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Group of National Experts on Effective Learning Environments

LEEP INSTRUMENT DEVELOPMENT

From the Framework to the Field Trial

Learning Environments Evaluation Programme Series

This paper is included in the "Learning Environments Evaluation Programme Series". The LEEP series present the work developed by the OECD LEEP programme. The reports and papers included in the LEEP series are the following:

LEEP Instrument Development: From the Framework to the Field Trial [EDU/EDPC/GNEELE(2017)4]

LEEP Field Trial Implementation Report [EDU/EDPC/GNEELE(2017)5]

An OECD Framework for a Physical Learning Environment Module – Revised edition [EDU/EDPC/GNEELE(2017)6]

Note: This document exists only in PDF format.

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November 2017

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Further to the implementation of the LEEP Field Trial [October-November 2016] and the developments during the 5th meeting of the Group of National Experts on Effective Learning Environments [October 2017], the OECD Secretariat has revised the 2013 Framework [*Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module*]. The new document is titled "An OECD Framework for a Physical Learning Environments Module – Revised edition" and sets out the proposed revisions to the terms effectiveness, efficiency and sufficiency.

This Paper was prepared by the Learning Environments Evaluation Programme (LEEP) of OECD.

Our team at the OECD LEEP works with school leaders, researchers and policy makers to explore how investments in the learning environment, including the physical learning environment and technology, translate into improved education, health, social and well-being outcomes.
(LEEP, www.oecd.org/edu/facilities)

Acknowledgements

The "LEEP Instrument Development: From the Framework to the Field Trial" presents the collaborative endeavour of the Group of National Experts on Effective Learning Environments, the participating countries, the OECD Secretariat and a number of different experts who contributed during the different phases of the instrument development. The paper was prepared by Alastair Blyth (University of Westminster) and Julie Velissaratou (OECD). Administrative assistance was provided by Diana Tramontano. The report was edited for publication by Zoe Karathanasi-Rauchvarger.

"Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module" set the foundations for all future work in this area and was written by Jill Blackmore (Deakin University), Jyri Manninen (University of Eastern Finland), John Cresswell (Australian Council of Educational Research), Kenn Fisher (University of Melbourne) and Hannah von Ahlefeld (OECD) in 2013-2014. A revised Framework will guide the project after the Field Trial.

The Technical Advisory Group (TAG) was set up to provide advice and guidance on the development of the questionnaires using the concepts developed in the LEEP Framework and it consisted of: Jill Blackmore (Deakin University), Julia Atkin (Consultant), Giuseppina Cannella and Leonardo Torsi (INDIRE, Italy), Hannah von Ahlefeld (OECD) and Alastair Blyth (University of Westminster), with additional input from Harry Daniels and Hau Ming Tse (University of Oxford) and Peter Barrett (University of Salford).

The OECD Secretariat appointed the Australian Council for Educational Research (ACER) to develop the instruments; the ACER team was led by Paul Weldon. The role of the Technical Advisory Group was to review the instruments that were developed by ACER and advise the Secretariat on amendments, under the direction of Yuri Belfali, Hannah von Ahlefeld, Alastair Blyth and Julie Velissaratou.

A number of OECD colleagues reviewed the instrument before it went on Field Trial: Karolina Deligiannidi, Tue Halgreen, Audrey Poupon and Rowena Phair. Craig Clliff (Ministry of Education of New Zealand) also provided valuable comments.

The development and implementation of the project was steered by the Bureau of the Group of National Experts on Effective Learning Environments, which was chaired by Tony Sheppard (Ireland).

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Chapter I
LEEP: AN OVERVIEW

I.1 Introduction

This Paper presents the work carried out by the OECD in the area of learning environments between 2013 and 2016. The work was steered by the Group of National Experts on Effective Learning Environments (GNEELE), which was founded in 2013 in order to oversee work on the Learning Environments Evaluation Programme (LEEP) of OECD.

The Learning Environments Evaluation Programme (LEEP) focuses on evaluating how the physical learning environment affects learning and explores the links between the learning environment and student outcomes. It aims at providing an evidence base to help schools improve the learning environment by collecting evidence at school level to better understand the practices of teaching and learning and their impact on students' learning and well-being. Recent studies about innovative learning environments indicate there are positive associations between school improvement, spatial redesign and student learning (OECD, 2013b). LEEP developed a survey based tool that consists of three self-assessment survey questionnaires for students, teachers and school principals.

The Paper focuses on the development of the LEEP instruments, beginning with the adoption of the LEEP Framework in 2013-2014 and ending with the finalised LEEP instruments, which went on Field Trial in October-November 2016. There are separate OECD Reports that present the operations, the deliverables and the findings of the LEEP Field Trial, which are part of the LEEP Series. Further to the completion of the LEEP Field Trial, the LEEP Framework was also revised. This Paper does not present the findings of the Field Trial, nor the revised LEEP Framework.

This chapter introduces the LEEP work, which was developed in the context of previous OECD work on the physical learning environment, as well as the mission and objectives of LEEP. The conceptual foundation of the Module was developed in the LEEP Framework, which draws on the latest research on school improvement and is summarised in this chapter.

I.2 Background to the LEEP work

The Learning Environments Evaluation Programme (LEEP) is an OECD programme aiming to evaluate how the physical learning environment affects the learning process and what factors are related to the learning and well-being of students. LEEP is focused on the links between the learning environment and student outcomes and aims at improving teaching and learning in schools by collecting evidence at school level to better understand the learning environment, the practices of teaching and learning, and their impact on students' learning and well-being. Within the framework for LEEP, a survey-based tool was developed that consists of three self-assessment survey questionnaires for students, teachers and school principals.

The focus on the physical learning environment has emerged out of a concern as to whether the pedagogies, curriculum, assessment and organisational forms necessary to develop the '21st century capacities' in students require different built environments and usage. Other issues that have brought the built environment to the foreground include environmental sustainability, the integration of ICT to enhance learning, industry and university partnerships, educational inequality, and neighbourhood regeneration in high poverty regions.

The LEEP work grew out of the work of the OECD Centre for Effective Learning Environments (CELE) and its predecessor -the OECD Programme on Educational Building (PEB)- and aims to get a deeper understanding of the links between the physical learning environment and student outcomes. Work carried out by CELE and PEB had explored a range of topic areas concerning the physical learning environment, including innovation in design, procurement, school modernisation and the role of school buildings in local communities. CELE's project on Evaluating Quality in Educational Spaces (EQES) developed a range of self-assessment tools, including questionnaires and focus group methodologies. EQES probed how the physical learning environment supported users -teachers and students.

LEEP was on one hand developed in the context of previous OECD work on the physical learning environment, and on the other hand it drew on other OECD work: the OECD work on student assessment through the Programme on International Student Assessment (PISA); the OECD Teaching and Learning International Survey (TALIS); and the OECD Innovative Learning Environments Project (ILE). The ILE project has analysed how young people learn and has explored the innovative ways of organising learning, and how this connects to networks and communities of practice and strategies to implement learning change at the system level.

LEEP was to be developed as a series of Modules that focus on specific areas of the learning environment. Each module would be a resource –in this case a set of questionnaires for student, teachers and school principals– which when applied, would inform schools about how the physical learning environment can support improved learning and other outcomes. Initially, it was envisaged that the LEEP Module on the physical learning environment would be used as part of the PISA-Based Test for Schools[1] (PBTS). However, the Module has been developed as a stand-alone tool, although it could be used alongside PBTS or other student knowledge assessment tests, if desired.

[1] The PISA-Based Test for Schools (known in the United States as the OECD Test for Schools) is a student assessment tool geared for use by schools and networks of schools to support research, benchmarking and school improvement efforts. The assessment tool provides descriptive information and analyses on the skills and creative application of the 15-year-old students' knowledge in reading, mathematics, and science, comparable to existing PISA scales.

I.3 Aims / objectives of LEEP

The general aim of the Learning Environments Evaluation Programme (LEEP) is to generate evidence and provide information and advice to individual schools, local authorities, policy makers and the wider community **to support school improvement efforts**. Tools developed in the project will help to analyse how investments in and use of the physical learning environment translate into improved learning, social, emotional, health, well-being and behavioural outcomes, leading to more efficient use of education resources.

Figure I.1: LEEP aims to produce instruments & analyses to inform stakeholders

The LEEP module could be applied to **individual schools** in order to identify strengths and opportunities for improvement that individual schools could take; the LEEP module could be applied at **local/regional/national level** as well, in order to enable comparison across schools within a system or within a school network. It could also provide information on how spaces in schools are used in practice, and so inform the debate about how the physical learning environment should support teaching and learning.

The LEEP module gives schools the opportunity to track the use of the physical learning environment once and/or periodically, over a period of years. It would be instructive to learn how students' perceptions of their physical learning environment change before and after they occupy a new building. While the same students are not assessed from one year to the next, the opportunity exists for similar students to assess the same physical environment from year to year. Any changes in the environment could be linked to student outcomes, so the emphasis is put on ongoing redesign and maintenance of quality.

I.4 The LEEP Framework

The conceptual foundation for the study was developed in the LEEP Framework **"Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module"** (OECD, 2013). The Framework was written in 2013-2014 to guide the development of the survey instruments and is summarised below. A revised Framework will guide the project after the 2016 Field Trial.

Revision of the Framework

Further to the implementation of the LEEP Field Trial [October-November 2016] and the developments during the 5th meeting of the Group of National Experts on Effective Learning Environments [October 2017], the OECD Secretariat has revised the 2013 Framework. All terms and concepts described below, refer to the ones that were used in the 2013 Framework, and are therefore maintained in their initial language/form. The new document is entitled "An OECD Framework for a Physical Learning Environments Module – Revised edition" (OECD, 2017) and sets out the proposed revisions to the terms "effectiveness", "efficiency" and "sufficiency".

Work on the LEEP Framework began in 2013. In the context of the Learning Environments Evaluation Programme (LEEP), a **"Module"** was defined as a resource, which when applied, would inform schools about how the physical learning environment for example can support improved learning and other outcomes. So, each Module is modular in the sense that it is composed of questionnaire items and a contextual questionnaire for students, teachers and school principals that addresses an aspect of the learning environment. For the purpose of the Framework, the **physical learning environment** was defined as "the physical spaces (including formal and informal spaces) in which learners, educators, content, equipment and technologies interact".

The 2013 LEEP Framework set the foundation for the work in this area and was developed by a team of four OECD experts: Jill Blackmore (Deakin University), Jyri Manninen (University of Eastern Finland), John Cresswell (Australian Council of Educational Research), Kenn Fisher (University of Melbourne) and Hannah von Ahlefeld (OECD). It was developed in order to:

- describe the conceptual underpinnings of the Module, drawing on the latest research evidence on the physical learning environment;
- explore how the use of the Module can improve the evidence base around effective, efficient and sufficient physical learning environments;
- assist the next development phase of the Module (develop and validate the questionnaire instruments);
- provide a template for the development and implementation of future LEEP Modules, for the purpose of school improvement.

I.4.1 The importance of the physical learning environment: Summary of the OECD Framework for a Physical Learning Environments Module

The 2013 LEEP framework draws on the latest research about school improvement, which identifies context, leadership, professional learning, pedagogy and supportive policies as critical to improving student learning. Recent studies of innovative learning environments indicate that there are positive associations between school improvement, spatial redesign and student learning (OECD, 2013b). Evidence is emerging about how a school's physical learning environment impacts on community and benefits the long-term health and well-being of students and communities (McLaughlin and Talbert, 2006).

The focus on the physical learning environment has emerged out of a concern as to whether the pedagogies, curriculum, assessment and organisational forms necessary to develop the '21st century capacities' in students require different built environments and usage. The interaction between the physical learning environment and learning is complex. Teachers and principals have to manage not only new built environments, but also multiple curricula and assessment reforms that claim to focus on student learning; these can have contradictory demands on time and space. Poorly designed and maintained schools, often found in areas of lowest educational achievement, can also have a detrimental impact on teacher and student morale and engagement, and impact negatively on aggregate student outcomes (Filardo, 2008). Collectively, these factors impact on teachers' work, attitudes and behaviours, and consequently affect student learning.

The physical environment is one factor among many impacting on student learning outcomes (OECD, 2010a). School effectiveness and improvement studies often neglect context, rely on limited measures of outcomes and ignore the built learning environment (Bickford and Wright, 2006; Moos et al., 2008; Thrupp and Lupton, 2006). Clearly, further research is needed to better understand how the physical learning environment can support different outcomes for students, educators and communities – and how results from this research can be used for the purpose of school improvement.

However, the evidence does suggest that well-designed buildings and facilities with integrated ICT can be the catalyst for teachers developing innovative pedagogies that impact on student learning. Improved student learning is most likely to be achieved if there are certain preconditions. While innovative pedagogies expected to improve student learning do not rely on new built spaces, well-designed learning spaces provide multiple preconditions for innovative pedagogies through flexibility (Heppell et al., 2004), adaptability and connectivity.

Evidence also suggests that flexible spaces can encourage more effective teaching (Anderson-Butcher et al., 2010, Oblinger, 2006) and team teaching, better planning, use of more diverse pedagogies, and personalised learning; they can also encourage students to be self-reliant learners capable of working in groups (Dekker, Elshout-Mohr and Wood, 2006; Fielding, 2006).

Areas of concern for LEEP

There are a number of areas of concern for LEEP. The first concern is what is meant by the learning environment and the physical learning environment; second, what is the connection with the use of information and communication technology in education; third, the importance of school improvement, educational effectiveness, outcomes and wider benefits; and lastly, the interrelationship between the spatial organisation of learning and pedagogy.

A. The learning environment and the physical learning environment

There is a distinction to be made between the physical learning environment and the learning environment overall. The overall learning environment comprises learners, teachers, context and resources, which include the facilities. However, the physical learning environment is not about just the physicality of the space. The interactions between physical resources (i.e. learning spaces, material and technology), learners, educators, content, learning leadership, society and policy all go to create the physical learning environment (OECD, 2008; Tanner and Lackney, 2006). The physical learning environment can produce conditions and mediate relationships that can improve student learning along a range of indicators (learning, physical and mental well-being) and the quality of relationships. However, these are made more complex by the use of ICT, which mixes face-to-face and technology-based teaching (Bersin, 2004; Goodyear, 2008).

B. The use of information and communication technology in education
In many of today's classrooms, it is not possible to separate learning spaces and ICT. Use of ICT extends and adds new dimensions to learning beyond the school grounds to encompass and connect with homes and communities locally, nationally and internationally. The quality and access to up-to-date hardware and software as well as the internet are critical issues for schools and families in high poverty or rural areas (Green and Letts, 2010; OECD, 2008), although the "digital divide" is decreasing with the connectivity afforded by less expensive, often personal, mobile technologies and a reduced need for dedicated computer rooms (Facer et al., 2001; Pearson and Somekh, 2006).

C. School improvement
School improvement and educational effectiveness are the results of the effective distribution and use of physical resources. They can be measured against using different outcomes and by evaluating the wider benefits to the student, education system and society over time. The principal student assessment outcome measure is the PISA standardised test score, or an equivalent national or local assessment measure, while other outcomes are defined as learning, health and well-being, social, emotional and behavioural.

