed through participatory user-centred design, which concur with knowledge about educational change: **people need to work together**. Collaboration is central to develop shared understandings of educational values and goals; of the processes and activities needed to achieve these; and of the choice and arrangement of physical resources and spaces that these activities require.

Such collaborations will be different every time, with many local decisions to be made: who should be included in the collaboration (school students? Teachers? Other school staff? School leaders? Municipal decision makers?). When should different groups or their representatives be included? What funding (if any) is available to change the premises? What is the timescale of the change process?

There are, however, some consistencies across participatory processes. Collaboration takes time, and it can be hard to know how to approach discussions about school space with people who see it from the perspective of users, rather than as planners or designers. This is where the CoReD tools come in, presented through our guides, which cover each of four principles for facilitating successful collaborative engagement about school space (Woolner, 2018).

---

**Collaboration  
is central to  
develop shared  
understandings  
of educational  
values and goals**

---

This guide is to help you to...

1. Start where people are (mentally and physically);
- 2. Understand the intertwining of physical, organisational and social aspects of school environments;**
3. Facilitate the exploration of ideas and possibilities;
4. Appreciate the complex, lengthy process that is change.

## Understanding the intertwining of physical, organisational and social aspects of the school environments...

Users of school premises, whether staff, students or the wider community, tend not to see the physical building in isolation but instead connect it to the people they know and the activities they do there. So when you ask about their experiences in school, their descriptions will often include references to the spaces, but mixed up with comments about people and events (see e.g. Niemi et al., 2015). This is actually a realistic appreciation of how teaching and learning involves space, social relationships and other organisational features, such as timetabling and curriculum – with effective education happening when these aspects are matched not mismatched (Frelin and Grannäs, 2021).

In seeking to understand and use school space better, however, it can be helpful to recognise and tease apart the different elements. Using P2 will enable participants to appreciate the parts of school and the way that they relate to each other.

Activities suggested under this Principle, and the CoReD case studies of tools in use, are all rooted in school communities, their spaces and the things they (try to) do there. But all the examples show ways of developing collective understandings of how the physical space is connected to social and organisational factors. This is sometimes to inform a planned change or it can be to check if areas in current use are functioning as intended. These approaches can be applied by other school communities to develop holistic understandings across their own social, spatial and organisational elements, to consider current practices and plan change.

### Which tools work best to address P2.?

	<b>UK tool:</b> Diamond Ranking	<b>DK tool:</b> Stories of Educational Spaces	<b>SW tool:</b> Pedagogical Walk-through	<b>ISL tool:</b> School Development Evaluation Tool	<b>PT tool:</b> Survey on Students' School Spaces S3S	<b>IT tool:</b> Cartographic observation
1. Start where people are (mentally and physically)	✓✓	✓	✓			✓
<b>2. Understand the intertwining of physical, organisational and social aspects of school environments</b>			✓✓	✓	✓✓	✓
3. Facilitate the exploration of ideas and possibilities	✓	✓✓			✓	
4. Appreciate the complex, lengthy process that is change				✓✓	✓	✓✓

✓✓ this tool is particularly suitable for school communities focusing on this Principle in light of where they are with their particular change process of design, development and evaluation.

✓ this tool can also be useful for school communities focusing on this Principle.

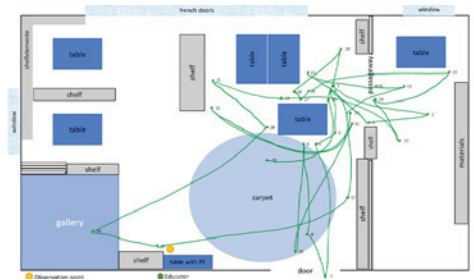
## How can these tools be used?

**The Pedagogical Walk-Through** <https://www.ncl.ac.uk/cored/tools/walk-through/> involves small groups of teachers, students or other participants visiting a number of places across the school, which have been agreed in advance. Prompt sheets, available on the webpage, support discussions at each place about the educational activities that happen, or could happen, there. These site-specific conversations develop shared understanding about how the spaces relate to current and possible practices, as well as to organisational and social aspects of school life. Pedagogical walk-throughs are useful in re-evaluating older school premises in order to generate new ideas for arrangement and use of facilities and resources. They can also be used to evaluate a new building, considering if it is working as intended (sometimes referred to as *post-occupancy evaluation - POE*).



**Survey on Students' School Spaces (S3S)** <https://www.ncl.ac.uk/cored/tools/school-spaces/> also centres on understanding how the school is functioning in social, organisational and physical terms. But it foregrounds the experiences of the *student* users in particular, seeking their views on acoustics and lighting, but also how spaces make them feel and where they like to study, have fun with friends or interact with teachers. The two stage process begins with an online survey, which is edited according to school needs, mainly through uploading photos of particular spaces and places. This survey can be administered to whole classes or even the entire student body. The data generated is then used to inform the second stage, where small groups of students visit the spaces and discuss issues raised in the survey.