D. The interrelationship between the spatial organisation of learning and pedagogy
The physical learning environment is one of the pillars of the organisation of learning and pedagogy that is ever-present and can contribute to our learning experience. There are three key dimensions defined in the 2013 LEEP Framework: **spatiality** – the qualities of space; **connectivity** – connections between people and things in both the physical and virtual realms; and **temporality** – how space and connectivity are used over time. These mediate pedagogical and other relationships that can improve student learning.

Qualities of space [defined as "Spatiality" in the 2013 LEEP Framework]
Space (and place as natural and built environments) *"shape"* social relations and practices in schools and communities (Leemans and von Ahlefeld, 2013; Lefebvre, 1991; McGregor, 2003, 2004; Massey, 1994, 2005). Social practices, formal instruction and informal social interactions change the nature, use and experience of space.

Connections between people and things [defined as "Connectivity" in the 2013 LEEP Framework]
Learning spaces and technology together mediate the relationship and social practices of teaching and learning, creating both physical and virtual connectivity. Effective use of ICT in education requires the teachers to change their practices to be more student-centred, to give over control, so that students are capable of self-regulated learning in the classroom and on line (Crook and Light, 1999; Luckin, 2010; Marjanovic, 1999; Moulds and Harper, 2008).

Qualities of time [defined as "Temporality" in the 2013 LEEP Framework]
The use of space and making connections happens through time. Changes in the nature and use of different physical spaces are related pedagogically and organisationally to changes in time organisation. For example, personalised learning, individual pathway planning, team teaching, inquiry approaches, student teamwork, problem solving, rich tasks and community-based service learning have different time demands (Anderson-Butcher et al., 2010). Large multipurpose, open and flexible spaces often require longer instructional time "blocks" than teacher-centred transmission pedagogies (Arnold, 2002). Large spaces require more planning and synchronicity of activities due to sound (Bruckner, 1997).

The dimensions of space, connectivity and time have an impact on the design of the physical learning environment:

- Specific aspects of design may impact on teacher practice and student learning outcomes. Environmental factors and specific environmental conditions, such as noise, temperature, air quality, ventilation and lighting impact on student learning (Durán-Narucki, 2008; Higgins et al., 2005; Keep, 2002; Lackney and Jacobs, 2004; Earthman, 2004, 2009; McNamara and Waugh, 1993; Sundstrom, 1987; Weinstein, 1979).
- Learning spaces need to be flexible, pedagogically and physically, in ways that reflect the nuances of different knowledge areas and specialisations (e.g. Butin, 2000).

Research also shows that different spatial configurations can facilitate different modes of teaching and learning such as group work, team teaching, as well as independent learning and group instruction. While group work for students or teachers is not contingent on by the spatial configuration, this activity can be encouraged and facilitated by it.

Flexibility of space – adjusting space and connectivity over time

Blackmore et al. (2011) notes that teachers can change their pedagogy towards group work at any time, but flexibility of space and adaptability of furnishings and technology can enable or constrain such activities. Woodman (2011) found that teachers see flexibility as about how to make the space work for them better and for the students pedagogically i.e. to engage students, meet the diversity of student needs enabling them to use a multiple teaching repertoires, resources and a range of activities. It is about space and how it can be reconfigured for different purposes.

Collaboration in space and time

Blackmore et al. (2011) also found that new built environments provided a catalyst and opportunities for teachers to work more collaboratively, in teams and across disciplines and in professional networks across schools and systems, nationally and internationally (McGregor, 2003; McGregor, 1990; Morton, 2005; Nespor, 2004; OECD, 2003). Collaboration and team teaching together with peer review, from the professional learning literature, is more likely to lead to improved student outcomes (e.g. Darling-Hammond, 2008, 2002, 2001; Elmore, 2007; Gijlers et al., 2009).

Connecting space with pedagogy

While the design itself impacts on the effective use of space, to be successful more is needed than just the design. Teachers have to be able to use the spaces. Blackmore et al.(2011) concluded that while new built environments provide an opportunity and can provide a catalyst for innovative pedagogies, changing teachers mind-sets and practices with regard to pedagogy is the precondition for optimal use of redesigned built environments.

Research in the school effectiveness and improvement literature (e.g. Hattie, 2011; Lingard et al., 2006; Potter, Reynolds and Chapman, 2001) and school change theory (Thomson, Jones and Hall, 2009) suggests that it would have been more likely for teachers to use new types of spaces differently, if they had been encouraged prior to occupancy to plan, to take risks and experiment with the use of flexible spaces, and to develop new pedagogical strategies (Schneider, 2003).

Exploring outcomes

There are several challenges in defining potential outcomes. Learning outcomes can be measured either by grades or standardised tests like PISA. Standardised assessments differ and offer different advantages. For example, while PISA provides the opportunity for international comparison, it is limited by the age range; and countries could use their own standard assessments, but these wouldn't offer international comparison. Outcomes may also include other skills and competencies, like social skills and learning skills. These should be analysed at individual (student), school (teacher/principal), community or society levels (social cohesion, active citizenship, etc.).

A challenge is to define educational outcomes more widely than as learning results only. Wider benefit studies (e.g. Darling-Hammond, 2002; Feinstein and Budge, 2007; Feinstein et al., 2008; Manninen, 2010; Schuller et al., 2002) show that there is a connection between education and several benefits, such as physical and mental well-being, civic and social engagement, social networks, learning skills and learning motivation.

The multi-dimensional and complex interdependence of physical learning environment (input), learning and other outcomes and wider benefits (output), and the potential processes in between are presented in the figure below. The elements of the physical learning environment, the processes and the outcomes have been divided into four levels: classroom, school, community and society.

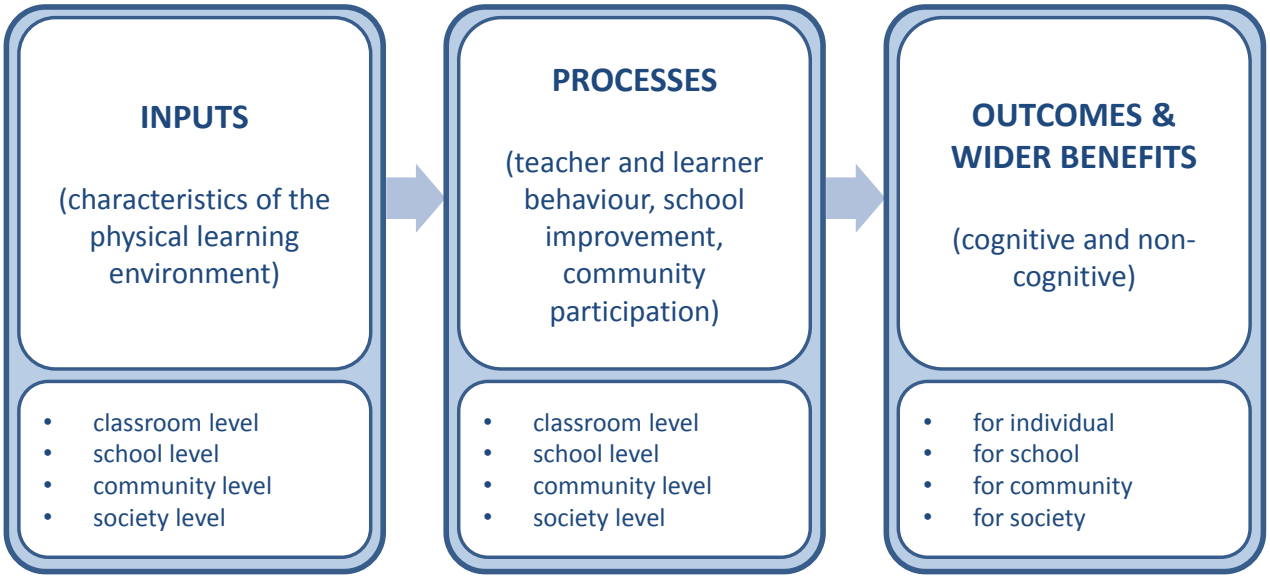


Figure adapted from Figure 4.1, (OECD, 2014), Effectiveness, efficiency and sufficiency: An OECD Framework for a Physical Learning Environments Module

Chapter II
DEVELOPING THE INSTRUMENTS

II.1 Overview

The LEEP instrument development took place between February 2014 and 2017 in three distinct phases:

- Phase 1 – Content development
- Phase 2 – Pilot testing
- Phase 3 – Field Trial and final questionnaires

The first draft of the questionnaires was presented to the OECD Group of National Experts on Effective Learning Environments (GNEELE) in November 2014 and the second draft in November 2015. Following advice from the GNEELE to reduce the complexity and scope of the questionnaires, the final draft was completed in July 2016 and prepared for the Field Trial.

Although it was initially envisaged that the LEEP Module would be run alongside the PISA-Based Test for Schools, which would provide the basis for the student performance measure, following advice from the GNEELE it was decided to create a stand-alone module that could be used alongside the PISA test, but also alongside national standardised tests, if a country so wished. This was because PISA assesses performance of 15-year-olds, whereas school buildings are used by older and younger students as well. Therefore, in order to get a picture of how the overall building performs, it would be important to survey across the school.

The survey instruments have been developed in an on-line format currently using a proprietary survey tool to reduce the cost of creating a stand-alone platform for it. It is envisaged that while the survey is made available to schools, it is co-ordinated by a National Co-ordinator appointed by the country.

II.2 The development phases and milestones

The LEEP instruments were developed in three distinct phases [see figure II.1]:

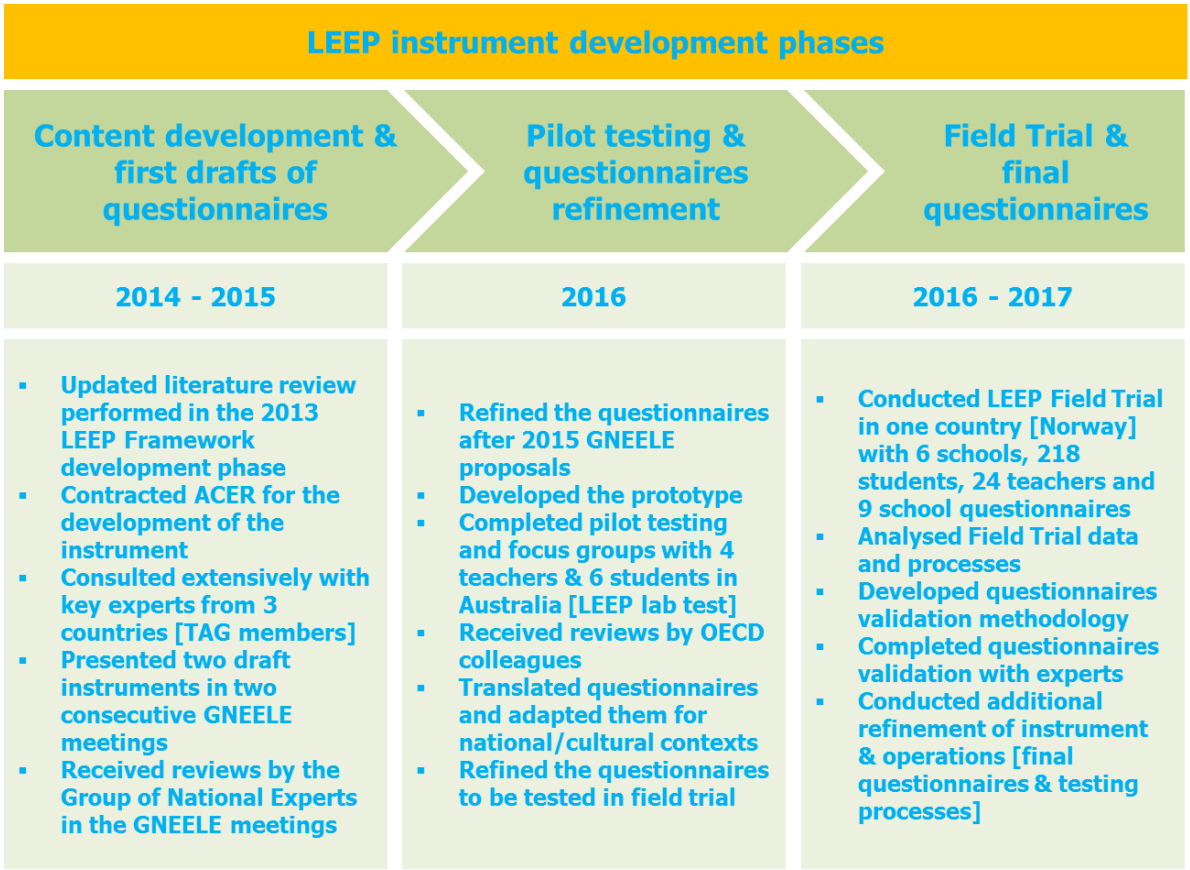


Figure II.1: LEEP instrument development phases

Phase 1 - Content development

The first phase began in February 2014, after the finalisation of the "Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module". This phase lasted until November 2015. During this phase the OECD Secretariat created the Technical Advisory Group [TAG] and selected the contractor [ACER] for the development of the instrument. The main tasks accomplished in this phase were the revision of the preliminary literature review and the Framework, and the drafting of the questionnaires. Two drafts of the LEEP instruments were presented to the OECD Group of National Experts on Effective Learning Environments [GNEELE] meetings on November 2014 and October 2015 and revisions were made according to the comments received during the GNEELE meetings.

Phase 2 – Pilot testing

During the first half of 2016, ACER and the OECD -with advice from the Technical Advisory Group [TAG]- finalised the instruments and created the prototype that would go to the Field Trial. In August 2016, ACER ran the LEEP lab test in one school in Melbourne, Australia. The questionnaires were refined after the lab test and the review carried out by OECD staff and a GNEELE participating country. The finalised questionnaires, which were in English, were translated [and culturally adapted] to Greek and Spanish in anticipation that Greece and Mexico would also take part in the Field Trial.

Phase 3 - Field Trial and final questionnaires

The Field Trial took place in October-November 2016, immediately before the 4th meeting of the GNEELE in Auckland, New Zealand. The analysis of the Field Trial, the validation of the LEEP instrument and the refinement of the questionnaires took place in 2017.

The following figure presents the main milestones of the LEEP instrument development:

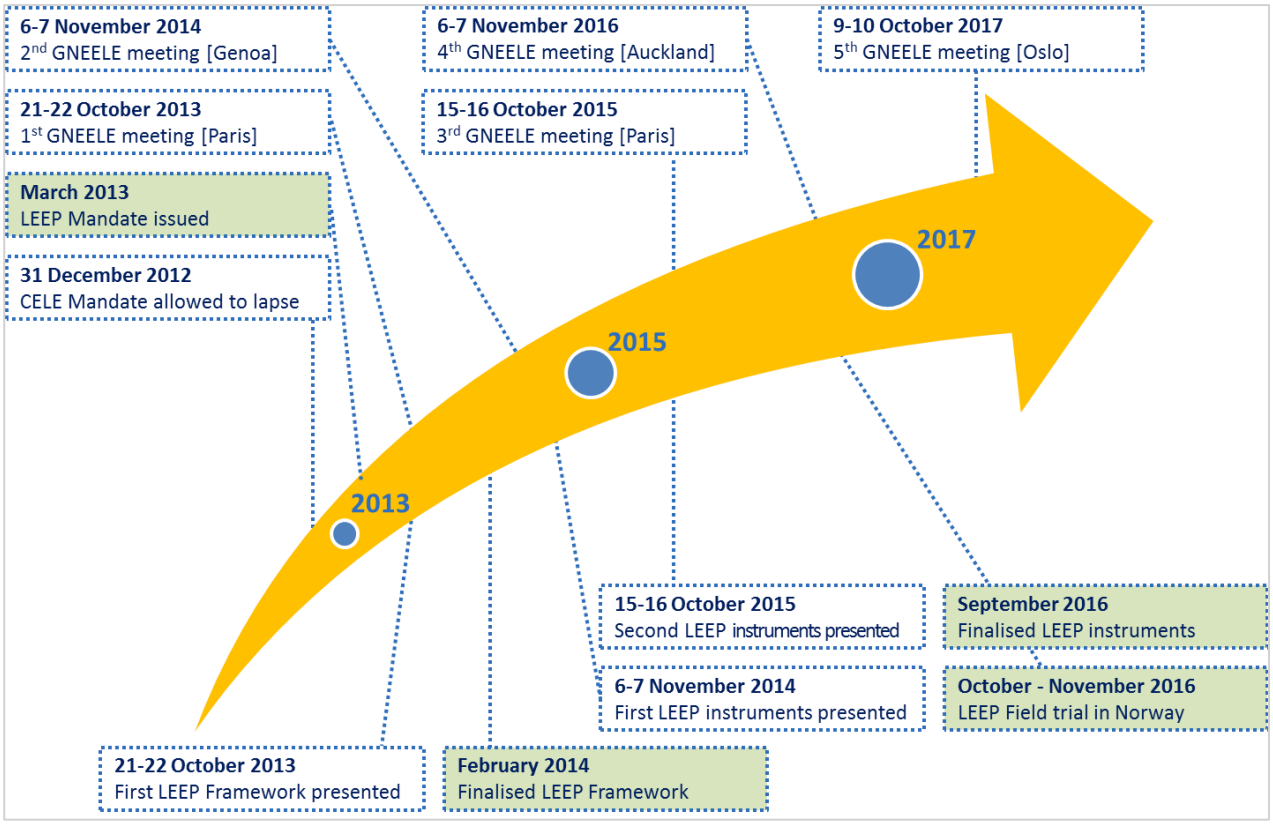


Figure II.2: LEEP instrument development milestones

The current paper presents Phases 1-2 of the LEEP instrument development. Phase 3, which includes the Field Trial and the revision of the questionnaires, is presented in an OECD Reports, the *LEEP Field Trial Implementation Report* [EDU/EDPC/GNEELE(2017)5]. These documents are included in the "Learning Environments Evaluation Programme Series".

II.3 The roles and responsibilities of the different parties involved in the development

The OECD Group of National Experts on Effective Learning Environments (GNEELE) asked the Secretariat to set up a Technical Advisory Group (TAG) to provide advice and guidance on the development of the questionnaires, using the concepts developed in the 2013 LEEP Framework on the physical learning environment.

The role of the TAG was to review the instruments and advise the Secretariat on amendments. The TAG initially comprised of: Jill Blackmore (Deakin University); Julia Atkin (Consultant); Giuseppina Cannella and Leonardo Torsi (INDIRE, Italy); Hannah von Ahlefeld (OECD) and Alastair Blyth (University of Westminster). Additional input was given by Harry Daniels and Hau Ming Tse (University of Oxford) and Peter Barrett (University of Salford).

Roles & responsibilities of different stakeholders throughout the LEEP instrument development	OECD	GNEELE	TAG	ACER
Coordination of TAG & ACER	●			
Participation in TAG	●		●	
Present proposed questionnaires to GNEELE	●		○	●
Draft suitable questions for the identified research questions	○		○	●
Review existing studies to assess their suitability with LEEP goals	○		○	●
Consider implications of the draft design and advice GNEELE	○		●	
Review draft questionnaires	○	●	○	
Advise on the focus areas of the questionnaires	○	●		
Decide on the operations of the field trial	○	●		
Implement the LEEP lab test				●
Implement the field trial	●			
Develop the survey analysis plan and the FT report	●			

● Basic activity ○ Support activity

Figure II.3: task allocation to OECD, GNEELE, TAG and ACER during the instrument development

The Secretariat appointed the Australian Council for Educational Research (ACER) to develop the instruments. The main task of the Contractor was to develop two sets of instruments for the Module. The contractor was not required to field-trial (pre-test) items with students and schools, although lab tests would be conducted after the tools had been revised. In developing the instruments, the contractor was also asked to refer to the focus areas, themes and outcomes addressed to teachers, students and school principals outlined in Tables 5.1 to 5.3 in the 2013

LEEP Framework, in addition to the outcomes defined in the Framework relating to the built environment and organisation of learning and pedagogy.

The main tasks and activities carried out during the development process include the drafting and revising of the questionnaires. The draft questionnaires were presented to the GNEELE during the 2014 and 2015 annual meetings. Decisions about the LEEP instruments –whether to use the questionnaires as a stand-alone tool, the target age of the students and the focus areas of the questionnaires– were taken by the GNEELE. The contractor, ACER, along with OECD Secretariat finalised the questionnaires, after the LEEP lab test. The OECD Secretariat co-ordinated the Field Trial operation, with the assistance of the National Coordinator from the participating country. The Field Trial is addressed in two different Reports from the LEEP Series.

Figure II.3 presents the roles and responsibilities of the OECD Secretariat, the Technical Advisory Group, ACER and the Group of National Experts on Effective Learning Environments (GNEELE) in the development of the LEEP instruments.

II.4 Development of the LEEP instruments

Two drafts of the instruments were developed before a finalised version was tested at the LEEP Field Trial. The drafts were developed based on the 2013 LEEP Framework for a physical learning environments module. A revised Framework will guide the project after the Field Trial.

Revision of the Framework

Further to the implementation of the LEEP Field Trial [October-November 2016] and the developments during the 5th meeting of the Group of National Experts on Effective Learning Environments [October 2017], the OECD Secretariat has revised the 2013 Framework [*Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module*]. All terms and concepts described below refer to the ones that were presented in the 2013 Framework and are therefore maintained in their initial language/form. The new document is entitled "An OECD Framework for a Physical Learning Environments Module – Revised edition" (OECD, 2017) and sets out the proposed revisions to the terms "effectiveness", "efficiency" and "sufficiency".

The main research questions, as indicated in the 2013 LEEP Framework, were the following:

1. What is an "effective" and "efficient" physical learning environment?
2. Under what conditions can the physical learning environment be "effective" and "efficient"? What critical factors impinge on the provision of effective and efficient learning environments?
3. Who are the stakeholders of effective and efficient learning environment?
4. What are the wider benefits and impact of the physical learning environment over time?

While the LEEP module presented an opportunity to use a range of qualitative research methods such as interviews, focus groups, observation, methodologies, as well as learning assessment instruments, these methods have serious resource implications in terms of implementation cost, respondent burden, as well as cost of comparative analysis. Therefore, the OECD decided to keep the implementation simple and use **self-evaluation questionnaires**.

Although school facilities can be used by more than just the teachers and students, and certainly the school impact is community-wide, the focus initially is on how supportive the school is on learning. It was therefore decided to initially restrict the **respondent groups to students, teachers and school principals**. It may be possible in future iterations to create additional instruments for others who interact with the school building, such as community groups.

The self-evaluation questionnaires for students, teachers and school principals consist mostly of multiple choice questions using Likert-type scales[2], open-ended questions, and contextual questions.

Type of questions	Purpose
multiple choice questions using Likert-type scales	enable in-school comparisons
open-ended questions	provide anecdotal evidence from teachers, students and school principals
contextual questions	provide details of the physical environment in which the students and teachers interact [in the school questionnaire]

[2] A **Likert scale** is a psychometric scale commonly involved in research that employs questionnaires. It is the most widely used approach to scaling responses in survey research, such that the term Likert-type scale is often used interchangeably with rating scale. The scale is named after its inventor, psychologist Rensis Likert.

The number of open-ended questions has been kept to a minimum to reduce the work needed to analyse the responses. The main issue with using open ended responses is that there needs to be a very clear set of instructions on how to record the response consistently across schools. The disadvantage is that this process is more expensive and time-consuming, as coaches must be trained to assess response.

The first two versions of the questionnaires included measuring specific aspects of the physical environment, such as temperature and acoustic levels; and their quality. However, it was decided to remove these items, as they would add to the administrative burden of the questionnaires. If these items were to be measured, training should be provided to the National Coordinator or the test administrator in each country, so that they would carry out the measurements across the different schools in a country, ensuring that the same methods were used in each school. This would also involve access to the same equipment in all schools of all countries using the LEEP instruments. It was considered that this would significantly add to the cost of implementing the survey, and therefore these items were later removed.

II.5 The first draft of the LEEP instrument

The first draft of the LEEP questionnaires was presented during the 2nd session of the Group of National Experts on Effective Learning Environments in November 2014.

The questionnaires were designed with the following parameters in mind:

a. **Classrooms and learning spaces.** These instruments differed from the PISA contextual questionnaires in that they addressed the classroom level, in addition to the school level. The questionnaires thus requested information from students, teachers, school principals and test administrators about the general facilities and grounds, in addition to specific classrooms or learning spaces in which a) English (native language), b) science and c) a specialist subject area were taught. This allowed for correlations between different outcomes and a particular educational space in which a particular subject was taught, and comparisons between perceptions of different groups using the same space. And, if the Module instruments were used with a PISA or another literacy (learning assessment) instrument, then it would be possible to link students' outcomes in science and English (native language) to students' perceptions of the environment in which science or English were taught.

b. **New and existing facilities.** The questionnaires addressed both new and existing schools. There was a separate section in each questionnaire specifically addressing issues in new schools. For example, in the student questionnaire, students were asked about the extent to which they agree with statements related to improvements (or not) in the learning environment. In the teacher and school questionnaires, teachers and school principals were asked about participation of different stakeholders in the design of the new school, professional development, and the extent to which they believed that the new facilities have achieved improved learning and other outcomes, such as e.g. improved collaboration between teachers, improved access to ICTs, changes in pedagogy, improved students', local community's and parents' perceptions of the school, etc.

c. **Implementation of instruments.** The questionnaires were designed to be implemented in three different contexts: as a self-evaluation instrument by individual schools; as part of the contextual information collected alongside the PISA-based Test for Schools (PBTS); or with other national or sub-national student assessments.

d. **Level of education and age of respondents.** Since these questionnaires were classroom-based, the questionnaires were designed for students and teachers in secondary school classes, where (most) students were 15 years old.

e. **Type of questionnaire items and length of questionnaires.** To avoid respondent burden, questionnaire items were all multiple-choice Likert-style responses. There were no open-ended questions, as they would require additional response time, data analysis, and would ultimately prove costlier. It was estimated that the questionnaires would require no more than 15 minutes response time.

The 2013 LEEP Framework identified focus areas and themes for the Module and outcomes for three respondent groups: students, teachers and school principals. The aim at that point was to also collect data on measurable aspects of the physical learning environment using a context questionnaire. The questionnaires summarised below put into operation the information about the focus areas for the three groups. The revised LEEP Framework "An OECD Framework for a Physical Learning Environments Module – Revised edition" (OECD, 2017) [EDU/EDPC/GNEELE(2017)4] presents the revised focus areas.

Student questionnaire

The student questionnaire was addressed only to students in classes composed of (mostly) 15-year-olds studying English (native language) or science or a specialist subject area. Students were asked to respond to questions about learning spaces in these three different subject areas. Eleven questions were drawn from the PISA 2012 student questionnaire and there was a separate section for new facilities, where relevant, to probe whether students thought that the new school improved the learning environment or not. The student questionnaire was composed of 43 questions in 7 sections (Table II.1).

Teacher questionnaire

The teacher questionnaire was addressed only to teachers of classes of (mostly) 15-year-old students studying English (native language) or science or a specialist subject area. Five questions were drawn from the TALIS 2012 questionnaire, which are related to teacher background characteristics and classroom climate. As with the student questionnaire, there was a separate section for new facilities, again to probe whether teachers believed that the new facilities achieved different learning and other outcomes (e.g. improved collaboration between teachers, improved access to ICTs, changes in pedagogy, improved students', local community's and parents' perceptions of the school, etc.). The teacher questionnaire was composed of 23 questions in 5 sections (Table II.1).

A. First draft of LEEP instrument [Nov 2014]

	No of questions	No of items	No of sections	Areas of focus
Student questionnaire	**43**	**150**	**7 + 1**	**access and safety; preconditions for students; appearance; comfort; concern for the environment; connectivity; flexibility of furniture and space; outdoor spaces, social spaces, favourite spaces and shared visual workspace; specialist spaces**
Teacher questionnaire	**24**	**155**	**5 + 1**	**access and safety; preconditions for students; preconditions for teaching (and with technology); appearance; comfort; connectivity; equity; flexible use of furniture and space; participation in design; professional development; recruitment and retention of teachers**
School questionnaire	**30**	**172**	**7 + 1**	**preconditions for students; preconditions for teaching (and with technology); allocation and use of space; comfort; community collaboration (e.g. industry, interagency collaboration); leadership and innovation; outdoor spaces, social spaces, favourite spaces and shared visual workspace; participation in design; policy context; professional development**
Context questionnaire	**3**	**27**	**1**	**measure the quality of the indoor environment in each of the <English> <Science> and <Specialist subject area> classes: temperature, CO2 levels, ambient sound, room capacity, floor area and humidity; photograph spaces and collect architectural drawings of the school**
TOTAL	**100**	**504**		

Table II.1: main characteristics of the first draft of the LEEP instrument

School questionnaire

The school questionnaire was addressed to school principals in schools in which classes of (mostly) 15-year-old students study English (native language) or science or a specialist subject area. As

with the other two questionnaires, there was a separate section covering new facilities. In addition to the 3 questions on school type (funding source and management) and location drawn from the PISA 2012 questionnaire, the school questionnaire is composed of 27 other questions (Table II.1).

Context questionnaire

The context questionnaire was originally conceived in the 2013 LEEP Framework as a means of collecting quantitative data on measurable aspects of the built environment (e.g. measures of air quality, temperature, light and humidity, table/chair size, wi-fi wideband speed, etc.) and pedagogy (e.g. observed use of spaces). However, the resulting instrument was extremely difficult to use. It was therefore decided by the Technical Advisory Group [TAG] that school principals were the most appropriate respondents to questions concerning aspects identified in the 2013 LEEP Framework for the context questionnaire, such as Internet speed, maintenance costs, sustainable feature in the school and general accessibility issues. The instrument was thus simplified to measure the quality of the indoor environment in each of the <English> <Science> and <Specialist subject area> classes: temperature, CO2 levels, ambient sound, room capacity, floor area and humidity. Results could be compared with perceived comfort levels of students and teachers. In addition, test administrators were requested to photograph spaces and collect architectural drawings of the school in order to assist with the visual representation of data collected through other survey instruments. The aim was to have this information collected by a trained test administrator.