Also focused on the use of space is **Cartographic Observation** <https://www.ncl.ac.uk/cored/tools/cartographic-observation/>. The particular contribution of this tool, however, is to enable users to understand in some detail how specific areas are being used, moment by moment, by staff, students and others. It can be very helpful for education practitioners to map the movements they make within a learning space, and where the students are located, enabling a detailed investigation of how the space is being used. These patterns of use can then be considered in terms of how they support, or hinder, the organisational, social and pedagogical intentions of the educator and the school community, contributing to professional discussions of the relationship between the school space and shared values.



The **School Development Evaluation Tool (SDET)** <https://www.ncl.ac.uk/cored/tools/sdet/> is also intended to support professional discussions among school leaders, teachers and other education practitioners about how their school space is used. The SDET was originally designed, and published in Icelandic and in English, with six dimensions, or strands, that need to be considered in successful school development. One of the six strands is focused on the physical learning environment, prompting users to consider how the overall school design and certain named areas enable or hinder the teaching and learning that is practiced – or which the school aspires to put in place. This strand is available on the webpage in all the CoReD partner languages.

**Each tool has a webpage where you can find detailed instructions, and sometimes other resources, in all the languages of CoReD.**

## Case study examples from the CoReD project

### Staff and students use Pedagogical Walk-Through to review their new school building in Iceland

Stapaskoli, a brand new school located in a new neighbourhood of an expanding town in Iceland, was opened in 2020. The premises are designed for 520 students, 6 to 15 years (grades 1 to 10). In spring 2021, with the number of students on roll at just over 280, Pedagogical Walk-throughs were conducted as a collaborative post occupancy evaluation (POE) to see how the innovative, open design of the school was working. Four focus groups did a Pedagogical Walk-through the same day: two groups of teachers (9 in all), a group of six assisting staff and a group of 13 students representing all grade levels

All participants were pleased with the physical and material spaces, noting light, colour and good acoustics. But the walk-throughs also enabled discussions about how the various spaces are being used to support particular social and organisational arrangements, decisions about which informed the design of the school. Central here are the main learning spaces which



are large, shared spaces for use by students across two grades with paired teacher teams. Currently, there is good alignment between design and use: in particular, staff and students noticed that the variety of spaces and furniture enables opportunities for students to choose different settings to support their learning.

Student numbers will expand over the next few years and the final parts of the school site will be developed, including a community sports facility and nursery. In order to continue to understand how the premises relate to the various social and organisational factors in play, and enable design and use to continue their alignment, the school is planning to conduct further Pedagogical Walk-throughs in the future.

### Northern England: What do the students think of our new school building?

Also keen to review a very new building, the school community of Ponteland High School in the UK decided to use Survey on Students' School Spaces (S3S) to gather and understand students' experiences of using the premises. The secondary school, of approximately 1600 students, aged 11-18 years, moved in at the beginning of the school year in September 2020. S3S was used for post occupancy evaluation (POE). Stage 1, the online survey, was conducted across the whole student body in July 2021, then stage 2, the site-specific focus groups took place in December 2021. A novelty in the way this school used S3S



image: ponthigh.org

is that it was a group of older students (aged 17-18 years) who planned and facilitated the focus groups, based on their understanding of the data from the survey. These 'students as researchers' then worked with the school

leader who was organising the review to compile a report drawing together the survey and focus group findings.

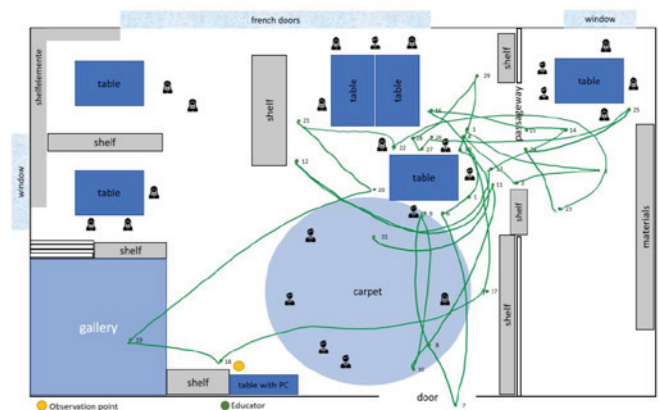
Although this school is built to a very different design from that of Stapaskoli, students were similarly positive about the new, physical structure, noting various aspects of light and comfort. Interesting overlaps of physical, social and organisational factors, within the students' experiences, also emerged from the use of S3S. In particular, social spaces were more valued and well-used by the younger students than the older students and the library was seen as limited because of the open layout and plan, with students not liking the feeling of being visible. Revealing an over-arching entwining of experience with space, students remarked more on the quality of the learning rather than the individual characteristics of teaching rooms.