Although the questionnaires in their initial draft form reflected the focus areas and themes in the 2013 LEEP Framework, the Group of National Experts on Effective Learning Environments [GNEELE] was concerned that the instruments were too complex and thought that they should address more directly how educational spaces enable more effective learning. The GNEELE believed that the instruments should also address more directly how investments in learning environments can be made most efficiently (at the school level); the last concern of the GNEELE was about the extent to which the learning environment meets minimum requirements to ensure users' comfort, access, health, safety and security.

II.6 The second draft of the LEEP instrument

To address the concerns of the GNEELE, the Technical Advisory Group (TAG) explored the concepts of "effectiveness", "efficiency" and "sufficiency" in relation to the physical learning environment, to inform further development of the questionnaires. Please note that all these terms and concepts described below, refer to the ones presented in the 2013 LEEP Framework and are therefore maintained in their initial language/form.

Revision of the Framework

Further to the implementation of the LEEP Field Trial [October-November 2016] and the developments during the 5th meeting of the Group of National Experts on Effective Learning Environments [October 2017], the OECD Secretariat has revised the 2013 Framework [*Effectiveness, Efficiency and Sufficiency: An OECD Framework for a Physical Learning Environments Module*]. The new document is entitled "An OECD Framework for a Physical Learning Environments Module – Revised edition" (OECD, 2017) and sets out the proposed revisions to the terms "effectiveness", "efficiency" and "sufficiency".

Defining "effectiveness"[3] [based on the 2013 LEEP Framework]
Given that "Effectiveness" is defined in the 2013 LEEP Framework as the ability of a school or school system to adequately accomplish its stated education objectives, in the context of the Module, the TAG looked at how the LEEP questionnaires could benefit from drawing on existing work by the OECD Centre for Educational Research (CERI) on evidence-based learning principles. Innovative Learning Environments (OECD/CERI, 2014) describes the importance of a learning environment that is:

1. learner-centred,
2. collaborative and social,
3. motivating,
4. individualised,
5. challenging,
6. supported by formative feedback and
7. connected.

The questions that Innovative Learning Environments (OECD/CERI, 2014) raise, are:

1. How does the learning environment enable learner-centred pedagogy? Does it recognise the learners as its core participants, encourage their active engagement, develop in them an understanding of their own activity as learners ("self-regulation")?
2. Does the learning environment enable the collaborative and social nature of learning?
3. How does the learning environment enable student and teacher motivation?
4. How does the learning environment enable individualised learning?
5. How does the learning environment enable a challenging learning programme?
6. How does the learning environment enable the important role of formative feedback?
7. How does the learning environment enable "connectedness" in its broadest sense?

The Technical Advisory Group (TAG) further looked at how the LEEP questionnaires could seek to operationalise these principles. TAG would introduce questions to ask, for example, the extent to which different learning spaces enable learner-centred pedagogies, or the extent to which different learning spaces enable collaborative learning, etc. However, it concluded that it would be difficult to operationalise principles (5) and (6) in terms of a direct relationship with the physical learning environment, although it could be argued that providing private space for a student-teacher

[3] The terms "effectiveness", "efficiency" and "sufficiency" are revised in the new document entitled "An OECD Framework for a Physical Learning Environments Module – Revised edition".

consultation would relate to this. TAG also concluded that principle 1: Learner-centredness may also overlap with other principles related to the physical learning environment.

The OECD (2006) defines "educational spaces" as "a physical space that supports multiple and diverse teaching and learning programmes and pedagogies, including current technologies; one that demonstrates optimal, cost-effective building performance and operation over time; one that respects and is in harmony with the environment; and one that encourages social participation, providing a healthy, comfortable, safe, secure and stimulating setting for its occupants". In its narrowest sense, the physical learning environment is seen by many as a conventional classroom and, in its widest sense, as a combination of formal and informal education systems where learning takes place both inside and outside of schools (Kuuskorpi et al, 2011).

In the past, physical learning environments have been designed to explicitly support a teaching-centred model that utilised one dominant strategy - a 'one to many' approach. Typically, a classroom was rectangular, furniture was fixed, or heavy to move, with student desks and chairs arranged in rows facing the teacher's desk, and a blackboard, or more recently a whiteboard, fixed to the wall. The effectiveness of the learning environment related to how the physical learning environment supported this approach and enhanced traditional outcomes in literacy, numeracy and knowledge (Atkin et al, 2015). However, the seven principles outlined by the Innovative Learning Environments (OECD/CERI, 2014) which include learning to learn, learner self-direction, an emphasis on collaboration and creativity, in addition to supporting direct and explicit instruction, suggest that the **learning environment needs to support a learning-centred approach rather than a teaching-centred approach** (Atkin et al, 2015). It needs to:

- promote a positive disposition or attitude to the school by students, staff and parents;
- support and enhance specific learning and teaching activities, such as explicit instruction in a range of group sizes, collaboration, creating and investigating, and so on;
- promote a learning-centred approach, in other words an approach that supports enquiry, collaboration and personalised learning.

To meet these needs, students might work individually, in small groups and occasionally in one large group; teachers may work with individual students, different groups of students working on different projects, or teachers may work together with much larger groupings of students. This implies that the space in which teaching and learning occur; must be **responsive** to different needs. It also suggests that the space that students and teachers use must be **varied** and **flexible**, enabling them as users to easily and quickly rearrange the furniture, or to find an area where they can carry out their particular activity.

Beckers et al (2013) note that the increase of self-regulated learning implies that the physical learning environment should not be a static box, but a **dynamic environment** that is responsive to the needs of teaching and learning; the physical learning environment should also be sufficiently flexible to facilitate different learning modes and styles, whether traditional or personalised. Kühn (2011) notes that **flexibility** can be achieved through varied room sizes, the ability to rearrange the furniture to create different learning settings, as well as throughvaried time management. While a learning environment must meet the needs of the changing pedagogies and the principles noted above, it still has to meet the needs of current teaching approaches.

Schabmann et Al (2016) identified a **series of learning arrangements** for innovative learning environments. These learning arrangements are associated with the way that teaching and learning take place whereby students encounter various forms of personalised learning and individual learning activities. Personalised learning may be project work, where students are divided into subgroups of various forms and in learning partnerships with different group sizes (e.g. group discussions, role plays, paired reading); individual learning activities may be

independent of research or reading. Also, some activities include exploratory learning, as well as teaching in teams and across disciplines.

Therefore, the effectiveness of the physical learning environment depends on the availability and the degree of choice that students and teachers have to use spaces (Atkin et al, 2015), and the extent to which the spaces are readily available and configurable.

Atkin and Canella (2016) argue that it is not space alone, nor pedagogy alone, that promotes ensure the development of 21st century learning capabilities, but rather the interdependent nature of space and pedagogy. There needs to be a deliberate design of pedagogy and space to achieve the desired learning outcomes (Figure II.4).

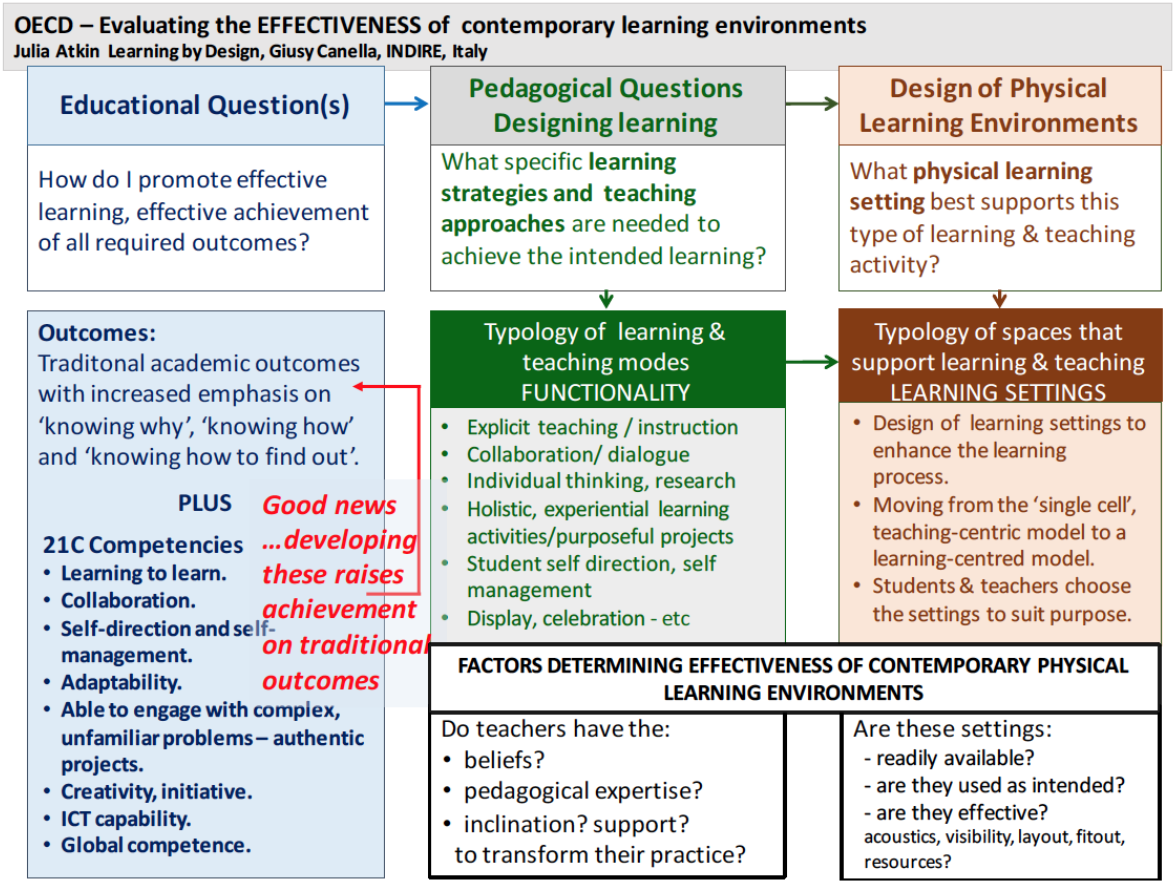


Figure II.4: Evaluating the effectiveness of contemporary learning environments

Defining "efficiency"[4] [based on the 2013 LEEP Framework]

The 2013 LEEP Framework defined efficiency as the achievement of stated education objectives at the lowest possible cost. In other words, efficiency is effectiveness plus the additional requirement that it is achieved in the least expensive manner. In the context of the Module, it refers to how the physical learning environment has enabled more efficient use of space with regard to resource and space planning, use and management, as reported by teachers and school principals.

A literature review carried out for the LEEP project on efficiency in school buildings, although not published, revealed that little has been written on the efficiency of school buildings. The literature also noted that efficiency could be considered in many different ways, illustrating the complexity of

[4] The terms "effectiveness", "efficiency" and "sufficiency" are revised in the new document titled "An OECD Framework for a Physical Learning Environments Module – Revised edition".

the topic. The review suggested that efficiency could be considered at a **day-to-day** operational level, at the **medium term** level and at a **strategic** level. The day-to-day operational level refers to looking at how efficiently the space is used; the medium term at considering the upgrading of the building or the provision of new facilities (for example, looking at the efficiency of procurement of the new buildings); and the strategic level would concern the efficiency of the school management within a system or network.

At all of these levels, efficiency has a number of different dimensions. They might include the usability of the space, flexibility, and how easy it is to reconfigure the spaces to meet different needs, maintenance, management and how much time and effort is needed to manage the use of the buildings, space utilisation, which would include looking at how intensively a space is used throughout a day and energy efficiency (how much energy is used by the building).

A **common measure of efficiency** for the use of space in school buildings is the relationship between the overall floor area of the building(s) and the area used for teaching and learning (Lippman, 2010). Within the context of the LEEP survey, the Technical Advisory Group (TAG) considered that this would be difficult to systematically determine across different schools and countries. This approach would require accurate information about the exact areas used for teaching and learning; it should also involve addressing questions, such as whether the whole corridor, or merely a part of it (and/or other parts of the school building) should be considered in that respect. It would also require a uniform approach measuring floor areas across schools.

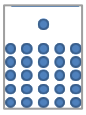
The TAG concluded that it would be difficult to consistently measure efficiency in the ways suggested within the constraints of managing the LEEP survey. The TAG concluded, nevertheless, that useful insights on the efficiency of the physical learning environment could be gained from the self-evaluation questionnaires of the LEEP instrument.

Defining "sufficiency"[5] [based on the 2013 LEEP Framework]
The 2013 LEEP Framework defined sufficiency as the baseline components of the built environment, which are considered as the minimum preconditions most likely to impact on student learning. In the context of the Module, it refers to the minimum requirements for a school and its learning spaces to ensure the comfort, health, safety and security of its occupants, as reported by students, teachers and principals.

Developing further questions for the instruments
Following the reflection on effectiveness and efficiency outlined above, the Technical Advisory Group (TAG) developed further questions for the questionnaires to explore more fundamentally how the space would be used for teaching and learning.

Four modes or basic spatial configurations are used (see Figure II.5):
- **Presentation:** layouts that support explicit instruction/presentation to the whole group.
- **Group:** layouts that support approaches where students are required to collaborate and work in small groups to share ideas and help each other.
- **Individual:** Layouts that support approaches where students work independently to write, read, research, think and reflect.
- **Team teaching:** Layouts that support approaches where two or more teachers work collaboratively with groups of students sharing the same space.

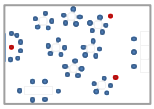
[5] Ibid.



Presentation:
Layouts that support explicit instruction/presentation to the whole group.

Group:
Layouts that support approaches where students are required to collaborate and work in small groups to share ideas and help each other.

Individual:
Layouts that support approaches where students work independently to write, read, research, think and reflect.



Team teaching:
Layouts that support approaches where two or more teachers work collaboratively with groups of students sharing the same space.

Figure II.5: Types of spatial layout included in the student and teacher questionnaire

B. Second draft of LEEP instrument [Oct 2015]

	No of questions	No of items	No of sections	Areas of focus
Student questionnaire	63	294	8 + 1	access and safety; preconditions for students; appearance; comfort; concern for the environment; connectivity; flexibility of furniture and space; outdoor spaces, social spaces, favourite spaces and shared visual workspace; specialist spaces
Teacher questionnaire	28	202	5 + 1	access and safety; preconditions for students; preconditions for teaching (and with technology); appearance; comfort; connectivity; equity; flexible use of furniture and space; participation in design; professional development; recruitment and retention of teachers
School questionnaire	40	192	6 + 1	preconditions for students; preconditions for teaching (and with technology); allocation and use of space; comfort; community collaboration (e.g. industry, interagency collaboration); leadership and innovation; outdoor spaces, social spaces, favourite spaces and shared visual workspace; participation in design; policy context; professional development
Context questionnaire	3	27	1	measure the quality of the indoor environment in each of the <English> <Science> and <Specialist subject area> classes: temperature, CO2 levels, ambient sound, room capacity, floor area and humidity; photograph spaces and collect architectural drawings of the school
TOTAL	134	715		

Table II.2: main characteristics of the second draft of the LEEP instrument

On the basis of these four modes or basic spatial configurations (see Figure II.2) a series of questions were developed for both the student and teacher questionnaires. These questions were

meant to probe the extent to which the different teaching approaches were used, whether the spaces that were used could be easily and quickly reconfigured to accommodate the different arrangements, what were the constraints related to the use of the spaces, and whether teachers would choose to use these different arrangements, if they were given the option. The aim was to gain insight both into how supportive the space is, but also into whether teaching practice in the school was prepared to use space differently.

To support the different modes of learning, the space must not only be able to accommodate the different furniture arrangements, but also offer the possibility of rearranging data projectors and visual displays.

Therefore, questions were added that probed how often each type of layout was used, and whether the physical learning environment supported each particular teaching approach.

For each specific classroom or learning spaces in which English (native language), science, and a specialist subject were taught, a series of questions were developed probing each of the four spatial arrangements: presentation style; group work, individual; and team (collaborative) teaching.

Table II.2 illustrates the main characteristics of the second draft of the LEEP instruments.

II.7 Revising the second draft of the LEEP instrument

The Group of National Experts on Effective Learning Environments (GNEELE) was concerned with the complexity of the instruments. The GNEELE was also worried that although the questions would gather a significant amount of data on the relationship between the physical learning environment and specific subject areas (science, native language, maths), it would not cover the performance of the whole school environment. The GNEELE suggested that it would be important to streamline the instruments and **develop a principal focus for each respondent group**.

The GNEELE also reflected on the cost of implementation of the module with particular concerns about the ease with which the context questionnaire could be applied. The test administrator of the context questionnaire was expected to take specific measurements of the school environment, such as carbon dioxide levels, room temperatures and sound levels. However, it would be important to measure these attributes in the same way, across the different participating schools and countries to ensure comparability of data. The Technical Advisory Group (TAG) concluded that while collecting such data would be useful, this could be addressed in a future variant of the instruments. Therefore, the OECD Secretariat decided **not to include the context questionnaire** and instead include some of those questions in the School Questionnaire.

The questionnaires were modified, so that the questions explored respondents' perceptions of the **whole school environment** rather than their perceptions of spaces where specific subjects were taught, as was the case in the first draft. However, the possibility that a future variant could analyse specific subject classroom(s) or space(s) remained open.

For each respondent group the questionnaires have been focused on specific issues. The aim of this was to **reduce respondent burden** by identifying and focusing on areas that had been already identified by the literature as most impacting on outcomes. The focus for the student questionnaires was on environmental comfort (e.g. thermal, acoustic, air quality), ergonomic comfort, safety and well-being. The focus for the teacher questionnaire was on how the spaces support teaching, which includes the extent to which the spaces can be arranged and re-arranged for different modes of teaching, as well as the availability of technology and comfort. The focus of the school questionnaire was on the allocation of space and availability of technology and wi-fi. In summary:

Student Questionnaire
The student questionnaire is addressed to secondary level students and is not subject specific. There is a specific focus on comfort, including ergonomic comfort, as well as safety and well-being. However, students are also asked to respond to questions regarding their use of internal and external spaces, and whether they can find a space to work outside lesson time if they need to. The student questionnaire covers: spaces used; thermal comfort, air quality, lighting, visual comfort, acoustics and ergonomics; and safety. The student questionnaire was composed of 21 questions in 5 sections.

Teacher Questionnaire
The teacher questionnaire is addressed to all teachers of secondary school level students. There is a specific focus on how the spaces support teaching; this includes the extent to which the spaces can be arranged and re-arranged for different modes of teaching, as well as the availability of technology and comfort. The teacher questionnaire was composed of 30 questions in 8 sections.

School Questionnaire
The school questionnaire is addressed to school principals of secondary level schools. There is a specific focus on allocation of space and availability of technology and wi-fi. In this version it was

not anticipated that measured data would be collected. The school questionnaire was composed of 14 questions in 4 sections.

The revised second draft was designed as follows, in regards to the parameters used for the first draft:

- **Classrooms and learning spaces:** The questionnaires requested information from students, teachers and principals on the spaces they use for learning and teaching in general.

- **New and existing facilities:** Although the questionnaires apply to both new and existing facilities, there is no separate set of questions for new facilities.

- **Implementation of instruments:** The questionnaires were designed to be implemented in three different contexts: as a self-evaluation instrument by individual schools; as part of the contextual information collected alongside the PISA-based Test for Schools (PBTS); or with other national or sub-national student assessments.

- **Level of education and age of respondents:** Although the questionnaires were addressed to students and teachers in secondary schools, they could also be adapted for use by primary schools. In most countries, students spend a large part of the school day in one classroom, therefore classroom specific questions could be developed.

- **Type of questionnaire items and length of questionnaires.** To avoid respondent burden, questionnaire items were all multiple-choice Likert-style responses. There were no open-ended questions, as these would demand additional response time, data analysis and might prove costlier. It was estimated that the questionnaires would require no more than 15 minutes response time.

II.8 The lab test and the final draft of the LEEP instrument

ACER carried out the LEEP laboratory test in August 2016 to test the viability of the questionnaires with groups of teachers and students. The **purpose** of the lab test was to test whether the questions as formulated could be answered, and how long it would take participants to answer them. Given that the questionnaires were originally designed with the PISA age group in mind (15 year olds), it was important to check that the questionnaire was suitable for 12-13 year olds, thus encompassing secondary education.

As it was imperative to carry out the LEEP lab test quickly, only independent schools in Melbourne were approached (the approvals needed for including Government and Catholic schools may have taken longer to obtain). Five independent schools were approached and one agreed to participate. No incentives were offered by ACER. The school offered an afternoon tea as a means of encouraging students to participate.

Four teachers participated, including the deputy head of the middle school. Three teachers looked at both the teacher questionnaire and the student questionnaire. The deputy head looked at the school questionnaire.

The school was a boys' school in a reasonably affluent area of Melbourne. Six boys participated, all in Year 7 (ISCED 2), or first year of secondary education in Australia. The boys were aged 12-13. This year level was requested by ACER as being the youngest secondary level likely to be surveyed, on the basis that had there been any difficulties with understanding any of the questions, this would have been more likely to occur in the youngest age group. The questionnaires were originally designed with the PISA age group in mind (age 15, year levels 9 or 10 in Australia) so it was important to check that the questionnaire was suitable for 12-13 year olds.

The test suggested that students could complete questionnaires in less than 15 minutes. Some questions needed minor amendments to clarify meaning.

The final draft of the instruments was presented to the GNEELE in November 2016, during the 4th session of the Group of National Experts on Effective Learning Environments, in Auckland, New Zealand. The following table summarises the key focus areas of the final draft:

C. Finalised LEEP instrument that went into field trial				
	No of questions	**No of items**	**No of sections**	**Areas of focus**
Student questionnaire	**21**	**60**	**5**	**comfort [including ergonomic comfort]; safety; well-being**
Teacher questionnaire	**30**	**101**	**8**	**usability of space and spatial arrangement [includes the extent to which the spaces can be arranged and re-arranged]; availability of technology; comfort**
School questionnaire	**14**	**50**	**4**	**general information of the school; allocation of space; availability of technology and wi-fi**
TOTAL	**65**	**211**		

Table II.3: main characteristics of the third (finalised) draft of the LEEP instrument

This version of the LEEP instrument was the one that went on Field trial in October – November 2016, right before the GNEELE meeting.

II.9 Development of the indicators for the LEEP study

The Technical Advisory Group (TAG) identified four indicator domains from the 2013 LEEP Framework to address how the space supports teaching and learning:

Space: Sufficient provision, availability and agility/flexibility of space; age of facilities

Technology: Availability and flexibility of technology

Comfort: Temperature; air quality; auditory quality; natural light; visual quality; ergonomic comfort

School climate: Teacher motivation; school leadership

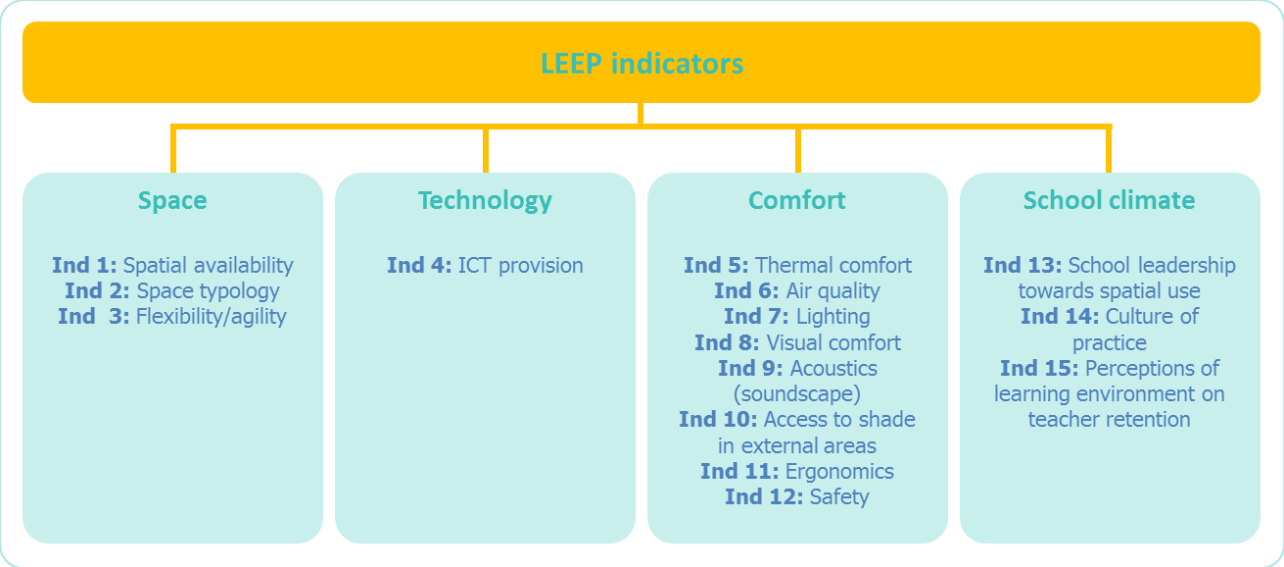


Figure II.6: LEEP indicators

The following indicators are applicable to the LEEP instrument that went on Field Trial in October-November 2016. The revised LEEP instruments that resulted from the Field Trial findings and recommendations might correspond to revised indicators.

Space

- **Indicator 1:** Spatial availability (adequacy and access to space and variety of spaces)

- **Indicator 2:** Space typology
  The types of spaces, their organisation, and the allocation and frequency of use by students and teachers, provide valuable information about the organisation and practices of teaching and learning. Spatial typology provides indications of how the spaces might shape the teaching and learning processes and impact on health and well-being, as well as learning and social outcomes. For example, in the field of environmental psychology, Gifford (2002) noted that within educational settings, the "amount and arrangement of space is very important flor classroom performance and related behaviours".

- **Indicator 3:** Flexibility of space
  This is an indicator of health, wellbeing, and learning. The built environment can act as a catalyst (or hindrance) and opportunity for innovation and more modern teaching methods and learning processes. Flexibility from a teachers' point of view is about how to make a better and

a more pedagogical use of the space. Flexibility is not just about furniture or ICT, or whether there are open or closed off areas; it is more about space and how it can be reconfigured for different purposes. The ease and speed with which space can be reconfigured is often called spatial agility. While innovative pedagogies may not rely on new-built spaces, well-designed learning spaces provide multiple preconditions for innovative pedagogies through flexibility (Heppell et al., 2004), adaptability and connectivity. Research suggests that flexible spaces can encourage more effective teaching (Anderson-Butcher et al., 2010; Oblinger, 2006) and team teaching, better planning, use of more diverse pedagogies, greater focus on personalised learning, and students to be self-reliant learners capable of working in groups (Dekker, Elshout-Mohr and Wood, 2006; Fielding, 2006).

Technology

- **Indicator 4:** ICT provision
  Teachers and students decide on how technology is mobilised in different spaces (Bissell, 2002) and ready access to resources -including ICT- enables teachers and students to experiment with new learning tools, engage in joint learning experiences and diversify the demonstration of learning (DEECD, 2009).

Comfort

The comfort indicators relate to the health and well-being of both students and teachers; which are linked to student outcomes.

- **Indicator 5:** Thermal comfort
  Important both for student learning, teacher retention and task performance, and teachers' job satisfaction (Schneider, 2002; 21st Century School Fund, 2009).

- **Indicator 6:** Air quality
  Fresh air in the learning spaces prevents mould and airborne bacteria that can have adverse effects on student's and teacher's health (Schneider, 2002; 21st Century School Fund, 2009), and also helps reduce CO2. Humid air can be an indicator of a high-level of moisture in the air, which in turn can help microorganisms develop and, at excessive levels, create moulds, which can negatively affect students and teachers' health (Barrett, 2013).

- **Indicator 7:** Lighting
  Natural (day) and artificial lighting have been found to have considerable effects on learner performance, with natural light optimising student achievement (Schneider, 2002; 21st Century School Fund, 2009). Being able to control glare is of great importance, given the widespread use of interactive whiteboards or projectors.

- **Indicator 8:** Visual comfort
  Being able to see what a teacher or other student demonstrates or shows on a display screen will be important in any learning environment.

- **Indicator 9:** Acoustics
  Good acoustics have been found to play a fundamental role in academic performance (Schneider, 2002; 21st Century School Fund, 2009).

- **Indicator 10:** Access to shade in external areas
  Provides an indication of the usability of external spaces.

- **Indicator 11:** Ergonomics

- **Indicator 12:** Safety

School climate/culture

Indicator 13: School leadership towards spatial use

- There is a substantial body of literature to indicate that innovation and capacity to address individual student needs is reliant on a teaching workforce that is treated respectfully, that has a great deal of professional autonomy and a collective sense of efficacy and a capacity to adapt and adopt curriculum and pedagogies as required (Chism, 2005; Sahlberg, 2011).

- **Indicator 14:** A Culture of practice
  Collaborative methods and team teaching is likely to lead to improved student outcomes (e.g. Darling-Hammond, 2008, 2002, 2001; Elmore, 2007; Gijlers et al., 2009), but only with significant teacher professional development and supportive school cultures (Given et al., 2010). Using a variety of teaching methods each of which is targeted to developing specific student outcomes is most effective. The more a teacher collaborates with other teachers in the school, the more he or she tends to regularly use learning strategies that have a positive effect on student outcomes (Le Donné et al, 2016).

- **Indicator 15:** Perceptions of learning environment and teacher retention
  Students and teachers identify with their school's image and reputation. Poorly designed and maintained schools, often found in areas of lowest educational achievement, can have a detrimental impact on teacher and student morale and engagement, and impact negatively on overall student outcomes.

Chapter III
STRUCTURE & CONTENT OF THE FINALISED LEEP INSTRUMENTS

III.1 Overview

Following advice from the GNEELE to reduce the complexity and scope of the questionnaires, and further to the LEEP lab test that was run by ACER, the final draft of the questionnaires that would be used in the Field Trial was finalised in October 2016.

This chapter presents the structure and the content of the finalised instruments; the Annex presents the three questionnaires.

The next step after the finalisation of the instrument was the implementation of the LEEP Field Trial. This paper does not address the LEEP Field Trial. Another OECD Report, the LEEP Field Trial Implementation Report [EDU/EDPC/GNEELE(2017)5], provides information on the implementation and the operational issues of the Field Trial.