## Cartographic observation: movement patterns of educator and children in an Italian kindergarten

Within the mountain area of Südtirol (Alto Adige), in the kindergarten district of Brixen, space and room design have long been connected to pedagogical work. In one kindergarten of 46 children (aged 2-7 years), where renovations to a building from 1970 were completed in 2016, the concern was to explore whether the premises were working as intended. In line with the district pedagogical concept, there are themed rooms that children use according to individual needs and interests, with teachers accompanying them.

The teachers used Cartographic observation to investigate how space was used in practice, mapping the movements of educator and children in the various rooms. The mapping of one room revealed that the teacher tended to be centrally located, within the craft activities, but it was evident to the practitioners that the half-height shelving and cupboards ensure good views across the room. Although it appears that the teacher's movements are constrained by the furniture, the activities of the children are much more important in understanding her positioning. Thus the kindergarten practitioners were able to conclude that they were indeed working in the child-centred way that they value, and that the spaces as designed and arranged are able to support this practice.



## Further information – available for free download

A full, very well-illustrated article about Stapaskoli and the Pedagogical Walk-Through: <https://www.mdpi.com/2075-5309/11/11/503/htm> (Sigurðardóttir, A.K.; Hjartarson, T.; Snorrason, A. Pedagogical Walks through Open and Sheltered Spaces: A Post-Occupancy Evaluation of an Innovative Learning Environment. *Buildings* 2021, 11, 503)

This article provides an introduction to S3S, as well as detailing how it was used with two schools in Portugal:

<https://www.mdpi.com/2075-5309/12/4/392> (Coelho, C.; Cordeiro, A.; Alcoforado, L.; Moniz, G.C. Survey on Student School Spaces: An Inclusive Design Tool for a Better School. *Buildings* 2022, 12, 392)

## References – weblinks provided for universally accessible items

Blackmore, J., Bateman, D., Loughlin, J., O'Mara, J., & Aranda, G. (2011). *Research into the connection between built learning spaces and student outcomes*. Melbourne: Education Policy and Research Division, Department of Education and Early Childhood Development. <https://www.education.vic.gov.au/Documents/about/programs/infrastructure/blackmorelearningspaces.pdf>

Byers, T., Mahat, M., Liu, K., Knock, A., & Imms, W. (2018). *A Systematic Review of the Effects of Learning Environments on Student Learning Outcomes*, The University of Melbourne Technical Report 4/2018. Retrieved from: <http://www.ilet.com.au/publications/reports/>

Cuban, L. (2001) *Oversold and underused: computers in the classroom* Cambridge, Mass: Harvard University Press.

Duthilleul Y, Woolner P, & Whelan A. (2021) *Constructing Education: An Opportunity Not to Be Missed*. Paris: Council of Europe Development Bank, Thematic Reviews Series. [https://coebank.org/media/documents/Constructing\\_Education.pdf](https://coebank.org/media/documents/Constructing_Education.pdf)

Frelin, A. and Grannäs, J. (2021) Designing and Building Robust Innovative Learning Environments. *Buildings*, 11, 345 <https://doi.org/10.3390/buildings11080345>

Higgins, S., Hall, E., Wall, K. Woolner, P. & McCaughey, C. (2005). *The Impact of School Environments: A Literature Review*. London: Design Council.

Niemi, R., Kumpulainen, K., Lipponen, L. & Hilppö, J. (2015) Pupils' perspectives on the lived pedagogy of the classroom, *Education 3-13*, 43:6, 683-699

Woolner, P. (2018) Collaborative Re-design: Working with School Communities to Understand and Improve their Learning Environments. In: Ellis, RA; Goodyear, P, ed. *Spaces of teaching and learning: Integrating perspectives on research and practice*. Singapore: Springer.



AARHUS UNIVERSITY



UNIVERSITY OF ICELAND  
SCHOOL OF EDUCATION



UNIVERSIDADE DE  
COIMBRA



UNIVERSITY  
OF GÄVLE



This Guide is part of the set of resources developed by the Collaborative ReDesign with Schools - CoReD - project funded by Erasmus+ programme of the European Union

Start date: 01-10-2019

End date: 30-09-2022

Project Reference: 2019-1-UK01-KA201-061954



Co-funded by the  
Erasmus+ Programme  
of the European Union