This paper, along with the above Report, is included in the "Learning Environments Evaluation Programme Series".

III.2 Structure of the LEEP finalised instruments

There are three LEEP questionnaires: the student, the teacher and the school questionnaire. The latter is to be completed by the school principal. Each questionnaire is structured in such a way that it is simple to use and easy to understand. Most of the questions have been developed so that responses are given using a scale. There are a few open questions; because the data process for such questions is more time-demanding. The responses are anonymous to protect the identity of individuals. The questions either specify a particular time period which the respondent needs to consider, or they may ask about the perception in general.

The following figure summarises the structure and the sections of the three questionnaires that went into **Field Trial in October-November 2016**. The common sections between questionnaires are the same colour. All questionnaires end with the same section/question about overall satisfaction.

Structure of the finalised LEEP instrument that went into Field Trial

	Student questionnaire	Teacher questionnaire	School questionnaire
Section 1	About You 4	About You 8	About You 6
Section 2	Spaces you use 6	About your school 2	The physical environment of the school 4
Section 3	Comfort 8	Spaces you use 5	Technology at the school 3
Section 4	Safety and well being 2	Comfort 6	Overall satisfaction 1
Section 5	Overall satisfaction 1	Technology 2	
Section 6		Arrangement of the space 5	
Section 7		Space for admin work & class preparation 1	
Section 8		Overall satisfaction 1	

Figure III.1: Summary of the structure and the sections of the three questionnaires that went into Field Trial on October – November 2016.

The following three sections describe the broad core questionnaires' content and how the questions relate to the evaluation of the physical learning environment.

III.3 Content of the finalised instruments: the student questionnaire

The student questionnaire is primarily addressed to students in secondary education (ages 13-18 years old). It is also envisaged that it could be adapted for use by students in primary education. The estimated response time for the questionnaire is 15-20 minutes. The student questionnaire is composed of 21 questions in 5 sections:

Section 1: About you
This section asks questions about the name of the school, the country in which the school is located and specific student characteristics of year level and sex.

Section 2: Spaces that you use
The six questions in this section are related to the types and characteristics of the spaces that students might use inside the school building, or outside the classroom but within the school grounds, for instance, a garden. The aim is to develop an understanding of the variety of spaces that they use. The questions cover both the period during lesson time and outside lesson time.

The questionnaire identifies common space types found in schools, although respondents are asked to suggest additional types if they exist. The list of spaces is not confined to traditional 'teaching' type spaces, such as classrooms and laboratories, but also includes spaces, such as circulation spaces and the school canteen. The intention is to understand students' use of space in the school.

The extent to which students can use different spaces outside lesson time may well depend on the structure of the school day, but will provide an indication whether working outside lesson time is embedded in the school's culture, or whether students are encouraged to use other learning resources, such as the library, outside formal learning hours.

Two of the questions probe the extent to which students think that space is available for them to use outside lesson time either individually, or as a group say doing group project work. These two questions do not specifically ask about the type of individual or group work they may want to do, rather they are meant to tease out general information. Neither do they address whether there is a ban on using the learning spaces outside formal teaching periods. These two questions also have a 'Not applicable' answer choice.

The extent to which the spaces are used by students outside the formal teaching periods may give an indication of how intensively the buildings are used, or could be used, which is in turn related to efficiency – The more intensive the use of the spaces, on one measure at least, the more efficient the school building is.

The question external spaces covers a range of different types of external spaces, and is intended to probe the spaces students use during lesson time, to get a picture of whether spaces other than formal classrooms are used.

Section 3: Comfort
There are eight questions in this section that address temperature, air quality, sound, light and furniture. To keep the questionnaire straightforward it asks whether students 'usually feel' too cold, too hot or about right and relates this to in one question whether it is cold outside or hot inside. Often such questions would be seasonally specific, but since it is anticipated that the questionnaire would be used around the world where seasons may not be apparent in some countries but also by asking about their perception of the relative temperature outside, gives an indication of whether they think the building is responsive to different environmental conditions.

The questions in this section ask students to give a general view in the context of the whole school rather than specific spaces, mainly because it may be harder to relate these specific questions to a wide variety of different spaces that may or may not be used throughout the year.

The question on air quality asks whether the air is usually fresh or humid.

Whether students can hear in spaces is clearly an important feature of the space. The question covering sound asks whether students can hear both teachers and other students clearly, and as a separate component, whether they are disturbed by noise from outside the space.

There is a question which probes whether students can see without difficulty what is displayed on a whiteboard/chalkboard, a display screen, or when a teacher is using apparatus to give a demonstration as they might in a science lab. Whether or not a student can see what is displayed, will depend on a number of factors, and this question probes whether the school is set up so that students can see these things whether or not they are near the screen or further away from it at the back of the space.

Section 4: Safety and wellbeing

Two questions probe students' sense of safety. The first one asks whether students feel generally safe in the school, and more specifically in different parts of the school and the school grounds. The question tackles this as a broader concept asking whether students feel afraid or embarrassed and separates the toilets, learning spaces and other parts of the school. A key area of concern in schools is bullying, and toilet facilities are often a location for bullying.

III.4 Content of the finalised instruments: the teacher questionnaire

LEEP presents an opportunity to evaluate the relationship between teacher perceptions of the environment and teaching style, self-concept and morale; and how this relationship informs their practice. It is also an opportunity to get their views about the attraction and retention of teachers.

The quality of the learning environment at the classroom level, in turn, is to a large extent determined by the instructional methods and classroom practices used by the teacher.

A large part of teacher activity occurs in the classroom, through instructing classes of students more or less in isolation from other classes and other teachers. Modern teaching skills and practices include professional activities at the school level, such as teacher collaboration, building professional learning communities, participating in school development. Those activities shape the learning environment at the school level, i.e. school climate, ethos and culture, and directly or indirectly (via classroom level processes) impact student learning.

A key issue / research question that this questionnaire addresses is: *How supportive of your teaching are the spaces you use in the school? Can you rearrange the space easily and quickly to accommodate different learning settings and to what extent do you change it?* and if they cannot do this, *what are the impediments, and would you want to change it, if you could?* This question explores how responsive and versatile the spaces are to different spatial layouts and provides an understanding of the pedagogical approach used in the school.

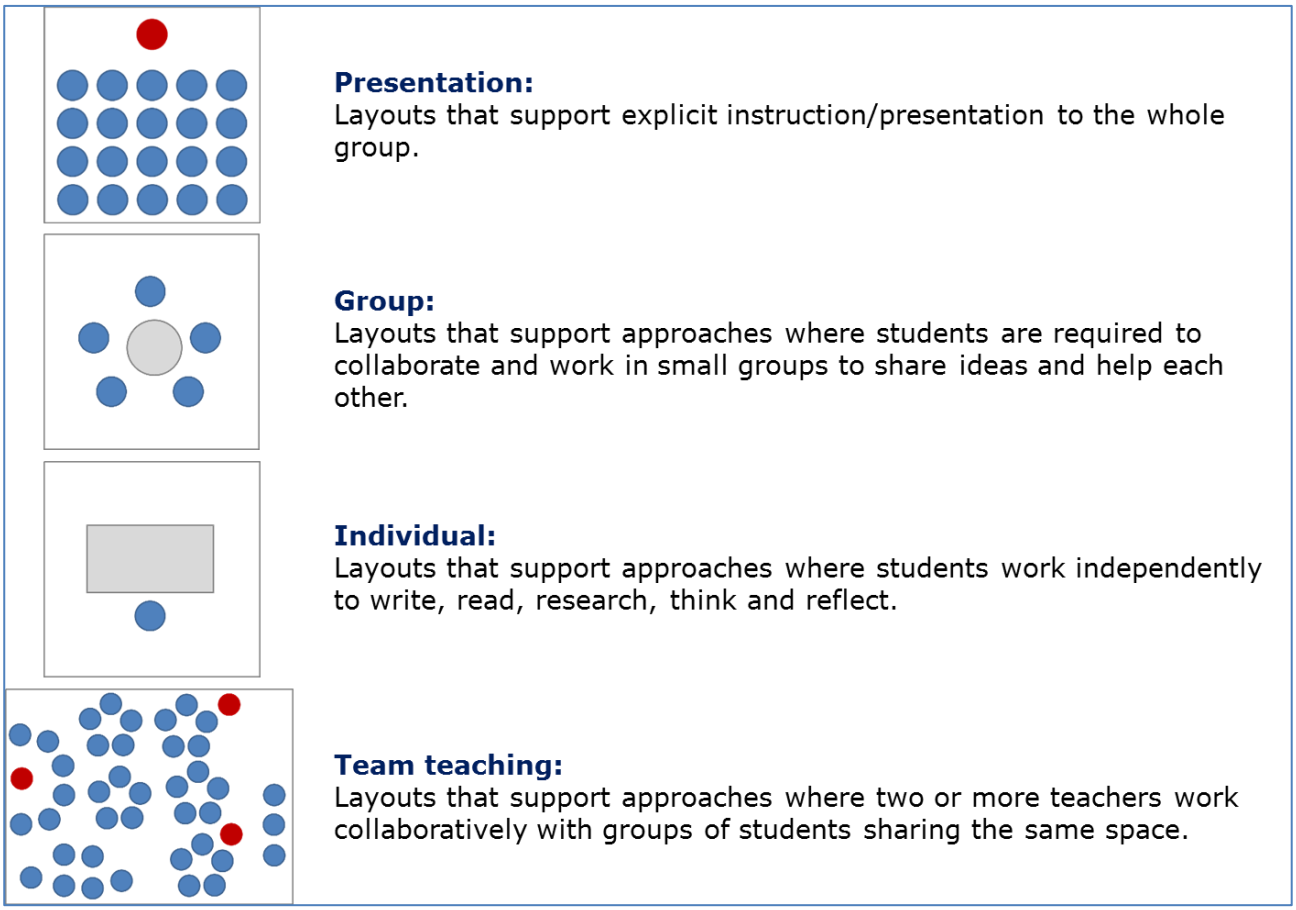


Figure III.2: Four basic spatial types are introduced in the teacher questionnaire

To address the above in **Section 6**, four basic spatial types have been considered to keep the question relatively simple to answer; in general these spatial settings allow in one way or another for the different approaches and learning activities from activities that involve presentation where a teacher or a student, talks or gives a demonstration to a whole group, group work where students work together in small groups, work individually for example reading or reflection. The fourth setting provides a context for collaborative or team teaching, where groups of students may be brought together with several teachers.

The series of questions on this topic are introduced with a diagrammatic illustration of the four settings and a brief description (see Figure III.2).

The first question in this section asks teachers to reflect on their current teaching practice and to give information about the frequency of use -from never, or hardly ever, to every day- of different types of spatial arrangements. The second question then asks how often teachers need to or actually change the layout of the furniture in the space. This question looks at whether the teachers rearrange the furniture to accommodate different learning styles. Although this question probes the use of the space, rearranging furniture and reconfiguring space in particular, may be taken as a proxy for teacher practices. In terms of being able to move the furniture and configure the space, the question also asks whether this can be done quickly; in other words, whether a teacher needs no more than five minutes to create the desired arrangement. This will indicate the agility of the space, in other words how quickly and easy is it to rearrange. The final question in this section asks teachers how often they think they would use these spatial arrangements for teaching.

The teacher questionnaire has 30 questions in 8 sections. While four of the sections (About you, Spaces you use, Comfort and Overall satisfaction) mirror sections with similar coverage in the student questionnaire, this is to compare perceptions between students and teachers, as noted below.

Section 1: About You

This section asks teachers to give some general information, including the name of the school and the country in which the school is located, their sex, year of birth, teaching experience and/or amount of experience in other education roles, whether they teach/work part-time or full-time, and what subjects and grades they teach.

Questions about age and years/amount of experience may give us some indication as to whether there is a difference in how younger or older teachers use space and in their perceptions of comfort. It is sometimes argued that younger teachers tend to be more flexible with their use of space, although there is little empirical evidence that supports this. There might be a correlation between the subjects that are taught and the types of spaces that are used".

Section 2: About your school

The question asks to what extent teachers agree with statements about their school leadership and learning environment. The question is divided into three groups of items. The first group covers teachers' perceptions of whether there is a shared vision, and whether they are encouraged to experiment with different learning spaces.

A teacher's approach to using the spaces in a school may be driven or influenced by the school's culture and leadership environment. Two items (Q9.a and Q9.b) specifically address this by asking whether school leaders and teachers have a shared vision about how to use the school buildings and learning spaces, and whether school leaders encourage teachers to experiment with different ways of using learning spaces. The way that teachers respond to how they use the spaces can

then be compared with these two items to see the reality matches the perception. Asking individual teachers whether there is a shared vision will also determine whether there is agreement for such a vision or not and when compared with the school principal questionnaire, whether there is agreement with the school leadership. For the purposes of this questionnaire, we have defined school leaders as the school principal, the deputy principal and the heads of department.

The second group of items (Q9.c, Q9.d and Q9.e) covers whether the building's response to different forms of teaching practice and is asking for that perception whether building learning spaces encourage collaboration with other teachers, whether they encourage the use of a variety of teaching practices and indeed whether they suit the preferred teaching practice of the teacher.

The third group of items (Q9.f, Q9.g and Q9.h) in this question addresses whether teachers are given sufficient time to plan how best to use the learning spaces. In order to make the best use of the spaces teachers need to plan, so the idea is to find out whether teachers -given the time to plan- would use different learning settings. The learning framework suggests that there is opportunity to explore teachers' perceptions of the relationship between the buildings and teacher retention. To address this, there are items that ask whether the school buildings or facilities might influence teachers' decision to stay in their school, whether they might have a positive impact on teacher attraction and retention, and whether or attract parent when looking to place their children in the particular school.

Section 3: The spaces you use

Section 3 asks teachers about the spaces they use in their school, and whether they use only one classroom, expecting the students to move around the school from class to class, or whether they use different classrooms. Questions also address whether teachers use modes which involve collaborative teaching, in other words whether there is more than one teacher usually in a classroom space during class.

Asking teachers about how often they use different types of spaces gives an indication of the range of use of spaces and perhaps to what extent they think about using one type of space, an issue that may relate back to whether the school culture supports the idea of using different types of space. Outside spaces are important; although not all schools will have them or if they do have them, they will not always be used or available for teaching, and so questions probe the extent of their use and whether they are appropriate for use (usable), for example they may lack enough shade.

Section 4: Comfort

The comfort section mirrors the equivalent section in the student questionnaire and presents an opportunity to see whether the perception of teachers of four of the comfort indices i.e. temperature, air quality, sound and lighting vary or are similar to those of students. Currently, this version of the instrument does not explore visual comfort, ergonomics and safety for teachers as the focus of these issues was on the impact on student outcomes. However, there is a question that asks whether teachers can control heating, air conditioning and glare. Research does suggest that perceived control over the environment is linked with overall satisfaction and perceived productivity.

However, since teachers may have more control than students over mitigating the negative effects of some of the environmental conditions, such as temperature and air quality, by simply opening the windows, and if the teachers' perception of the environment is different to that of the students, then there may be adverse effects on the students.

Section 5: Technology at the school

The section on technology asks teachers what types of knowledge are available in the different spaces in which they teach and how often they use the different types of technology. This can be compared with the school principal questionnaire, which asks about what technology equipment is available in the school. The purpose of these questions is to test the hypothesis that the availability of technology is positively correlated with the teachers' instructional methods and to understand whether they actually use the technology that is available.

Section 6: Arrangement of the space

See above in this section (III.4).

Section 7: Space for administrative work and class preparation

The question on how satisfied teachers are with the provision of a space to work in the school outside lesson time, whether it is to plan, or work on lesson material, share information and have discussions with other teachers, or use for socialising and meetings, gives an indication of the extent to which teachers are given adequate support that goes beyond just teaching students, and whether there is sufficient space for teachers to concentrate and carry out their administrative duties.

III.5 Content of the finalised instruments: the school questionnaire

The purpose of this questionnaire is to collect background information on the school, as well as information about the allocation of spaces and the use of technology. It is anticipated that the School questionnaire will be completed by the school principal. The questionnaire has 14 questions in four sections.

Section 1 -on the structure and organisation of the school- asks for information about whether the school is public or private, where its funding comes from, where it's located, and the number of students enrolled for different year groups.

Section 2 -on the physical environment- addresses the quality of the buildings and asks about the proportion of the school's learning spaces that are in temporary buildings, or new buildings. It provides the context against which the students' and teachers' responses regarding environment comfort and versatility of the classrooms will be evaluated. This section of the questionnaire also asks how classrooms/learning spaces are usually allocated, whether teachers are being allocated the same classroom for all subjects, and whether there may be two teachers using many different classrooms for different subjects.

The section includes a similar question to the one in the teachers' questionnaire that examines whether there is a shared vision for the optimal use of the learning spaces in school, and whether teachers are encouraged to collaborate with each other, and so on; similarly, whether the school leader/school principal thinks that the school buildings and facilities impact on teacher attraction and retention, or on attracting parents.

Section 3 addresses technology used in the school and asks what proportion of classrooms/learning spaces are equipped with different types of technology, such as interactive whiteboards, wireless Internet access, display screens, laptops and notebooks, desktop computers, charging points and cabled Internet access. It also asks whether there is a lack of internet access at school. Given the importance of online/internet access, there is also a question about upload and download speeds.

ANNEX
LEEP Questionnaires used for the Field Trial

The following questionnaires are the full versions of the three LEEP questionnaires used for the field trial in Norway in October 2016 [for students, teachers and school principals]. Each questionnaire begins with a short introduction of the LEEP module for the test takers and continues with the actual questions.

A4.1 LEEP Student Questionnaire

LEEP Student questionnaire

INTRODUCTION

Thank you for participating in this study of OECD [Organisation for Economic Cooperation and Development].

Purpose of survey

The questionnaire is part of an international survey by the OECD Learning Environments Evaluation Programme, to gather evidence on the effectiveness of spaces in schools and to find out whether the spaces in schools support 21st century teaching and learning practices.

The information will be used to prepare an international OECD report on how well schools meet student and teachers needs for 21st century learning.

What this questionnaire is about

This questionnaire asks for information about: the spaces in the school that you use; how comfortable you find them, and your safety and well-being.

There is a separate questionnaire for teachers in your school.

Instructions for completing the survey

Please read each question carefully and answer as accurately as you can.

In this questionnaire there are no right or wrong answers. Your answers should be the ones that are right for yourself.

You may ask for help if you do not understand something or if you are not sure how to answer a question.

Your answers will be kept **confidential**. They will be combined with answers from other students to calculate totals and averages from which no single student can be identified.

The questionnaire has 21 questions and it should take about 15 minutes to complete.

Thank you very much for taking part in this survey.

SECTION 1: ABOUT YOU

Q1 Please give the name of your school:

Q2 Please give the country of your school:

Q3 What year level / grade are you in?

Grade 7 ☐1
Grade 8 ☐2
Grade 9 ☐3
Grade 10 ☐4
Grade 11 ☐5
Grade 12 ☐6
Grade 13 ☐7

Q4 Are you female or male?

Female	Male
☐1	☐2

SECTION 2: SPACES YOU USE

Q5 **During lesson time, which of the following spaces in your school have you used over the last week?**
(please select all that apply)

a) A classroom ☐1
b) A classroom with direct access to other rooms (a cluster of rooms) ☐2
c) Space in a corridor outside the classroom ☐3
d) Library ☐4
e) Hall/auditorium ☐5
f) School canteen ☐6
g) Science laboratory ☐7
h) A space with furniture or technology specifically for subjects like art, music or design ☐8
i) A workshop space with furniture for woodwork, metalwork, catering or similar ☐9
j) If you used other spaces, please tell us here:

Q6 **Outside lesson time, which of the following spaces in your school have you used for school work either on your own or with other students over the last week?**
(please select all that apply)

a) A classroom ☐1
b) A classroom with direct access to other rooms (a cluster of rooms) ☐2
c) Space in a corridor outside the classroom ☐3
d) Library ☐4
e) Hall/auditorium ☐5
f) School canteen ☐6
g) Science laboratory ☐7
h) A space with furniture or technology specifically for subjects like art, music or design ☐8
i) A workshop space with furniture for woodwork, metalwork, catering or similar ☐9
j) If you used other spaces, please tell us here:

Q7 **During lesson time, which of the following external (outside) spaces in your school have you used over the last week?**
(please select all that apply)

a) An external (outside) classroom or space – usually with seating and directly accessible from a classroom ☐1

b) Grassed area (not a sports field) not accessible from a classroom ☐2

c) An external (outside) hard ball court / sports court / hard paved area not accessible from a classroom ☐3

d) Sports field ☐4

e) If you used other types of outside space, please tell us here:

Q8 **Outside lesson time when you need to work quietly on your own, can you find somewhere in your school to do so?**

Never	Rarely	Often	Always	Not applicable
☐	☐	☐	☐	☐

Q9 **Outside lesson time when you need to work with other students (e.g. on a project together) can you find somewhere in your school to do so?**

Never	Rarely	Often	Always	Not applicable
☐	☐	☐	☐	☐

Q10 **Is there a safe place in the school where you can leave your belongings (e.g. a locker)?**

Yes	No
☐1	☐2

SECTION 3: COMFORT

Q11 When it is cold outside, how do you find the temperature in the spaces where you have lessons, or study?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I usually feel too cold	☐1	☐2	☐3	☐4
b) I usually feel too hot	☐1	☐2	☐3	☐4
c) I usually feel about right (neither too hot nor too cold)	☐1	☐2	☐3	☐4

Q12 When it is hot outside, how do you find the temperature in the spaces where you have lessons, or study?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I usually feel too cold	☐1	☐2	☐3	☐4
b) I usually feel too hot	☐1	☐2	☐3	☐4
c) I usually feel about right (neither too hot nor too cold)	☐1	☐2	☐3	☐4

Q13 How do you find the quality of the air in the spaces where you have lessons, or study?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) The air is usually fresh	☐1	☐2	☐3	☐4
b) The air is usually humid	☐1	☐2	☐3	☐4

Q14 How well can you hear in the spaces where you have lessons, or study?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I can hear the teacher's voice clearly	☐1	☐2	☐3	☐4
b) I can hear other students clearly when they are talking to the class	☐1	☐2	☐3	☐4
c) I am disturbed by noise from outside the space	☐1	☐2	☐3	☐4

Q15 When it is daylight outside, how do you find the quality of natural light in the spaces where you have lessons, or study?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) It is usually too bright	☐1	☐2	☐3	☐4
b) It is usually too dark	☐1	☐2	☐3	☐4
c) It is usually about right (neither too bright nor too dark)	☐1	☐2	☐3	☐4

Q16 In the different spaces that you use, can you see what is displayed without difficulty?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces	N/A (Not applicable)
a) I can see what is drawn or written on the whiteboard/chalkboard without difficulty	☐1	☐2	☐3	☐4	☐5
b) I can see what is displayed on the display screen (e.g. LCD screen; TV screen; projection screen) without difficulty	☐1	☐2	☐3	☐4	☐5
c) When the teacher is using apparatus for a demonstration, I can see the demonstration without difficulty	☐1	☐2	☐3	☐4	☐5

Q17 How comfortable are the desks/tables and chairs in the spaces you use?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) The chairs are comfortable to sit in	☐1	☐2	☐3	☐4
b) I can adjust the height of the chairs	☐1	☐2	☐3	☐4
c) The tables/desks are the right height for me to work at	☐1	☐2	☐3	☐4

Q18 During sunny weather, when you are outside in the school grounds, can you find somewhere in the shade?

Never	Rarely	Often	Always
☐	☐	☐	☐

SECTION 4: SAFETY AND WELL-BEING

Q19 In general, do you feel safe in your school?

Very unsafe				Very safe
1	2	3	4	5
☐	☐	☐	☐	☐

Q20 Do you feel safe (i.e. not embarrassed or afraid) in different parts of the school and grounds?
(Please tick one box in each row)

		Never	Rarely	Often	Always	N/A (Not applicable)
a)	I feel safe when using the toilet facilities inside school buildings	☐1	☐2	☐3	☐4	☐5
b)	I feel safe in the learning spaces in the school	☐1	☐2	☐3	☐4	☐5
c)	I feel safe in other parts of the school buildings	☐1	☐2	☐3	☐4	☐5
d)	I feel safe when using the toilet facilities outside the school buildings but in the school grounds	☐1	☐2	☐3	☐4	☐5
e)	I feel safe in other parts of the school grounds	☐1	☐2	☐3	☐4	☐5

SECTION 5: OVERALL SATISFACTION

Q21 In general, how satisfied are you with the spaces you use for learning?

Unsatisfied						Satisfied
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

A4.2 LEEP Teacher Questionnaire

LEEP Teacher questionnaire

INTRODUCTION

Thank you for participating in this study of OECD [Organisation for Economic Cooperation and Development].

Purpose of survey

The questionnaire is part of an international survey by the OECD Learning Environments Evaluation Programme, to gather evidence on the effectiveness of spaces in schools and to find out whether the spaces in schools support 21st century teaching and learning practices.

The findings will be used to compile an international OECD report on the effectiveness of schools to meet the demands of teaching and learning, as well as providing insights for schools taking part in the survey on where they might focus improvement on their specific school buildings.

Focus of this Questionnaire

This questionnaire primarily addresses the flexibility of the teaching spaces that you use and whether they support your teaching practice. It also asks about the IT available in the classrooms you use, and generally how satisfied you are with the spaces in the school for teaching.

A separate student questionnaire focuses on how the school building supports student learning needs.

Instructions for completion

For this questionnaire you will normally answer by checking a box. In some questions you also have the option of adding a comment or stating an alternative. Please answer the current questionnaire taking into account the subject that you spend most of your time teaching.

Your answers will be kept **confidential**. They will be combined with answers from other schools to calculate totals and averages from which no single school or school principal can be identified.

The questionnaire has 30 questions and it should take about 15-20 minutes to complete.

Thank you very much for taking part in this survey.

SECTION 1: ABOUT YOU

Q1 Please give the name of your school

Q2 Please give the country of your school

Q3 Are you female or male?

Female	Male
☐1	☐2

Q4 When were you born?

(Please write the year you were born)
19___
Year

Q5 How many years of work experience do you have?

a) Year(s) working as a teacher at this school. _____ Years
b) Year(s) working as a teacher in total. _____ Years
c) Year(s) working in other education roles (*do not include years working as a teacher*) _____ Years
d) Year(s) working in other jobs _____ Years

Q6 Is your current employment as a teacher full-time or part-time?

a) Full time. ☐1
b) Part time (equivalent to three days or more). ☐2
c) Part time (equivalent to less than three days). ☐3

Q7 What subject(s) are you teaching this term/year?

(If you teach more than one subject, please list subjects in order from the one you spend most time teaching to the one you spend least time teaching)

a)
b)
c)
d)

Q8 What grades are you teaching this term/year?
(please select all that apply)

<Grade 7> ☐1
<Grade 8> ☐2
<Grade 9> ☐3
<Grade 10> ☐4
<Grade 11> ☐5
<Grade 12> ☐6
<Grade 13> ☐7

SECTION 2: ABOUT YOUR SCHOOL

Q9 To what extent do you agree with the following statements about your school's leadership and learning environment?
(Please tick one box in each row)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	School leaders* and teachers have a shared vision about how best to use the school buildings and learning spaces.	☐1	☐2	☐3	☐4
b)	School leaders* encourage teachers to experiment with different ways of using the learning spaces we have.	☐1	☐2	☐3	☐4
c)	The design of the school buildings and learning spaces encourages collaboration with other teachers.	☐1	☐2	☐3	☐4
d)	The design of the school buildings and learning spaces encourages the use of a variety of teaching practices.	☐1	☐2	☐3	☐4
e)	The school buildings and learning spaces suit my preferred teaching practice.	☐1	☐2	☐3	☐4
f)	Our school timetabling enables us to make the most of the learning spaces we have.	☐1	☐2	☐3	☐4
g)	I am provided with time to plan collaboratively with other teachers.	☐1	☐2	☐3	☐4
h)	Teachers are provided with time to plan how best to use the school learning spaces	☐1	☐2	☐3	☐4

*Note: School leaders include the school principal, deputy principal and heads of department.

Q10 To what extent do you think the buildings and facilities at your school have an impact on the following:
(Please tick one box in each row)

		Not at all	Very little	To some extent	A lot
a)	Make you more inclined to stay at this school?	☐1	☐2	☐3	☐4
b)	Make it easier to attract new teachers?	☐1	☐2	☐3	☐4
c)	Make it easier to retain teachers?	☐1	☐2	☐3	☐4
d)	Attract parents looking to place their children in this school?	☐1	☐2	☐3	☐4

SECTION 3: THE SPACES YOU USE

Q11 Do you usually use only one classroom?

Yes ☐1 No ☐2

Q12 How many teachers (including you) are usually in the classroom/space during a class?

1 ☐1 2 ☐2 3 ☐3 4 or more ☐4

Q13 How many students are usually in a class?

Number of students: _____

Q14 In a typical week, approximately how often do you use the following types of spaces/rooms in which you teach?
(Please tick one box in each row)

	Never	Once a week	2 to 4 times a week	Everyday
a) A classroom	☐1	☐2	☐3	☐4
b) A classroom with direct access to other rooms (a cluster of	☐1	☐2	☐3	☐4
c) Space in a corridor outside the classroom	☐1	☐2	☐3	☐4
d) Library	☐1	☐2	☐3	☐4
e) Hall/ auditorium	☐1	☐2	☐3	☐4
f) School canteen	☐1	☐2	☐3	☐4
g) Science laboratory	☐1	☐2	☐3	☐4
h) A space with furniture or technology specifically for subjects like art, music or design	☐1	☐2	☐3	☐4
i) A workshop space with furniture for woodwork, metalwork, catering or similar	☐1	☐2	☐3	☐4
j) If you use other types of space, please briefly describe here:				

Q15 Over a year, approximately how often do you use external (outside) spaces at your school during class time?
(Please tick one box in each row)

	Never or hardly ever	1 to 3 times a month	Once a week	2 to 4 times a week	Everyday
a) An external (outside) classroom or space – usually with seating and directly accessible from a classroom	☐1	☐2	☐3	☐4	☐5
b) Grassed area (not a sports field) not accessible from a classroom	☐1	☐2	☐3	☐4	☐5
c) An external (outside) hard ball court / sports court / hard paved area not accessible from a classroom	☐1	☐2	☐3	☐4	☐5
d) Sports field	☐1	☐2	☐3	☐4	☐5
e) If you use other types of outside space in the school grounds, please briefly describe here:					

SECTION 4: COMFORT

Q16 When it is cold outside, how do you find the temperature in the spaces/rooms in which you teach?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I usually feel too cold	☐1	☐2	☐3	☐4
b) I usually feel too hot	☐1	☐2	☐3	☐4
c) I usually feel about right (neither too hot nor too cold)	☐1	☐2	☐3	☐4

Q17 When it is hot outside, how do you find the temperature in the spaces/rooms in which you teach?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I usually feel too cold	☐1	☐2	☐3	☐4
b) I usually feel too hot	☐1	☐2	☐3	☐4
c) I usually feel about right (neither too hot nor too cold)	☐1	☐2	☐3	☐4

Q18 Are you able to control any of the following in the spaces/rooms in which you teach?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I can control heating	☐1	☐2	☐3	☐4
b) I can control air conditioning	☐1	☐2	☐3	☐4
c) I can control glare (e.g. through blinds on windows)	☐1	☐2	☐3	☐4
d) I can control lighting	☐1	☐2	☐3	☐4

Q19 How do you find the quality of the air in the spaces/rooms in which you teach?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) The air is usually fresh	☐1	☐2	☐3	☐4
b) The air is usually humid	☐1	☐2	☐3	☐4

Q20 When it is daylight outside, how do you find the quality of natural light in the spaces/rooms in which you teach?
(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) It is usually too bright	☐1	☐2	☐3	☐4
b) It is usually too dark	☐1	☐2	☐3	☐4
c) It is usually about right (neither too bright nor too dark)	☐1	☐2	☐3	☐4

Q21 How well can you hear in the spaces/rooms in which you teach?

(Please tick one box in each row)

	In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a) I can hear the students clearly when they speak	☐1	☐2	☐3	☐4
b) I am disturbed by sounds inside the space (such as air-conditioning)	☐1	☐2	☐3	☐4
c) I am disturbed by noise from outside the space	☐1	☐2	☐3	☐4
d) Sound echoes too much in the classroom	☐1	☐2	☐3	☐4

SECTION 5: TECHNOLOGY AT THE SCHOOL

Q22 Are the following technologies available in the spaces/rooms in which you teach?

(Please tick one box in each row)

		In all of the spaces	In most of the spaces	In a few of the spaces	In none of the spaces
a)	Interactive whiteboard	☐1	☐2	☐3	☐4
b)	Wireless internet access	☐1	☐2	☐3	☐4
c)	The ability to project sound and vision for a group of students (such as a projector or large TV with audio)	☐1	☐2	☐3	☐4
d)	In-school laptops/ note books (stored in that room)	☐1	☐2	☐3	☐4
e)	Desktop computers	☐1	☐2	☐3	☐4
f)	Tablets	☐1	☐2	☐3	☐4

If you use other types of technologies, please briefly describe here:

Q23 How often do you use the following technologies in the spaces/rooms in which you teach?

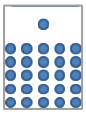
(Please tick one box in each row)

		Never or hardly ever	2 to 3 times a month	Once a week	2 to 4 times a week	Everyday
a)	Interactive whiteboard	☐1	☐2	☐3	☐4	☐5
b)	Wireless internet access	☐1	☐2	☐3	☐4	☐5
c)	The ability to project sound and vision for a group of students (such as a projector or large TV with audio)	☐1	☐2	☐3	☐4	☐5
d)	In-school laptops/ note books (stored in that room)	☐1	☐2	☐3	☐4	☐5
e)	Desktop computers	☐1	☐2	☐3	☐4	☐5
f)	Tablets	☐1	☐2	☐3	☐4	☐5

If you use other types of technologies in the school grounds, please briefly describe here:

SECTION 6: ARRANGEMENT OF THE SPACE

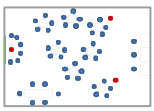
The following spatial layout types are referred to in the questions in this section (Questions 23 - 27):



Presentation:
Layouts that support explicit instruction/presentation to the whole group.

Group:
Layouts that support approaches where students are required to collaborate and work in small groups to share ideas and help each other.

Individual:
Layouts that support approaches where students work independently to write, read, research, think and reflect.



Team teaching:
Layouts that support approaches where two or more teachers work collaboratively with groups of students sharing the same space.

Q24 Thinking about your current teaching, how often do you use the following spatial arrangements?
(Please tick one box in each row)

	Never or hardly ever	1 to 3 times a month	Once a week	2 to 4 times a week	Everyday
a) Layouts that support explicit instruction/ presentation	☐1	☐2	☐3	☐4	☐5
b) Layouts that support students working in small groups	☐1	☐2	☐3	☐4	☐5
c) Layouts that support students working independently	☐1	☐2	☐3	☐4	☐5
d) Layouts that support team teaching	☐1	☐2	☐3	☐4	☐5
e) Other	☐1	☐2	☐3	☐4	☐5

If you use other types of spatial arrangements, please briefly describe here:

Q25 Thinking about the spaces/rooms in which you teach, how often do you:
(Please tick one box in each row)

	Never or hardly ever	1 to 3 times a month	Once a week	2 to 4 times a week	Everyday
a) Need to rearrange tables, chairs or other aspects of the space (e.g. sliding partitions) prior to the start of a lesson (because a previous user had them in a different position)?	☐1	☐2	☐3	☐4	☐5
b) Change the layout of the space for different classes, according to activities you had planned? (e.g. re-configure table layout, move sliding partitions)	☐1	☐2	☐3	☐4	☐5
c) Rearrange the layout of a space during a class? (e.g. tables and chairs get moved into different positions)	☐1	☐2	☐3	☐4	☐5
d) Encourage students to move furniture during class to suit group formation or participation in activities?	☐1	☐2	☐3	☐4	☐5
e) Encourage students to move around a space during a class?	☐1	☐2	☐3	☐4	☐5

Q26 Thinking about the spaces/rooms in which you teach and what supports or hinders the use of different spatial settings, how much do you agree with the following statements?
(Please tick one box in each row)

	Strongly disagree	Disagree	Agree	Strongly agree
a) It is easy to move the furniture	☐1	☐2	☐3	☐4
b) There is enough time to rearrange the furniture before classes begin	☐1	☐2	☐3	☐4
c) There is enough space to arrange the furniture in different ways	☐1	☐2	☐3	☐4
d) The furniture can easily be moved during lesson time	☐1	☐2	☐3	☐4
e) It is easy to move the technology such as data projectors and white boards to support different furniture arrangements	☐1	☐2	☐3	☐4

Q27 When you need to, in what proportion of the spaces/rooms in which you teach can you quickly (in less than 5 minutes) rearrange the furniture to create any of the following arrangements?

(Please tick one box in each row)

	In none of them	In very few (up to 25%) of them	In some (between 25 and 50%) of them	In many (between 50 and 75%) of them	In most (over 75%) of them
a) Layouts that support explicit instruction/ presentation	☐1	☐2	☐3	☐4	☐5
b) Layouts that support students working in small groups	☐1	☐2	☐3	☐4	☐5
c) Layouts that support students working independently	☐1	☐2	☐3	☐4	☐5
d) Layouts that support team teaching	☐1	☐2	☐3	☐4	☐5
e) Other (layout that you have identified in Q23e)	☐1	☐2	☐3	☐4	☐5

Q28 If you could, how often do you think that you would use any of the following spatial arrangements for teaching?

(Please tick one box in each row)

	Never or hardly ever	1 to 3 times a month	Once a week	2 to 4 times a week	Everyday
a) Layouts that support explicit instruction/ presentation	☐1	☐2	☐3	☐4	☐5
b) Layouts that support students working in small groups	☐1	☐2	☐3	☐4	☐5
c) Layouts that support students working independently	☐1	☐2	☐3	☐4	☐5
d) Layouts that support team teaching	☐1	☐2	☐3	☐4	☐5
e) Other (layout that you have identified in Q23e)	☐1	☐2	☐3	☐4	☐5

SECTION 7: SPACE FOR ADMINISTRATIVE WORK AND CLASS PREPARATION

Q29 How satisfied are you with the provision of:

(Please tick one box in each row)

	Unsatisfied				Satisfied
	1	2	3	4	5
a) A quiet space for you to work in the school before or after lessons	☐1	☐2	☐3	☐4	☐5
b) Spaces that staff can use for socialising and conversation with other staff	☐1	☐2	☐3	☐4	☐5
c) Meeting rooms	☐1	☐2	☐3	☐4	☐5

SECTION 8: OVERALL SATISFACTION

Q30 In general, how satisfied are you with the the spaces/rooms in which you teach?

Unsatisfied						Satisfied
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

A4.3 LEEP School Questionnaire

LEEP School questionnaire

INTRODUCTION

Thank you for participating in this study of OECD [Organisation for Economic Cooperation and Development].

Purpose of survey

The questionnaire is part of an international survey by the OECD Learning Environments Evaluation Programme, to gather evidence on the effectiveness of spaces in schools and to find out whether the spaces in schools support 21st century teaching and learning practices.

The information will be used to prepare an international OECD report on how well schools meet student and teachers needs for 21st century learning.

What this questionnaire is about

This questionnaire asks for background information on your school, as well as information about the allocation of spaces and use of technology.

There is a separate questionnaire for students and teachers in your school.

Instructions for completing the survey

Please read each question carefully and answer as accurately as you can.

Your answers will be kept **confidential**. They will be combined with answers from other students to calculate totals and averages from which no single student can be identified.

The questionnaire has 14 questions and it should take about 10 minutes to complete.

Thank you very much for taking part in this survey.

SECTION 1: THE STRUCTURE & ORGANISATION OF THE SCHOOL

Q1 Please give the name of your school

Q2 Please give the country of your school

Q3 Is your school a public or a private school?
(Please tick only one box)
A public school ☐1
(This is a school managed directly or indirectly by a public education authority, government agency, or governing board appointed by government or elected by public franchise.)
A private school ☐2
(This is a school managed directly or indirectly by a non-government organisation; e.g. a church, trade union, business, or other private institution.)

Q4 About what percentage of your total funding for a typical school year comes from the following sources?
(Please write a number in each row. Write 0 (zero) if no funding comes from that source.)

		%
a)	Government (includes departments, local, regional, state and national)	_____
b)	Student fees or school charges paid by parents	_____
c)	Benefactors, donations, bequests, sponsorships, parent fund raising	_____
d)	Other	_____
	Total	100%

Q5 Student numbers: What is the current total number of students enrolled in each year level

	Total		
Year 7	_____	Boys _____	Girls _____
Year 8	_____	Boys _____	Girls _____
Year 9	_____	Boys _____	Girls _____
Year 10	_____	Boys _____	Girls _____
Year 11	_____	Boys _____	Girls _____
Year 12	_____	Boys _____	Girls _____
Year 13	_____	Boys _____	Girls _____

Q6 Which of the following definitions best describes the community in which your school is located?
(Please tick only one box)
a) A village, hamlet or rural area (fewer than 3 000 people) ☐1
b) A small town (3 000 to about 15 000 people) ☐2
c) A town (15 000 to about 100 000 people) ☐3
d) A city (100 000 to about 1 000 000 people) ☐4
e) A large city (with over 1 000 000 people) ☐5

SECTION 2: THE PHYSICAL ENVIRONMENT OF THE SCHOOL

Q7 What proportion of the school's classrooms/ learning spaces are in:

a)	Temporary buildings used for 3 years or less	____ %
b)	Temporary buildings used for 4 years or more	____ %
c)	Buildings (not temporary) up to 5 years old	____ %
d)	Buildings 6-10 years old	____ %
e)	Buildings older than 10 years but renovated in the last 10 years	____ %
f)	Buildings older than 10 years but not renovated	____ %
	Total	100 %

Q8 How are classrooms/learning spaces usually allocated?
(Please tick as many as appropriate for your school)

a)	Most teachers are allocated the same classroom for all subjects.	☐1
b)	Most teachers are allocated the same learning space/classroom for a given subject for at least a semester (e.g. Room A for English, Room C for history).	☐2
c)	Most teachers use many different classrooms as allocated, for different subjects and/or year levels.	☐3
d)	Most teachers teach collaboratively (team teach) and share spaces designed for larger, single year-level groups.	☐4
e)	Most teachers teach collaboratively (team teach) and share spaces designed for larger, multi-year-level groups.	☐5

Q9 To what extent do you agree with the following statements about your school's leadership and learning environment?
(Please tick one box in each row)

		Strongly agree	Agree	Disagree	Strongly disagree
a)	School leaders* and teachers have a shared vision about how best to use the school buildings and learning spaces.	☐1	☐2	☐3	☐4
b)	School leaders* encourage teachers to experiment with different ways of using the learning spaces we have.	☐1	☐2	☐3	☐4
c)	The design of the school buildings and learning spaces encourages collaboration with other teachers.	☐1	☐2	☐3	☐4
d)	The design of the school buildings and learning spaces encourages the use of a variety of teaching practices.	☐1	☐2	☐3	☐4
e)	The school buildings and learning spaces suit my preferred teaching practice.	☐1	☐2	☐3	☐4
f)	Our school timetabling enables us to make the most of the learning spaces we have.	☐1	☐2	☐3	☐4
g)	I am provided with time to plan collaboratively with other teachers.	☐1	☐2	☐3	☐4
h)	Teachers are provided with time to plan how best to use the school learning spaces	☐1	☐2	☐3	☐4

*Note: School leaders include the school principal, deputy principal and heads of department.

Q10 To what extent do you think the buildings and facilities at your school have an impact on the following:
(Please tick one box in each row)

	Not at all	Very little	To some extent	A lot
a) Make teachers more inclined to stay at the school?	☐1	☐2	☐3	☐4
b) Make it easier to attract new teachers?	☐1	☐2	☐3	☐4
c) Make it easier to retain teachers?	☐1	☐2	☐3	☐4
d) Attract parents looking to place their children in school?	☐1	☐2	☐3	☐4

SECTION 3: TECHNOLOGY AT THE SCHOOL

Q11 What proportion of classrooms/learning spaces are equipped with (or can easily access) the following?

a) Interactive whiteboard ____ %
b) Wireless Internet access ____ %
c) The ability to project sound and vision for a class of students (such as a projector or large TV, with audio) ____ %
d) In-school laptops/netbooks (stored in that room) ____ %
e) Desktop computers ____ %
f) Charge points (for mobile devices) ____ %
g) Cabled Internet access ____ %
h) No internet access ____ %

Q12 Are students required to bring their own device (leased, bought, or regularly take home a school-owned device)?
(Tick each year level with this requirement)

7	☐$_1$	8	☐$_2$	9	☐$_3$
10	☐$_4$	11	☐$_5$	12	☐$_6$

Q13 What is the speed of the school's internet access?

a) Download speed __.__ Mb/s
b) Upload speed __.__ Mb/s
c) Line Speed __.__ Mb/s

SECTION 4: OVERALL SATISFACTION

Q14 In general, how satisfied are you with the spaces of your school?

Unsatisfied						Satisfied
1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

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